Department of Orthopaedics & Traumatology

1961-2011

The University of Hong Kong

Transcending The Past - Creating The Future

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1961-2011

Department of Orthopaedics & Traumatology

Secretary for Food and Health

Dr. York CHOW, GBS, JP
Secretary for Food and Health
HKSAR Government

On this special occasion of the Golden Jubilee Anniversary of the Department of Orthopaedics and Traumatology of the University of Hong Kong, I extend my warmest congratulations to the department for its many achievements in the past 50 years.

As an orthopaedic surgeon by training, I am proud to witness and experience first hand, the advancement in technology and enhancement in quality of care in this field pioneered by the department. From the early days in the 1960's when Prof. A.R. Hodgson pioneered the anterior approach in treating spinal tuberculosis ("the Hong Kong Operation"), the department has begun to draw worldwide attention. This trend of expertise for spinal surgery was further developed through the leaderships of Prof. Arthur Yau, Prof. John Leong and now Prof. Keith Luk. I was fortunate to benefit from many of them during my days of clinical practice. Apart from providing world class teaching, clinical services and research to the local community, the department's worldwide reputation has attracted orthopaedic surgeons from around the world to come for formal training. Within a short span of decades, it has established international network with Centres of Excellence worldwide, facilitating academic and professional exchanges between local and overseas experts in this field.

Over the past years, generations of dedicated orthopaedic surgeons in the department have unselfishly contributed to the vast development of this field and earned our city a renowned reputation. I commend the concerted efforts by devoted members in offering orthopaedic service to the community at high standards. With the history and culture of excellence, I am confident that the department will continue to flourish and explore new horizons in the future.

Vice-Chancellor

Professor Lap Chee TSUI
Vice-Chancellor
HKU

When the University of Hong Kong was founded a century ago, its principal objective was to nurture students who would then go on to serve society. Over the past one hundred years, the University has stayed true to this vision, building a long and distinguished history of knowledge creation and service.

Over the past fifty years, the Department of Orthopaedics and Traumatology (previously the Department of Orthopaedic Surgery) has grown from being a division within the Department of Surgery to an internationally acclaimed academic department in its own right, and one that is ready to meet the challenges of the changing times we live in.

The rapidly expanding technology and knowledge in different fields of orthopaedics have brought opportunities for the department to introduce new sub-specialisations in its structure, new roles of leadership and new directions for expertise management.

The department has also been increasing its collaboration across divisions, with different partners coming together to build capacity while expanding divisional output. Basic sciences research initiatives have taken on new directions while continuing with the on-going studies in genetics, biomaterials and tissue engineering.

Institutional collaborations, both local and international, continue to be developed, with the department establishing worldwide networks with centres of excellence in China, Canada, Finland, Japan, Netherlands, Switzerland and the USA.

I am confident that the respect and recognition afforded to the Department of Orthopaedics and Traumatology will continue to grow as a result of its outstanding and forward-looking teaching, therapy and research.

For the past century, the University has known the importance of knowledge and education in transforming individual lives, building communities and serving society. Indeed, at the heart of our Centenary Celebrations are the values: Knowledge, Heritage and Service. And as the University begins its 2nd century, these are the values we will continue to uphold.

My warmest congratulations to the Department of Orthopaedics and Traumatology on its half-century of achievements. May this milestone mark the beginning of further growth and success for the department and all its members.

Dean of Medicine

Professor Sum Ping LEE
Dexter HC Man Family Professor in Medical Science
Dean of Medicine
Li Ka Shing Faculty of Medicine
HKU

From its establishment in 1961, the Department of Orthopaedics and Traumatology at The University of Hong Kong has grown steadily and impressively into the internationally acclaimed academic force it is today.

With its solid foundation and rich experience in clinical services, the department has provided high-quality teaching and training programmes for the profession and a comprehensive orthopaedic service to the community. It has excelled in the integration of basic science research, clinical research, and clinical application. The department has also built strong connections and been engaging in knowledge exchange with reputable regional and international orthopaedic centres.

To meet a range of social challenges that have arisen over the years, along with new expectations placed on sub-specialties, the department has developed eight service divisions, namely General Orthopaedics and Oncology, Hand and Foot Surgery, Joint Replacement Surgery, Spine Surgery, Paediatric Orthopaedics, Sports & Arthroscopic Surgery, Orthopaedic Trauma, and Rehabilitation Service. Each division is committed to achieving academic and research excellence and quality patient care, and has shown itself well capable of meeting these objectives. It is indeed rewarding to see the department and its sub-specialty divisions always seek to work together in the quest for excellence.

This book is both a comprehensive guide and a meaningful recollection of the department's history and achievements. It showcases the department's vision, development and professional strengths and helps our stakeholders and international counterparts to learn more about its outstanding achievements to date and the wonderful possibilities that lie ahead in the future.

I would like to offer my heartfelt congratulations to the department on its remarkable accomplishments over the past 50 years. Special thanks should also go to all of its members, past and present, for their invaluable contributions in upholding the high standing of the department and their unwavering commitment to serving the public.

I extend my very best wishes for even greater success in the years ahead.

President of HKCOS

Dr. Yuk Yin CHOW
President
The Hong Kong College of Orthopaedic Surgeons

On the 50th Anniversary of the Department of Orthopaedics & Traumatology, I am sure every one of us are terribly excited and busy to welcome it. I, as a former graduate of the department, am no exception and would like to send all my good wishes and thoughts to mark this very special occasion.

As can be seen, through its 50-years dedication, the very hinge of all virtues, the Department of Orthopaedics & Traumatology has not only nurtured many world renowned scientists and clinicians, but also spearheaded numerous distinguished orthopaedic operations and caused marked development of Orthopaedics in Hong Kong, the Mainland and the world.

As can also be seen, the graduates of the department have promisingly served the Hong Kong citizens and achieved their remarkable performance with one notable quality: an anchored mind of quality service to understand the expectations and concerns of the people they seek to restore their health.

For decades, we have noted many quantum leaps in the medicine field and the Orthopaedics and Traumatology discipline has nowadays turned into a highly specialized and sophisticated clinical science. Suffice it to say that the concerned department has contributed in no small part the advancement of this particular science foundation; upon which future development and innovation can be based I am sure.

Though 50 years in the history of science is only a short period relatively, the leadership capacity behind to drive the science forward and make it an unparalleled success by the leaders of the Department of Orthopaedics & Traumatology is most commendable and admirable. How can it be otherwise?

In the years that lie ahead, I am sure the department will persevere to excel to raise future elites in Orthopaedics & Traumatology in order to serve not only Hong Kong but also the rest of the world. Once again please accept my sincere congratulations and I do hope the 50th Anniversary will be a huge success and everyone will have a good time.

Chief Executive of Hospital Authority

Dr. Pak Yin LEUNG
Chief Executive
Hospital Authority

It gives me great pleasure in congratulating the Department of Orthopaedics and Traumatology of the University of Hong Kong on its 50th Anniversary.

Over the years, the Department of Orthopaedics and Traumatology has been dedicated to providing excellent service to our community, world class training for our undergraduates and postgraduates and clinical and basic science research of the highest quality.

Academic orthopaedic surgery was first introduced in Hong Kong in 1951. When the department was formed in 1961, the department already earned a world-wide reputation with its remarkable achievement in pioneering the anterior approach to treat spinal tuberculosis.

This has not only put Hong Kong on the map of world class orthopaedic surgery, the continuous dedication and achievement of its staff has helped the department remains an international leader in spinal surgery since then.

In the past fifty years, the department has grown from a modest beginning with a few staff to the present department of multiple divisions covering all key subspecialties. The establishment of the General Orthopaedic division also strengthened the department's ability to train orthopaedic surgeons to be competent in holistic patient care.

With the rapid expansion of medical knowledge and skills, the special strength of the department in both basic science and clinical research will no doubt continue to play a prominent role in advancing knowledge in the field of orthopaedics through high quality, clinical and basic scientific research.

On this joyous occasion, I extend my best wishes to the Department of Orthopaedics and Traumatology for its continued success in the years ahead.

Cluster Chief Executive of HK West Cluster

On the occasion of the 50th Anniversary of the founding of the Department of Orthopaedics & Traumatology, I wish to extend my heartiest congratulations to the department and its members.

Considering the sheer quantity of ground-breaking achievements originating from the Department of Orthopaedics and Traumatology in the past five decades, fifty years seems an implausibly short period of time for such productivity. Hong Kong West Cluster is proud to have the Department of Orthopaedics & Traumatology as one of our strongest partners.

For the past five decades, the department has continually excelled in providing high-quality, patient-centered orthopaedic services to the community, based on its pursuit of Empathy, Expertise, and Excellence. It worked hand in hand with Queen Mary Hospital, The Duchess of Kent Children's Hospital, Fung Yiu King Hospital and MacLehose Medical Rehabilitation Centre to provide high quality patient-centered orthopaedic services to the community covering a broad range of general orthopaedic problems to diseases requiring highly specialized orthopaedic services including the musculoskeletal trauma, oncology, joint replacement, sports injury, hand and foot diseases, paediatric orthopaedics, spine surgery, and rehabilitation services. I am sure that our patients would be as delighted as we are, to see the remarkable development of orthopaedic services in Hong Kong.

As the teaching hospital of Li Ka Shing Faculty of Medicine, The University of Hong Kong, Queen Mary Hospital is committed to provide appropriate environment, staff and facilities for orthopaedic training to benefit Hong Kong medical professions and our patients. I am confident that our collaboration with the department will continue to nurture future generations of orthopaedic surgeons.

On behalf of the Hong Kong West Cluster, I wish the department every success in forging new paths into providing a brighter and healthier future for the people of Hong Kong.

Dr Che Chung LUK
Cluster Chief Executive
Hong Kong West Cluster
Hospital Authority

Head of Department

Professor Keith Dip Kei LUK
Tam Sai Kit Professor in Spine Surgery
Head, Department of Orthopaedics & Traumatology
HKU

Looking back at the staggering amount of research and innovations that have originated from the Department of Orthopaedics and Traumatology, it is almost difficult to imagine its obscure beginnings as a division from within the Department of Surgery only 50 short years ago. Under the pioneering guidance of Professor AR Hodgson, the initial focus of the department was placed on the treatment of patients with tuberculosis and poliomyelitis. Despite its humble beginnings, the expertise of the newly-found department quickly encompassed all areas of orthopaedic surgery. As the baton passed from Professor Hodgson, to Professor Arthur CMC Yau, to Professor John CY Leong, the spirit of the department never wavered from establishing itself as a world-renowned academic department.

With a solid foundation laid down by our predecessors in the past five decades, the department has now entered a new era of sub-specialization in response to the rapidly expanding technology and knowledge in the different fields of orthopaedics. Our expansion to eight divisions based on different clinical sub-specialties has allowed for more focused development and greater administrative autonomy. With this new structure, we continue to pave new paths in professional development, research capacity, academic achievement, and quality patient care.

In keeping with the legacy established in the past five decades, we continue the pledge to offer orthopaedic services to the community at high standards in accordance with our status as a centre of excellence in all subspecialties at an international level. We take great pride in presenting the achievements and developments of our department in this 50th anniversary book. May this mark the continuation of a tradition in excellence and innovation for many more decades to come.

Department Timeline 1961-2011

1941

- The University of Hong Kong was turned an emergency relief hospital in anticipation of the war casualties that were to be treated at Queen Mary Hospital

1951

- Dr. AR Hodgson was recruited to head the Orthopaedic Unit of the Department of Surgery at the University of Hong Kong.

1956

- Duchess of Kent Children's Hospital (then called the Sandy Bay Convalescent Home) was established by the Society for the Relief of Disabled Children (SRDC)
- The first paper on the anterior approach to treat spinal tuberculosis as devised by Dr. Hodgson and Professor Francis Stock was published in the British Journal of Surgery. The surgery became informally known as "the Hong Kong surgery" and greatly helped surgeons to effectively treat the deluge of tuberculosis cases in Hong Kong

1958

- Dr. AR Hodgson published a paper with Dr. SF Lam on the foot shapes among shoe-wearing and non-shoe-wearing populations of Hong Kong, and showed that hallux valgus was an affliction common to shoe-wearers

1961

- The Department of Orthopaedic Surgery was formally established, and Dr. AR Hodgson was appointed as its Founding Professor

1967

- The Professorial Block was completed at Queen Mary Hospital
- The department's audiovisual laboratory was established to aid patient care and the department's research efforts

1970

- Dr. Arthur Yau succeeded Professor Hodgson as Chair Professor of the Department of Orthopaedic Surgery
- The first total hip replacement in Hong Kong was performed by Professor Hodgson

1973

- Dr. Arthur Yau and Dr. John O'Brien developed a novel halo-pelvic apparatus for correction of tuberculosis kyphosis

1975

- Professor John CY Leong succeeded Professor Yau as head of the Department of Orthopaedic Surgery

1977

- The first successful microsurgical thumb replant in Hong Kong was performed by Dr. SP Chow at Queen Mary Hospital
- The first transpedicular decancellation osteotomy for ankylosing spondylitis was carried out in Hong Kong

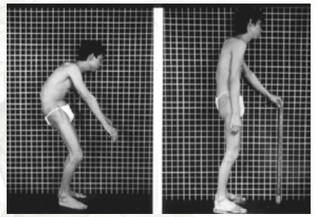
1981

1983

- Bone banking services was established at Queen Mary Hospital, the first of such services offering regional bone banking and allograft provision to hospitals all over Hong Kong

1984

- MacLehose Medical Rehabilitation Centre officially commenced offering post-operative support to patients



1986

- The Motion Analysis Laboratory was established at Duchess of Kent Children's Hospital to aid research efforts

1988

- The department's first graduate student received a Masters of Philosophy degree, reinforcing its dedication to higher education

1989

- Dr. Keith DK Luk introduced pedicle screw fixation for PLIF to Hong Kong

1992

- Intraoperative spinal cord monitoring was introduced as a routine for scoliosis surgery

1993

- The discovery of differences in upper femoral shapes of Asians and Caucasians led to the development of the first "Asian femoral stem"
- The outpatient clinics at Nethersole Hospital on Bonham Road merged with Sai Ying Pun clinics

1994

- The first motion analysis laboratory at the Duchess of Kent Children's Hospital was expanded to treat children afflicted with neuromuscular disease

1995

- The Orthopaedic Research Centre was established at the Li Ka Shing Faculty of Medicine
- The first scoliosis screening programme in Hong Kong for schoolchildren was initiated by the department and the Department of Health
- A neuromuscular centre was set up at the Duchess of Kent Children's Hospital to provide treatment for cerebral palsy patients
- A Center for Spinal Disorder was established at the Duchess of Kent Children's Hospital for the management of chronic back pain

1996

- The inpatient orthopaedic service at Grantham Hospital was relocated to Queen Mary Hospital

1999

- A centre for joint replacement surgery was founded in Shandong Province in collaboration with Yantai Shan Hospital
- A collaborative Spine Centre was established with Sun Yat Sen Hospital in Guangzhou

2000

- Outpatient services were relocated from Sai Ying Pun to Block S of Queen Mary Hospital
- Collaborative Center for Spinal Disorder established with Peking Union Medical College
- Professor Keith DK Luk was appointed Chair Professor

2001

- The first picture archiving and communication system (PACS) in Hong Kong was installed at the Duchess of Kent Children's Hospital

2002

- Li Ka Shing Faculty of Medicine Building was officially opened

2003

- Professor Keith DK Luk succeeded Professor Leong as head of the Department of Orthopaedic Surgery

2004

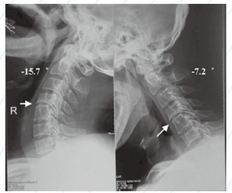
- The department's name was officially changed to Department of Orthopaedics and Traumatology
- A novel artificial finger joint was developed
- The first Hong Kong International Orthopaedic Forum was organized by the department on "The Ageing Skeleton"
- The department was awarded HK$50 million by the Research Grants Council of Hong Kong as part of the Areas of Excellence (AOE) program

2005

- The department restructured from three teams into seven sub-specialty divisions

2007

- Critical Clinical Pathway for Geriatric Hip Fractures was established to better patient care
- The world's first series of successful Intervertebral Disc Allograft Transplantations was published by Professor Keith Luk in the Lancet
- Professor Keith Luk was endowed the Tam Sai Kit Professor in Spine Surgery



2008

- Genetic risk factors for degenerative disc diseases in the Chinese populace were discovered
- The China Patient Project was launched to help disadvantaged paediatric patients receive care at Duchess of Kent Children's Hospital
- The first remotely distractible growing rod system for early onset scoliosis was carried out

2009

- The Division of Orthopaedic Rehabilitation was established, increasing the total number of sub-specialty divisions

2010

- AOE scheme funding from the Research Grants Council for research in degenerative disc disease was renewed
- The first randomized controlled trial assessing a novel superelastic rod for scoliosis correction was completed

2011

- The Motion Analysis Laboratory at Duchess of Kent Children's Hospital underwent renovation after two decades of service
- The department celebrated its 50th Anniversary
- The HKU Orthopedic Foundation was established to fund future research and teaching

History

1961-2011

Department of Orthopaedics & Traumatology

A Primitive, Traumatic Beginning
The Birth of Academic Orthopaedics
Founding the Department of Orthopaedic Surgery
Establishing an International Reputation
Developing New Areas of Specialisation
Pioneering Research and Collaboration
At the Forefront of Medical Research
Looking Ahead

A Primitive, Traumatic Beginning

Before the Orthopaedic and Trauma Unit was established at the University of Hong Kong after World War Two, orthopaedic care in Hong Kong could only be described as primitive. General surgeons, not specialists, treated all orthopaedic cases, with predominant emphasis on trauma. Emergency field surgery was the order of the day in wartime Hong Kong and advances in orthopaedic techniques and technology were virtually nonexistent.

When the Japanese Army invaded Hong Kong on Christmas Eve 1941, the University of Hong Kong was transformed into an emergency relief hospital treating an overflow of war casualties from Queen Mary Hospital. Allegiances notwithstanding, doctors treated the wounded as best they could in adverse conditions.

In his autobiography *Hong Kong Farewell*, Dr. E. Gosano recounted the experiences he endured with fellow University of Hong Kong medical staff. Upon their captivity by the Japanese Army, they were immediately put to work treating and cleaning wounds in a makeshift prison hospital of zinc huts. Injuries included gunshot wounds to the arms and knees, as well as aneurysms caused by shrapnel wounds. Amputations were also performed. But not all patients survived surgery conducted in such deplorable conditions.

In those wartime years, orthopaedics in Hong Kong had little opportunity to evolve beyond simple field surgery.

Queen Mary Hospital

It was first suggested to Governor Sir Cecil Clementi that Hong Kong direly needed a new hospital in 1925 because the Government Civil Hospital could not keep up with demand. However, the new hospital was not officially proposed until 1933. On April 13th, 1937, the Governor of Hong Kong, Sir Andrew Caldecott, declared Queen Mary Hospital open.

This new hospital played an indispensible part in treating casualties when the Japanese Air Force attacked Hong Kong on December 8th, 1941. Throughout the bombing and the subsequent Japanese occupation of the city, the staff at Queen Mary Hospital worked tirelessly to treat the wounded.

By October of 1945, the hospital reverted to regular services, but faced a myriad of problems due to wartime shortages. But by the end of the war, the hospital had returned to its former glory, and was even planning further expansions to accommodate the influx of war refugees. When the Department of Orthopaedics and Traumatology was officially formed in 1961, the hospital and the Medical Faculty had already been partnered for many years. Over the next fifty years, the department and Queen Mary Hospital continued to foster and maintain this relationship, and patients have benefited from it. Currently, the department offers outpatient services and has access to over 100 beds at the hospital.

The Birth of Academic Orthopaedics

The academic orthopaedics discipline was officially introduced to Hong Kong in 1951. The Department of Surgery at the University of Hong Kong, led by Professor Francis E. Stock, decided the time was right to establish an Orthopaedic and Trauma Unit. Only then did responsibility for treating patients suffering from orthopaedic and musculoskeletal trauma problems shift from general surgeons to specialist doctors. Dr. Arthur Ralph Hodgson was recruited from the U.K. to head the unit, with Dr. Harry S.Y. Fang on secondment from the Department of Surgery, and Dr. S.F. Lam as clinical assistant.


Prof. AR Hodgson


Dr. SF Lam


Prof. Sir Harry Fang

Founding of the Orthopaedic and Trauma Unit made it possible to focus on and address major orthopaedic issues confronting post-war Hong Kong – most urgently, contending with two devastating diseases. Tuberculosis was endemic, mostly proliferating in war refugee squatter camps. Bone and joint tuberculosis, in particular spinal tuberculosis, accounted for some 5,000 new cases a year. Acute and chronic poliomyelitis was also widespread, with many patients suffering from paralysis and multiple residual deformities of the musculoskeletal system.

From 1951-1961 – before the Department of Orthopaedic Surgery was formally established – the Orthopaedic and Trauma Unit under Dr. A.R. Hodgson made full use of the prevalence of spinal tuberculosis cases to develop unique surgical expertise on the spine and conduct clinical research on the phenomenon. Applying an anterior approach with radical resection of the disease focus, and anterior strut grafting in compression, earned the unit a worldwide reputation for pioneering new treatments. This innovation not only allowed greater flexibility in managing spinal problems, but also enabled greater bone mass for fusion and instrumentation, in turn providing patients better stability and earlier rehabilitation.

TB thoracolumbar junction in 1958

Hong Kong Operation

This radical new surgical method of treating spinal tuberculosis quickly gained momentum and was informally named the "Hong Kong Operation". The first paper on the surgery was published to much acclaim in the *British Journal of Surgery* in 1956. Further papers recording excellent results of the procedure persuaded Britain's Medical Research Council to initiate a prospective trial evaluating the procedure against more conventional and conservative treatments of the time – anti-tuberculosis medication (with or without plaster immobilisation) or limited surgical debridement. Its success earned the University of Hong Kong an early reputation for excellence and innovation.

Duchess of Kent Children's Hospital

The Duchess of Kent Children's Hospital was founded by the Columban Sisters in 1955, originally as a convalescent hospital known as the "Sandy Bay Children's Convalescent Home". As a volunteer-aided facility, it was staffed by nursing teams provided by the Irish Missionary Society of St. Columban, and financially supported by the Society for the Relief of Disabled Children. Dr. John P. O'Brien, an Australian orthopaedic surgeon trained in Edinburgh, served as the hospital's Medical Director from 1967 to 1975, playing a key role in its development of orthopaedic services.

In addition to convalescent beds, the Home also provided physiotherapy, hydrotherapy and occupational therapy, both for children with chronic orthopaedic problems and patients from Queen Mary Hospital suffering from musculoskeletal trauma. A small school run by teachers from the Red Cross gave paediatric patients the opportunity to continue their kindergarten or primary education during prolonged stays.

Although the grip acute spinal tuberculosis and poliomyelitis had on Hong Kong largely diminished by the end of the 1960s, residual spinal and limb paralysis and deformities created a large population of children requiring further treatment. Such treatment was often complicated, requiring prolonged hospitalisation.

In response, The Society for the Relief of Disabled Children embarked on an ambitious expansion and clinical upgrade of the Home in 1968 – and in 1970, after a visit from Katherine, the Duchess of Kent, it was renamed the Duchess of Kent Children's Orthopaedic Hospital (later to be known as the Duchess of Kent Children's Hospital). The hospital subsequently became a 200-bed orthopaedic facility with full operating theatres, daytime clinical laboratory services, immediate-care unit, x-ray department and out-patient services.

Expertise gained from earlier studies on the pioneering anterior approach to the spine was put to use in the treatment of severe and crippling spinal deformities. Initially, emphasis was on tuberculous kyphosis, but the procedure was also used to great success on scoliosis, deformities from poliomyelitis and other paediatric orthopaedic problems. This surgical approach became so well known that "the Duchess of Kent" or "DKCH" became synonymous with excellent spinal and paediatric orthopaedics among the orthopaedic community.

In turn, this renown attracted numerous overseas orthopaedic surgeons to elect the hospital and Department of Orthopaedics and Traumatology for their formal training as fellows, for periods of six months to a year. To date, over 200 fellows have been trained, becoming knowledge conduits between the hospital and their home countries.

Dr. Louis C.S. Hsu was appointed Medical Director of the Duchess of Kent's Children's Hospital in 1978, and remained until 1990. Along with Dr. John Leong, Dr. Hsu further expanded clinical services and research, while promoting greater basic scientific research endeavours. During his tenure, Hong Kong's prevalent pathologies changed with the gradual disappearance of poliomyelitis and reduction of tuberculosis. Instead, the hospital's main clinical load became cerebral palsy and patients with complicated congenital anomalies.

Professor Keith Luk succeeded Dr. Hsu as Medical Director in 1991, and was subsequently appointed Hospital Chief Executive in 1993 when the Hospital Authority assumed management of all hospitals in Hong Kong. With strong support from the Society for the Relief of Disabled Children, the Duchess of Kent Children's Hospital underwent a major renovation and upgrading of patient facilities in 1998.

In 2000, the Duchess of Kent Children's Hospital became the first filmless hospital in Hong Kong, by digitising all x-rays for ease of transfer and storage. Retrospective installation of radiographs of the past 40 years into the picture archiving and communication system (PACS) was completed in 2005. This has markedly enhanced the already excellent record system, while further facilitating service and clinical research.

Today, hospital staff continue to lead, both locally and regionally, in the fields of paediatric orthopaedics and spine surgery. State-of-the-art surgical and intraoperative spinal cord monitoring techniques have been utilised to great success. Basic scientific research now encompasses the fields of genetics and tissue engineering, as well as instrument design.

The traditional influence of orthopaedics on the development of the Duchess of Kent Children's Hospital gradually declined after Professor Luk left his post as Hospital Chief Executive to head the Department of Orthopaedics and Traumatology at Queen Mary Hospital. The hospital has since been included in the administrative purview of the Cluster Chief Executive of the Hong Kong West Cluster. Despite its reduced emphasis on orthopaedic-oriented development, the Duchess of Kent Children's Hospital remains an integral partner of the Department of Orthopaedics and Traumatology.

Founding the Department of Orthopaedic Surgery

Professor Dafydd E. Evans noted the historic milestone for the Department of Orthopaedic Surgery in his monograph titled 'Constancy of Purpose' celebrating the centenary of HKU's Faculty of Medicine in 1987. He wrote: "The point came in 1961 when the unit was ready to spread its wings and become a fully fledged department within the Faculty. Professor Hodgson was appointed to the Chair of Orthopaedic Surgery and his supporting staff consisted of Dr. Harry S.Y. Fang and Dr. A. Brodetti. The department was still small and still lacked facilities, being housed in tiny premises on Eastern Street in the Sai Ying Pun district below the main University campus." From these humble beginnings, the department began to flourish and grow.

HKU's clinical departments acquired decent, albeit rather limited, accommodation with completion of Queen Mary Hospital's Professorial Block in 1967. This was a significant step forward for the government's Medical and Health Department; acknowledging the growing importance of providing space and facilities for clinical research and basic research – and at the same time positioning Hong Kong at the vanguard of medical science. There were rooms for the holder of the Chair as well as two or three teachers, and a clinical research laboratory. The need for comprehensive visual documentation in clinical research was also recognised for the first time, and a pioneering audiovisual laboratory was established. To this day, the facility continues to support many departments within the faculty and Queen Mary Hospital.

Nethersole Hospital

Commissioned in 1893, Nethersole Hospital was one of the oldest hospitals in Hong Kong. Along with the Alice Memorial Hospital and the Ho Miu Ling Hospital, Nethersole Hospital was one of a series of medical facilities offering western medical services on Hong Kong Island to the Chinese community. The 1887 establishment of the Alice Memorial Hospital was made possible by a generous donation by Sir Kai Ho, in memory of his wife, who had passed away from typhoid fever upon her arrival in Hong Kong. In 1954, all three hospitals were incorporated under the Alice Ho Miu Ling Nethersole Charity Foundation Ordinance, and were collectively renamed as the Alice Ho Miu Ling Nethersole Hospital. Originally situated right below Mid-Levels on Bonham Road, the hospital relocated to Chai Wan in 1993, and was replaced by the Pamela Youde Nethersole Hospital. The Alice Ho Miu Ling Nethersole Hospital moved to Tai Po in 1997, and continues to offer its services there.

The Department of Orthopaedics and Traumatology offered outpatient services at Nethersole Hospital until 1993, providing Hong Kong's population with orthopaedic assistance. However, upon the hospital's relocation, the department's outpatient services merged with the Sai Ying Pun Jockey Club Outpatient Clinic.

Sai Ying Pun Jockey Club General Outpatient Clinic

The Department of Orthopaedics and Traumatology also offered outpatient services at the Sai Ying Pun Outpatient Clinic, providing the public with an alternate venue to receive treatment from orthopaedic specialists. This clinic's workload vastly increased in 1993, when the Alice Ho Miu Ling Nethersole Hospital relocated to Chai Wan, and the department's orthopaedic services transferred to Sai Ying Pun. In 2000, in an effort to improve general efficacy, orthopaedic outpatient services were wholly integrated and reallocated to Block S of Queen Mary Hospital.

Establishing an International Reputation

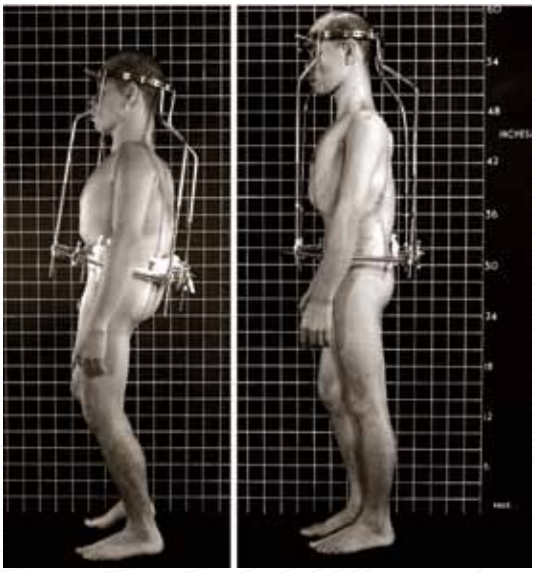
Building on the momentum of research spearheaded and consolidated in the 1950s and 60s, the academic reputation of the department continued to significantly advance in the 1970s. Much greater development and resource allocation to basic science research was fostered in this period. The department was also organised into two teams led respectively by Professors Hodgson and Yau, teams A and B alternating shifts to optimise patient care.

Prof. Arthur Yau (left) succeeded Prof. AR Hodgson (right) to be the Department Head in 1975

As Professor Hodgson neared retirement, Dr. Arthur C.M.C. Yau took up the mantle of leadership in 1975, continuing the tradition of excellence Professor Hodgson had instilled.

With spinal tuberculosis still prevalent, Dr. Yau and Dr. John P. O'Brien developed new techniques for the correction of tuberculosis kyphosis. The novel clinical concept of a halo-pelvic apparatus was designed with help from Dr. Joe Clark of the Department of Mechanical Engineering. After a few prototype refinements on the drawing board, the apparatus was finally manufactured and used in clinical trial. Essentially, it enabled a circumferential osteotomy of the spine at the level of kyphosis, followed by controlled distraction to achieve correction, with the patient awake and ambulant. Used over a lengthy period of time, it also took advantage of the viscoelastic behaviour of the spine to make sustained corrections of the abnormalities. Although certain complications of the neck arose after prolonged use of this treatment, many patients benefited from it – until its gradual replacement by other means of spinal fixation or correction.

Such dedication to optimising patient care came to define the department's continued development. Three major avenues of research were also laid out – basic science, clinical work and socio-economic outreach. The latter involved collaboration with the Hong Kong Labour Department, to promote occupational safety as Hong Kong endured a proliferation of hand surgery cases among factory workers as manufacturing expanded. The department promptly initiated a Senior Lectureship in Hand Surgery, appointing Dr. Shew Ping Chow to the post.



Halopelvic traction

Dr. Chow established and led the first Hand and Microvascular Team in Hong Kong, laying the foundations for microvascular surgery in the territory. His team performed the first digital replantation in Hong Kong and by the end of the decade, at least one hand replantation surgery was conducted every week, as well as numerous flap surgery cases. As a result of these developments in the 1970s, Hong Kong is now internationally recognised as a premier centre for microvascular surgery.

Prof. SP Chow

Grantham Hospital

Named for then-Governor Alexander Grantham, Grantham Hospital was founded in 1957 by the Hong Kong Tuberculosis, Chest and Heart Diseases Foundation. Located in Aberdeen, the hospital offered cardiological and respiratory services to patients on Hong Kong Island. The Department of Orthopaedics and Traumatology began to enjoy a relationship with the hospital early in its history. This partnership intensified in 1977, when joint replacement and hip fracture cases were moved to Grantham Hospital due to patient overflow at Queen Mary Hospital. Not only did this greatly relieve the bed congestion problem at Queen Mary Hospital, it also provided patients with better access to post-treatment rehabilitation. Such cases continued to be treated at Grantham Hospital until 1996, when inpatient services were relocated back to Queen Mary Hospital, thus ending a chapter of Hong Kong orthopaedic history.

Prof.John CY Leang

Developing New Areas of Specialisation

The department underwent a significant period of growth and expansion in the 1980s as Hong Kong entered a booming economic era.

Under the leadership of Professor John C.Y. Leong, who succeeded Professor Yau in 1981, a gradual increase in both academic and government-employed staff enabled the founding of small special interest groups such as trauma, sports injury, tumour surgery and joint replacement surgery. As well as improving patient care, these early specialisation initiatives encouraged staff to further develop their areas of specialist interest and expertise.

One development of special note was the initiation of sports medicine at Queen Mary Hospital. This new programme focused on common ailments that plague athletes and active modern individuals. Underlining the department's commitment to exploring all facets of orthopaedic treatment, new rehabilitation facilities were opened at the MacLehose Medical Rehabilitation Centre.

Orthopaedic ward in 1982

Due to lack of funding and an overwhelming workload of clinicians, the department was initially unable to conduct basic science research and establish the academic backbone from which clinical research could grow.

Queen Mary Hospital in 1980s

However, thanks to collaborative efforts with the Department of Mechanical Engineering of the University of Hong Kong, many biomechanics projects were completed by the end of the decade. Such collaborative efforts gradually gathered pace and in the second half of the decade, Dr. Keith D.K. Luk jointly supervised the department's first Masters of Philosophy student with the Department of Mechanical Engineering. This milestone marked the beginning of a new era of research.

Pioneering Research and Collaboration

Record-breaking economic growth in Hong Kong afforded increased funding for the Hospital Authority, leading to redevelopment of hospitals and new medical facilities with more doctors and overall improvement in clinical care. The Hong Kong Government recognised that quality research requires substantial funding. The Research Grants Council was founded to finance and oversee research projects – representing a quantum leap in higher education in Hong Kong.

This development in turn enabled the department to recruit a bioengineer, signaling a marked impetus for basic research. Initially, the focus was on biomechanics, gradually encompassing biomaterials and later tissue engineering. Several post-doctoral fellows were subsequently recruited, and the number of higher degree students rose steadily. Because of this growth in department size, the original A and B teams were reorganised into A, B, and C teams – a portent of sub-specialisations to come. Team A concentrated on hand and foot issues, as well as trauma cases. Team B focused on sports medicine, joint replacements and patients with oncological conditions. Team C was responsible for spinal problems and paediatric patients.

Collaborative project in China investigating the etiology of scoliosis

In 1995, the Orthopaedic Research Centre was formally established, providing advanced laboratory facilities for musculoskeletal research. Consequently, the number of basic science research papers published in international refereed journals began to parallel the amount of clinical research papers. To forge closer links between the department's clinical and basic science research branches, a new programme invited clinicians interested in basic science research to spend up to a year in the Department of Biochemistry for hands-on as well as theoretical experience. Donations from a benefactor further boosted stem cell and tissue engineering research.

Further collaborations within the university were initiated with the Departments of Biochemistry, Medicine and Institute of Molecular Biology, as well as with international institutions. Although Hong Kong' sovereignty was not returned to China until 1997, the department also established a multitude of ties with Mainland Chinese counterparts in the early half of the decade, in anticipation of closer relations between the two. One such project was the establishment of the Joint Centre for Spinal Disorder with Peking Union Medical College.

This overall increase in research output bolstered the department's burgeoning international reputation, with the efforts of department members becoming recognised internationally by their peers.

Clinically, the department also made great strides in 1995 when an adolescent idiopathic scoliosis screening programme was launched in conjunction with the Department of Health and the Duchess of Kent Children's Hospital. The testing protocol proved sensitive and predictive, ensuring early treatment of affected schoolchildren, and was quickly acknowledged as the most comprehensive programme of its kind in the world. The unprecedented size of the cohort also allowed numerous studies to be conducted on the cost-effectiveness of scoliosis screening – shedding more light on this contentious issue and yielding valuable insight into the debilitating disease.

At the Forefront of Medical Research

Professor Keith D.K. Luk led a major, formal restructuring of the department when he took over as head after Professor Leong retired at the end of 2003. With his encouragement and leadership, seven sub-specialty divisions were created out of the original three. These provided specialist-led services on general orthopaedics and oncology, hand and foot surgery, joint replacement surgery, paediatric orthopaedics, spine surgery, sports and arthroscopic surgery, and orthopaedic trauma.

Prof. Keith DK Luk

In line with the spirit of sub-specialisation was the maintenance of the Division of General Orthopaedics and Oncology. This currently serves two important functions – coordinating and ensuring that holistic service is provided to patients, and shouldering the responsibility of training general orthopaedic surgeons. In 2009, the department established its eighth sub-division, the Division of Orthopaedic Rehabilitation, to serve post-operative needs of patients.

With the department's restructuring, expertise was leveraged for more focused development of the individual divisions. Increased administrative autonomy in each also ensured more efficient use of available resources to maximise productivity.

Each division has since grown considerably in size, adapting to contribute in the development of cutting-edge orthopaedic technology that enhances surgery outcomes and patient wellbeing. The oncology arm of the Division of General Orthopaedics and Oncology has begun utilising computer-aided navigation in tumour surgery, performing limb salvage tumour resection surgery.

As the population in Asia continues to grow at a rate far outstripping that of other continents, tailoring devices and procedures for the Asian physiology has meanwhile become a significant trend; and the department has embraced its strategic location at the hub of this population growth with great success.

Development of a better finger joint prosthesis optimised for Asian joint size by the Division of Hand and Foot Surgery has heralded a new era for finger joint replacement. Likewise, the Division of Joint Replacement has leveraged its knee joint replacement expertise to manage a multi-centre clinical study on rotating-platform total knee prostheses in Asian

patients, again taking into account particular physiological idiosyncrasies of the Asian skeleton. Spreading its knowledge and expertise beyond Hong Kong's borders, the division is also one of the leading centres in educating mainland Chinese orthopaedic surgeons about joint replacements.

Current and future medical trends are closely reflected by each division's areas of expertise and study, which have evolved enormously in the last five decades. Research focus of the Division of Paediatric Orthopaedics has shifted to embrace current societal needs, transitioning from the department's early work on poliomyelitis to debilitating neuromuscular diseases such as cerebral palsy. The division now serves as a tertiary referral centre for patients with neuromuscular disorders, and has made significant inroads into deformity correction and regenerative medicine to treat these conditions.

Services provided by the Division of Orthopaedic Rehabilitation reflect the present demand for holistic medicine. Rehabilitation services ensure treatment of patients does not end with completion of surgical procedures.

Spinal knowledge has also evolved significantly from the "Hong Kong Operation" of the 1960s and the halopelvic devices of the 1970s, and the Division of Spine Surgery is helping to advance knowledge of the spine with its pioneering research on allogeneic intervertebral disc transplantation. Its collaborative project with the Navy General Hospital in Beijing has demonstrated definitively that disc transplantation is possible in humans, charting an entirely new area of research in intervertebral disc degenerative disease.

The department's divisions have also been lauded for improvements in patient care. The Division of Sports and Arthroscopic Surgery is heavily involved in improving graft incorporation in anterior cruciate ligament surgeries, to the benefit of Hong Kong's amateur and professional athletes. As the region's elderly population increases, the Division of Orthopaedic Trauma is responding to a subsequent upsurge in fragility fractures. With proficiency in correcting these problems, the division has devised a holistic treatment pathway while working to enhance the stability of fracture fixation for such patients.

A New Millennium

Not only departmental organisation has adapted to our modern era. Overall basic science research focus has also diversified considerably. At the start of the new millennium, orthopaedic studies mostly emphasised cellular and molecular research; focusing in particular on genetics factors in the development of low back pain, and use of stem cell research to delay degenerative changes in the spine. Furthermore, by the mid-2000s, with the availability of advancing technologies, the department's research expanded to include studies of bio-nanotechnology and nano-surface coatings for orthopaedic implants to combat infections.

Publication output in peer-reviewed journals has steadily grown – and with it, regional and international prominence. As research output increased, so too did the amount of competitive funding granted to the department's research projects. In 2004, the Research Grants Council awarded the department HK$50 million to pursue its study of degenerative disc diseases, the largest single grant ever allocated to the department. Additional funding of HK$30 million followed in 2010. In addition to this unprecedented funding, the department has also received various local and international grants – recognition that its research has far-reaching clinical implications.

As the department's research continues to mature, further collaborative opportunities with the Faculty of Engineering and Department of Biochemistry within HKU, as well as the Department of Materials Science at City University of Hong Kong, have created ventures into novel areas. Underlining the department's role in global orthopaedics research are partnerships with Johns Hopkins University's Department of Orthopaedics, The University of Chicago and Columbia University's School of Biomedical Engineering.

The Department of Orthopaedics and Traumatology's achievements of the last five decades have confirmed its position at the forefront of medical research. Building upon the tradition of excellence, and maintaining the steady pace of progress set by Professor Hodgson and his associates, the department continues to expertly navigate the changing landscape of patient care, working with ever-evolving technology to better serve Hong Kong and contribute to orthopaedic knowledge.

There is no doubt that the next five decades will bring about more exciting innovations from the department's researchers, and each division will continue serving as leaders in orthopaedics research and healthcare.

Looking Ahead

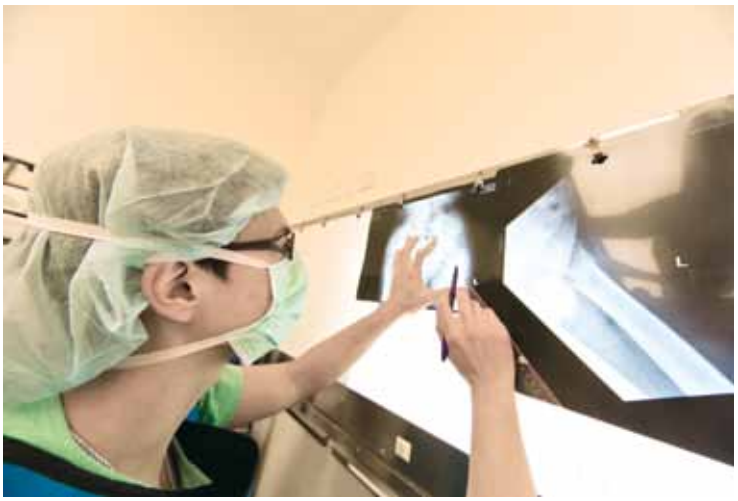
In reviewing the history of the past 50 years, it is clear that the department has adapted to the needs of the local and international communities, and has evolved from a unit that built its name on the treatment of spinal tuberculosis, crippling diseases such as poliomyelitis and industrial hand injuries, to a fully-fledged department taking on challenges of a more basic nature with the building of a biomechanics research laboratory. More recently, we were the first orthopaedics department in Hong Kong to develop subspecialisation, as well as multidisciplinary research programs in materials science, biomedical engineering and regenerative medicine.

Our current and past leaders have had the foresight to lay a solid foundation that allows individual creativity to thrive, team spirit to develop, and divisional activities to grow. They have provided the solid basis for the department to transcend the past, and create its own future.

Looking ahead, serving the needs of the local community will still be one of the main goals of the subspecialty divisions; they will be backed by a strong team of engineers, scientists and biologists, creating novel solutions to tackle difficult clinical problems.

As a university department, the education of undergraduates and postgraduates is of prime importance. Seeing the burden of musculoskeletal problems in our community, we have advocated for increasing the proportion of musculoskeletal teaching in the medical curriculum, so that future generations of doctors are well trained to tackle such problems regardless of whether they are in general or specialist practice. Postgraduate teaching of both doctors and researchers will continue, with organisation of training courses and workshops, as well as on-the-job experiences for resident trainees. With our success in major research funding initiatives, and the consequential increase in the size of the department, the demand for local, regional and international training will continue to grow. We already have a number of fellowship programs for overseas doctors and researchers, and this number is predicted to increase over the years. As the research laboratories mature and ideas come to fruition, innovations that benefit patients will abound.

The Future...



In the past decade, with closer integration of Hong Kong and Mainland China, our department has played an increasing role in the development of orthopaedics and training of surgeons on the mainland, as well as partnering with centres of excellence for both education and research. Initiatives, such as collaborations with postgraduate self-funded programs, research partnerships and application to National Science Foundation grants have begun and will be strengthened. Moreover, with the opening of the HKU-Shenzhen Hospital in Binhai in 2012, and the identification of spinal deformities as one of the five areas of excellence to be developed in this hospital, we see many additional opportunities both for education and research. In the future, the large volumes of patients in this hospital will facilitate teaching of under- and postgraduates, as well as the conduction of world-class clinical trials to address issues of regional and global importance.

Of course, any department is only as good as the people within it. All members of the department must work together as a team, and each individual has an important role to play to ensure success of the whole. We recognise the importance of retaining talent and nurturing our future generations of doctors and leaders. Recent human resource initiatives, such as succession planning and mentoring programs, will ensure that the vision and mission of the department be maintained into the distant future.

Thus we aim to remain as one of the premier orthopaedic departments in Asia and leaders in the world. Of course, such endeavours will require a strong financial backbone. We have already instigated a number of initiatives to help raise funds through granting agencies as well as through generous donations from the community. We appreciate that our future is in our own hands, and will work hand-in-hand with our colleagues, and local and international communities in creating the future.

Interviews

1961-2011

Department of Orthopaedics & Traumatology

Professor SP Chow
Professor David Fang
Dr. Louis CS Hsu
Professor John CY Leong
Professor Keith DK Luk

Professor SP Chow

The Timely Development of a Previously Neglected Field

In the early days of the department's development, hand surgery was not the most popular of orthopaedic fields. Because of an unprecedented upsurge of hand injury cases in Hong Kong, Professor SP Chow decided to specialise in this neglected field. Consequently, the department's reputation for treating difficult cases grew. Today, Hong Kong is considered one of the leading centres of microvascular surgery, spurred on by those initial developments.

Q: What was orthopaedic training in the department like in the 1970s?

There were two teams within the department. Team A was headed by Dr. Arthur Yau and Team B by Professor Hodgson. Not only did members of the department have to regularly visit Tung Wah Eastern Hospital, Tung Wah Hospital, Grantham Hospital and Queen Mary Hospital, we also had to serve Lai Chi Kok Hospital, an infectious disease centre, to treat patients with tuberculosis and leprosy.

As the department's reputation grew, due to its pioneering work with tuberculosis-related orthopaedic ailments, so too did the numbers of visiting scholars. Prof. Hoaglund, who was visiting from the United States, was particularly friendly; whenever I encountered an interesting case, he would dig up related papers for me to read. I started to learn about the principles underlying orthopaedics, the art and beauty of the subject, and I began to find orthopaedics fascinating. However, I initially did not have much interest in hand surgery.

Q: What was your impetus to pursue hand surgery? How did your hand surgery training begin?

I had decided during my years as a medical student that my career would not be dictated by earning potential or even personal interest, but rather to fulfill the needs of society. At that time, most surgeons wanted to sub-specialise in spine surgery and joint replacement surgery. However, in the 1960s and 70s many Hong Kongers worked as manual labourers and as a result, there were a significant amount of hand injury cases admitted. These cases were often left neglected since hand surgery was rather underdeveloped. It was in such circumstances that I decided to further develop my career in the field of hand surgery to address the problem. I then went overseas for one year to the US and the UK for training in hand surgery and general orthopaedics. I was very fortunate to be taught by some of the most famous

hand surgeons in the world. Not only was I able to develop my surgical skills, I was also exposed to various new advancements in hand surgery, including microsurgery, replantation surgery, nerve repair, rheumatoid hand reconstruction, and treatment of congenital hand anomalies.

Q: How did the department's hand service come to be established?

When I came back to Hong Kong, I was put in charge of all the hand cases. I achieved success in a short amount of time, having performed my first major hand replantation within one month of coming back. Hong Kong was actually quite technologically advanced compared to other hospitals in Asia, and the department's proficiency in hand surgery techniques began to mature. Our department quickly gained regional recognition as a centre for hand surgery, and it seems its reputation has only continued to grow.

Professor David Fang

The Modernisation of Postgraduate Orthopaedic Training

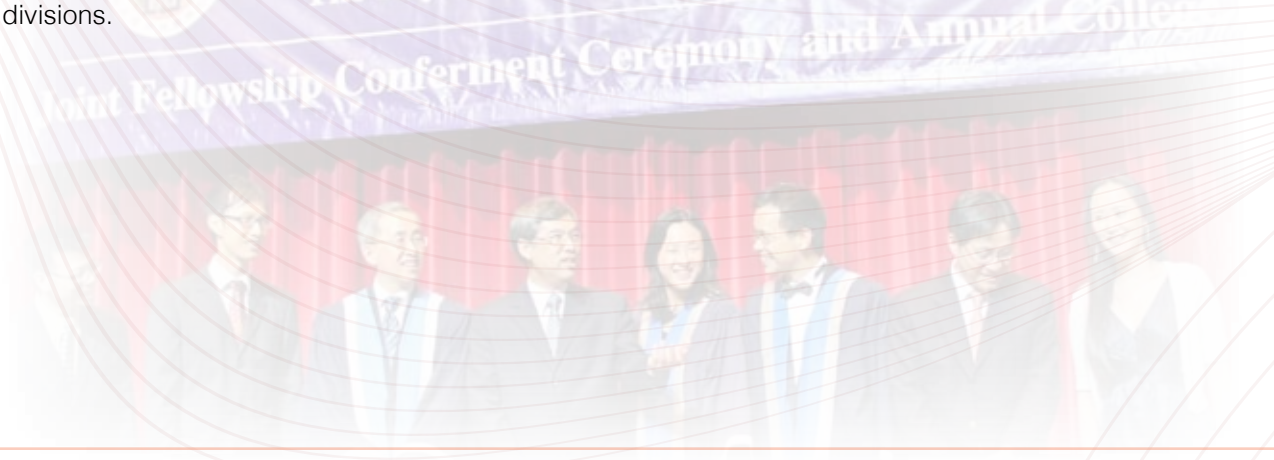
The Department of Orthopaedics and Traumatology was one of the first large training centers for orthopaedic surgeons in Hong Kong, but its excellent reputation for education did not spontaneously arise overnight. In the late 1980s, recognising that the orthopaedic training regimen in Hong Kong was still lagging behind that of other countries, Prof. David Fang, together with a group of Hong Kong Orthopaedic Association (HKOA) members, embarked on an ambitious programme to standardise the training of specialists, enlisting the department as a pilot test site.

Q: Can you share with us your research and surgery experiences prior to becoming an orthopaedic education reformer?

I was fortunate to be involved in many different projects over the course of my career. For instance, I was the first to introduce a fiber-optic knee arthroscopy workshop in Hong Kong in 1985, although the department had used the Watanabe tungsten light bulb as early as the late sixties. I also designed an Asian Total Hip system after detailed CT osteometry studies.

The upper cervical spine interested me immensely, and I wrote my Master of Orthopaedic Surgery thesis on it. I also published results of a study on tuberculosis and the upper cervical spine. However, one of my greatest regrets is not publishing results of all the research work I had accomplished over the course of my career. In fact, much of it still sits untouched in my bedroom drawer!

I was also an honorary consultant in Grantham Hospital. We had the ground floor for our joint replacement service, fitting in quite well with geriatric hip surgeries. I later became the head of the department's Team B, which focused on joint replacement, sports and tumour surgery, a predecessor of the sub-specialty divisions.



Q: What was specialist training like in Hong Kong before the formation of the Hong Kong Academy of Medicine?

Originally, Hong Kong followed the Royal College of Surgeons system. We took general surgery exams. There were few chances to actually encounter orthopaedic cases. You would become a specialist after 4 years, but without undergoing good specialist training. Therefore we urgently needed to develop a concrete and independent training regimen, separating general and orthopaedic surgery training, as well as the infrastructure to support it.

Q: How did orthopaedic training in Hong Kong gradually mature?

Although the Royal Australasian College of Surgery administered their first specialist fellowship examination in 1985, and continued to do so from 1988 to 1991, inherent problems still remained with Hong Kong's specialist training programme. The formation of an orthopaedics college separate from the general surgery discipline was needed. With the support of HKOA members, I drew up the constitution for the Hong Kong College of Orthopedic Surgeons in my capacity as President. On April 30th 1987, a general HKOA meeting was held, approving the formation of the College.

Despite the association's approval, HKCOS remained a contentious subject in the medical community for the next few years. Even though the Hong Kong government's advisory committee had recommended constructing a Hong Kong Academy of Medicine (HKAM), the original plan called for orthopaedics to be relegated to a faculty, and not a college. However, Prof. John Leong, Sir Harry Fang and I lobbied exhaustively as members of the HKAM Preparatory Committee for our specialty to be upgraded. In 1990, orthopaedics was officially upgraded to college status.

In 1995, the necessary funds were finally raised to construct the HKAM building in Wong Chuk Hang. The project was completed in 1998. That was where I eventually spent most of my time as a teacher, putting into action the curriculum and plans I had helped put into motion a decade prior.

Dr. Louis CS Hsu

Duchess of Kent Children's Hospital – from Convalescent Home to Internationally Renowned Hospital

In 1955, the Society for the Relief of Disabled Children founded the Convalescent Home for Crippled Children to provide rehabilitation facilities to children suffering from musculoskeletal problems. By the late 1950s and 1960s, the hospital quickly gained traction as a center of pioneering spine and pediatric orthopaedic research. Dr. Louis Hsu not only witnessed those decades of immense growth but was also greatly involved in the exciting surgical breakthroughs of the era.

Q: In the early days of its inception, what purpose did the Duchess of Kent Children's Hospital serve?

At that time, the only treatment for patients with tuberculosis of the spine was bed rest. Prof. Hodgson had to find a place for such patients, and the Sandy Bay Children's Hospital was established as a convalescent home. In the early 1960s, there was a polio epidemic in Hong Kong, and the hospital then expanded to accommodate those patients as well. Physiotherapy was emphasised with the subsequent installment of hydrotherapy pools. It then evolved gradually to become a full hospital when I graduated in 1968.

The development of the Duchess of Kent Children's Hospital was very much supported by Dr. John O'Brien, who later became the head of the hospital. Dr. O'Brien was responsible for all of the halo-pelvic tractions along with Prof. Hodgson and Arthur Yau, while I performed distractions for the halo-pelvic tractions. This procedure created much international interest, and increased the hospital's renown.

Q: How did the Society for the Relief of Disabled Children become involved with the hospital?

The society was established in 1954. Prof. Hodgson promptly approached the chairperson in search of funding to build a convalescent home for his tuberculous patients. Funds were raised and the Sandy Bay Children's Hospital was established. Throughout these years, the society has continuously raised money for the hospital, and even now they still raise funds for various hospital-related purposes. For example they now sponsor children from Mainland China to come to Hong Kong for surgery.

Q: The Duchess of Kent Children's Hospital is known for its popular fellowship programme. How did the programme come to be established?

As the hospital's reputation for pioneering surgical treatments grew, so too did the numbers of overseas orthopaedic surgeons who wanted to come and learn spine surgery techniques from us. Some actually wished to become lecturers at the University of Hong Kong but there were very few lecturer posts available. However, not many local medical graduates chose to work in Sandy Bay, so we hired those doctors from abroad. Even so, the waiting list was so full that applicants were applying five years ahead of time!

Professor John CY Leong

The Importance of Basic Scientific Research

When the Department of Orthopaedics and Traumatology was first founded, most research conducted involved clinical studies. Although there were some initial attempts to increase basic scientific research output, it was Prof. John Leong who realised that in order for the department to continue progressing, a core group of basic scientific researchers must be recruited. Through his encouragement and efforts, the department began to place greater emphasis on the importance of basic scientific research, individually and in supporting the work of clinicians.

Q: Was there any basic scientific research performed by the department in the 1960s and 1970s?

The department's earliest basic science research efforts can be traced back to the halo-pelvic apparatus, incorporating electronic strain gauges to measure forces generated during correction of severe spinal deformities by distraction. These research methods were later applied to leg lengthening. However, these undertakings relied on collaborations with other departments. For instance, the halo-pelvic apparatus was created in conjunction with Dr. Joe Clark from the Department of Mechanical Engineering. Even my own early research on iliolumbar ligaments and leg lengthening was performed with help from other departments.

Q: Why was it necessary for the department to increase resource allocation on basic scientific research?

Collaborating with other departments came with a serious disadvantage. The collaborators usually supervised their undergraduate students to perform the required experiments. When those students graduated, their projects may not yet have been completed. Finding new students to assist those projects considerably delayed our research. Although we did manage to publish some basic science papers during that period, I appreciated that a core group of researchers to see projects to their completion was necessary. Moreover, we clinicians may know a lot about patients and the human body, but many of us

may lack basic scientific knowledge, and are not trained in research methodology. Not only did we need to increase the pace of basic scientific research, we also needed basic scientists to aid existing clinical work.

Q: Who were the first people involved in this endeavour, and how did changes come about?

In 1986, I appealed to Daniel Chow, who became the first Masters of Philosophy candidate in our department. Dr. (now Professor) Keith Luk and Dr. C.W. Woo of the Department of Mechanical Engineering and I jointly supervised his project on iliolumbar ligaments, and he was able to graduate within the minimal period. I then arranged for him to go to Strathclyde University in Scotland for his PhD, where he performed cadaveric studies on simulated spinal fusion. He is now a professor at Hong Kong Polytechnic University.

We recruited Dr. (now Professor) William Lu in 1995, whose presence and efforts vastly increased our basic scientific research output. I have since watched the basic science arm of the department grow in leaps and bounds. Today, dozens of doctoral and master's degree students are working in the Research Centre, due to these developments.

Professor Keith DK Luk

The Evolution of the Department – Subspecialisation, Succession Planning and the Orthopaedic Foundation

The Department of Orthopaedics and Traumatology has undergone several reforms and configurations over the past five decades. Today's eight sub-division arrangement is the result of extensive restructuring in 2005. Prof. Keith Luk recognised early on that sub-specialisation is the only way that would allow colleagues to hone skills and develop interests, as well as greatly enhance the services provided to patients. Furthermore, he has been a staunch advocate of concrete succession plans for the department, as well as the development of the Orthopaedic Foundation. Both plans have been set into motion, ensuring that the department will continue to flourish as a leader in orthopaedics.

Q: What motivated the instigation of a department-wide restructure?

As a university hospital, we are responsible for teaching students, providing patient services, and conducting research within our hospital walls, therefore it is imperative for our department to take a lead role in driving orthopaedic knowledge forward. In recent years, orthopaedic research has developed to encompass musculoskeletal biomechanics, genetics, and biomaterials. However, one cannot expect a general orthopaedic surgeon to be equally conversant in all of those topics. For our department to truly progress and excel in every sub-specialty, we had to re-allocate resources and staff to form sub-specialist divisions. I found the perfect opportunity to advocate for and lead this change when I became the new chief of service in late 2003.

Q: As an early adopter of sub-specialisation, what struck you as the advantages of organising the department into divisions?

With these reform efforts, we re-organised the original three teams into seven, now eight, sub-specialty divisions. Doing so ensured that staff numbers would grow instead of remaining stagnant. Having clear sub-specialties also has the effect of attracting new talent interested in those disciplines. We were not trying to compartmentalise patient care, but were aiming instead to give each division a clear framework, yet still providing them with the freedom and autonomy to strive for excellence, and to encourage them to

take the lead in research and innovation in their fields. Members of our department have also benefited from these changes, as they could focus on their professional development in a targeted manner.

Q: Was there anything from the old department organisation that remains in the new arrangement?

One important element of our department's previous infrastructure was the General Division, and I was adamant about maintaining it. Not only is general orthopaedic surgery the bread and butter of our surgical services, the division still plays an incredibly important role in coordinating the holistic care of patients. Trainees also receive essential core training thanks to this group, providing a firm foundation on which they can build their specialty training. This basic training paves the road for trainees to develop their careers and interests by exposing them to all aspects of orthopaedics. The results of this are well-rounded orthopaedic surgeons.

Q: What do you see as potential downsides of sub-specialisation, and how do you envision overcoming them?

On an individual level, one potential difficulty is the threat of over-specialisation. One could easily lose sight of certain orthopaedic basics when striving to be the best in one's sub-specialty. Proficiency in these basic skills results in better clinicians and researchers. I also believe that members of this department should always be aware of developments in other sub-specialties. Incorporating knowledge from other areas can help enhance research and knowledge in one's chosen sub-specialty.

By creating divisions, there is a risk of fragmentation within the department. Our department has always been a very cohesive group, and there has been much effort expended into ensuring members are provided with opportunities to learn from each other. The department must continue to nurture colleague interaction, whether it be clinicians with research staff, or members of different divisions, to create synergistic bonds that facilitate innovation.

Sub-specialisation was an inevitable change, part of the evolution of orthopaedics as a whole. The orthopaedic community in Hong Kong was actually late to adapt this system, as compared to other international orthopaedic organisations. Our city is an affluent one, and patients expect the very best services the department can provide. By adopting sub-specialisation, the department is now held to higher standards that we must strive to maintain, and perhaps, exceed.

Professor Keith DK Luk

Q: What trends do you foresee for the future of the department?

Good succession planning is imperative for the department's overall progress, particularly as the sub-specialty system is in place. Leaders in the department, myself included, must plan for the careers of the next generation. We must also ensure that unhealthy competitions do not disrupt the growth of the department. Smooth transitions should be guaranteed if colleagues retire or leave for private practice. With proper planning, the loss of one individual should not cause the supervision and support between senior colleagues and trainees to collapse. However, comprehensive succession planning will take time.

The Orthopaedic Foundation has also been formally established to enable long-term, sustained financial support for the department. This fund, largely supported by donations, will provide a stable financial platform to aid future teaching endeavours, as well as help develop the department's research and service provision. With these measures in place, the department will thrive in the next five decades to come.

Present Set Up

1961-2011

Department of Orthopaedics &
Traumatology

Present Set Up

Mission

Our goal is to provide undergraduate and postgraduate training to an international standard, offer a first-class orthopaedic service to the community, enhance basic and clinical research, foster strong links with reputable regional and international orthopaedic centres, and maintain the international character of the department.

Staff

There are 40 medical staff divided into those employed by the University and those employed by the Hospital Authority (HA). Among University medical staff are one Chair Professors, two Professors, two Associate Professors (Consultant level) and three Assistant Professor (Senior Medical Officer / Associate Consultant level). Among HA medical staff are five Consultants, six Associate Consultants (Senior Medical Officers), and 21 Medical Officers (Medical Officer Specialists, Resident Specialists, and Residents). In addition, there are overseas and mainland fellows (working in the divisions of hand and foot surgery, joint replacement surgery, paediatric orthopaedics, spine surgery, and orthopaedic trauma), and six interns.

The Orthopaedic Research Centre has one Director at Professor level, together with two Assistant Professors, two Research Assistant Professors, four Post-doctoral Fellows and more than thirty postgraduate students, plus research support staff.

Queen Mary Hospital

The Duchess of Kent Children's Hospital

Structure

The department has access to about 400 beds in four hospitals: 132 beds in Queen Mary Hospital (QMH); 62 beds in The Duchess of Kent Children's Hospital (DKCH); 80 rehabilitation beds in Fung Yiu King Hospital (FYKH) and 110 rehabilitation beds in the MacLehose Medical Rehabilitation Centre (MMRC).

Queen Mary Hospital is one of the largest hospitals on Hong Kong Island with over 1000 beds, an Accident and Emergency Department, and all major medical and surgical specialties represented, including treatment of the entire range of musculoskeletal problems. It is a tertiary and quaternary referral centre for a number of

conditions, including musculoskeletal tumours and spinal deformities. It also serves as the main teaching hospital of the University of Hong Kong Li Ka Shing Faculty of Medicine. Queen Mary Hospital has just celebrated its 70th Anniversary together with 120th Anniversary of the Faculty of Medicine in 2007.

The Duchess of Kent Children's Hospital is internationally recognized for its treatment of paediatric orthopaedic problems and spinal deformities. To date, it remains the only paediatric hospital in Hong Kong. It is equipped with gait laboratory for management of patients with neuromuscular diseases. It also has an excellent medical record system.

It was one of the first hospitals in Hong Kong to adopt a digital radiography system to facilitate the permanent storage and ease of retrieval of images. It has celebrated its 50th Anniversary in 2005.

MacLehose Medical Rehabilitation Centre

Fung Yiu King Hospital

Fung Yiu King Hospital and MacLehose Medical Rehabilitation Centre are for patients requiring longer-term rehabilitation after initial treatment in Queen Mary Hospital. Both have day and in-patient facilities that cater for patients with different rehabilitation requirements. The elderly patients are co-managed by geriatricians and orthopaedic surgeons to help improve the comorbidities after the operations.

Clinical Services

The department is organized into eight divisions since 2009. Each division is headed by a division chief with autonomy in organizing its service, teaching and research.

Present Set Up

Head of Department and Chief of Service Prof. KDK Luk								
	General Orthopaedics & Oncology	**Hand & Foot Surgery**	**Joint Replacement Surgery**	**Paediatric Orthopaedics**	**Orthopaedic Rehabilitation**	**Spine Surgery**	**Sports & Arthroscopic Surgery**	**Orthopaedic Trauma**
Chief	TP Ng (Cons.)	WY Ip (Asso. Prof.)	Prof. PKY Chiu	W Chow (Cons.)	HY Kwok (Asso. Cons.)	Prof. KDK Luk	WP Yau (Asst. Prof.)	F Leung (Asso. Prof.)
Deputy Chief	WY Ho (Asso. Cons.)		FY Ng (Specialist)			Prof. KMC Cheung		TW Lau (Asso. Cons.)
Core Members	YL Lam (Cons.) CF Chan (Asso. Cons.)	B Fung (Cons.) KH Ng (Asso. Cons.)	CH Yan (Asst. Prof.)	M To (Asst. Prof.)	HB Leung (Specialist)	YW Wong (Cons.) WY Cheung (Asso. Cons.) KC Mak (Specialist)	A Fok (Specialist)	
	Specialists							
	L Chan C Fang M Fok E Kuong K Kwan KH Leung							
	Residents							
	A Cheung J Cheung H Fu P Koljonen R Lee A Leung T Pun S Wan R Yau							

Orthopaedic Research Centre				
Prof. W Lu (Chairman)	Y Hu (Asst. Prof.)	D Samartzis (R. Asst. Prof.)	V Leung (Post-Doc Fellow)	V Tam (Post-Doc Fellow)
	K Yeung (Asst. Prof.)	H Pan (Post-Doc Fellow)	ZY Li (Post-Doc Fellow)	P Wen (Post-Doc Fellow)

Asst. Prof. - Assistant Professor
Asso. Cons. - Associate Consultant

Asso. Prof. - Associate Professor
Cons. - Consultant

R. Asst. Prof. - Research Assistant Professor

Departmental photo - June 2011

Divisions

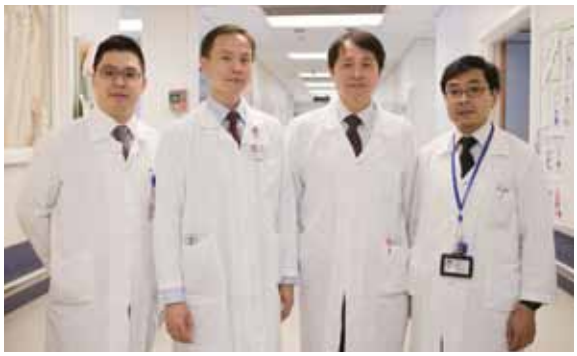
1961-2011

Department of Orthopaedics & Traumatology

Division of General Orthopaedics and Oncology
Division of Hand and Foot Surgery
Division of Joint Replacement Surgery
Division of Paediatric Orthopaedics
Division of Orthopaedic Rehabilitation
Division of Spine Surgery
Division of Sports and Arthroscopic Surgery
Division of Orthopaedic Trauma

Division of General Orthopaedics and Oncology

Division Chief : **Dr. Tze Pui NG (Consultant)**
Deputy Chief : **Dr. Kenneth HO (Associate Consultant)**
Core Members : **Dr. Ying Lee LAM (Consultant)**
Dr. Chi Fat CHAN (Associate Consultant)



Introduction

The General Division is the youngest division in the department. It was formally established on the 1st of January 2005 as part of the departmental infrastructure reform from three teams to seven sub-specialty divisions. Not only is the division new in our department, the concept of a General Division is wholly novel to other orthopaedics departments in Hong Kong.

The division provides primary orthopaedic care and triage of complicated orthopaedics problems to other sub-specialties, and is responsible for front-line screening of orthopaedic emergency admissions as well as most inter-departmental consultations in our cluster.

Peri-operative meeting

Grand round

We manage patients with general orthopaedics problems such as geriatric hip fracture, bone and joint degeneration, infection and tumour. These are patient groups who create the highest demand on public health services in our cluster. With Hong Kong's population aging, we expect increasing demand in general orthopaedic care.

The division works intimately with other divisions of the department. We participate in various meetings and operative sessions hosted by different divisions, and attend common general out-patient clinics. Our division also plays a resources-coordinating role in the manpower and operative sessions of the department. Through these cooperative efforts, we aim for efficient utilization of all available operative theatre sessions.

The division encompasses 5 to 6 trainers and an equal number of trainees. Most of the trainees in the division are rotation trainees from orthopaedics, surgical, radiology and family medicine with only basic orthopaedic exposure and experience. To ensure adequate supervision and quality

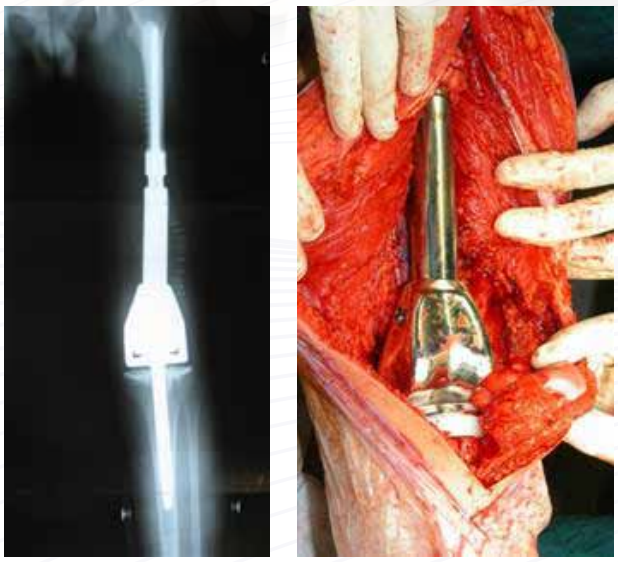
patient care, we have adopted the principle that "specialists lead the service" in all clinical duties such as ward rounds, inter-departmental consultations and operative sessions. We have successfully introduced a mentoring system in out-patient clinics. Specialists take turns to act as designated mentors to help juniors solve clinical problems. Not only does this system provide supervision and education to junior doctors, it also improves the efficiency of the clinics.

To provide orthopaedic training for rotating trainees is another important role the division plays. We have organized multiple training activities for our juniors. These include a series of regular structural teaching seminars for our rotating house officers and medical officers. We focus on common orthopaedic problems and practical orthopaedic patient management pitfalls. In the weekly "peri-operative meeting", all the cases operated on in the past week and the cases pending operation in the coming week will be discussed. Members can share their experiences and learn from each other, ensuring adequate pre-operative preparation. The General Division also collaborates closely with the Department of Radiology and Pathology to organize the "musculoskeletal rounds". Patients with diagnostic challenges or interesting radiological or pathological findings are discussed.

Orthopaedic Oncology Development

Since 2000, Queen Mary Hospital has been endorsed as one of the three quaternary referral centres for musculoskeletal tumours in Hong Kong. After departmental reform in 2005, the oncology service has been incorporated into the Division of General Orthopaedics and Oncology. We provide care for orthopaedic oncology patients referred from other HA hospitals and doctors in private practice. A multidisciplinary team approach is essential in the management of musculoskeletal tumours and we have established a well-coordinated team including clinical oncologists, paediatric oncologists, orthopaedic surgeons, radiologists and pathologists.

Our oncology specialist screens all referrals within the immediate week. Staging and work up investigations, including haematological tests, CT scans, MRI, bone scans and PET-CT scans are initiated according to a specifically designed protocol. Necessary biopsies are performed by the same dedicated team that is to perform the definitive tumour surgery. The overall treatment plan is designed after assessment by the multidisciplinary team and detailed discussion with the patient and relatives. Different categories of surgery are performed depending on the underlying disease,



Growing prosthesis

ranging from simple excisions, excisions with chemical and thermal adjuvant treatment, wide resections with complex reconstruction to amputations. With advancement in technology and surgical skills, we are capable to perform limb-sparing resection with similar oncological outcome as compared with amputation. Large bone defects are usually reconstructed with tumour prostheses. In selected cases, various bone and soft tissue allografts are used.

Most of the primary bone malignant tumours in adolescents are found close to the growth plate. One of the surgical challenges is the anticipated leg length discrepancy resulting from the sacrifice of growth plates during tumour resection. We have successfully implanted “growing prostheses” in paediatric tumour patients. Through minor surgical procedures, the prosthesis can be lengthened and this can equalize the leg lengths of the patient during growth.

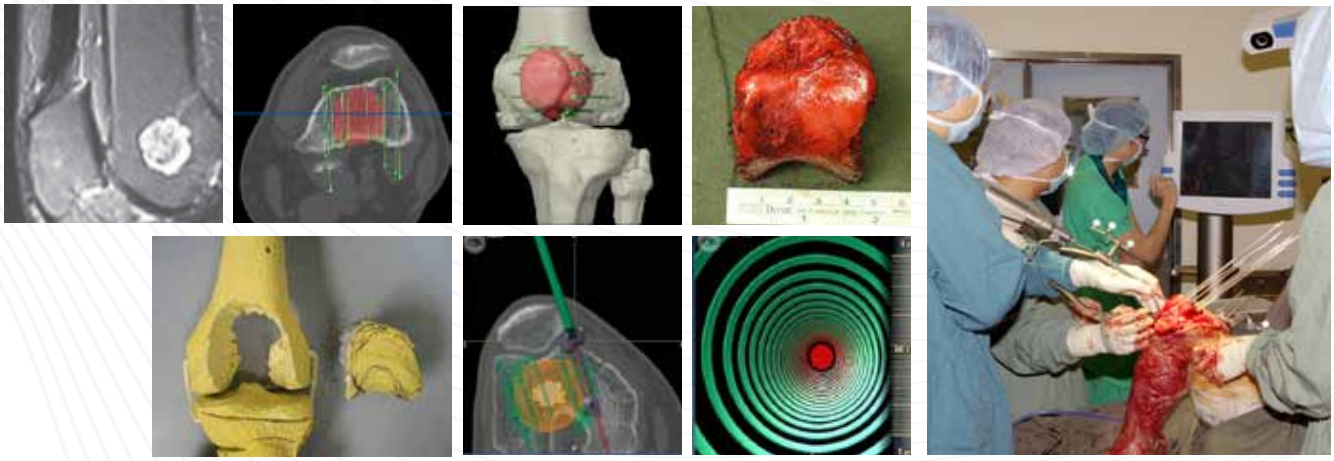
Other Developments

1. Computer Navigation Surgery

The advancing technology of computer navigation has been applied to assist multiple orthopaedic operations such as trauma, joint replacement and spine surgery. We have successfully applied the technology in orthopaedic oncology surgery.

Computer navigated tumour resection

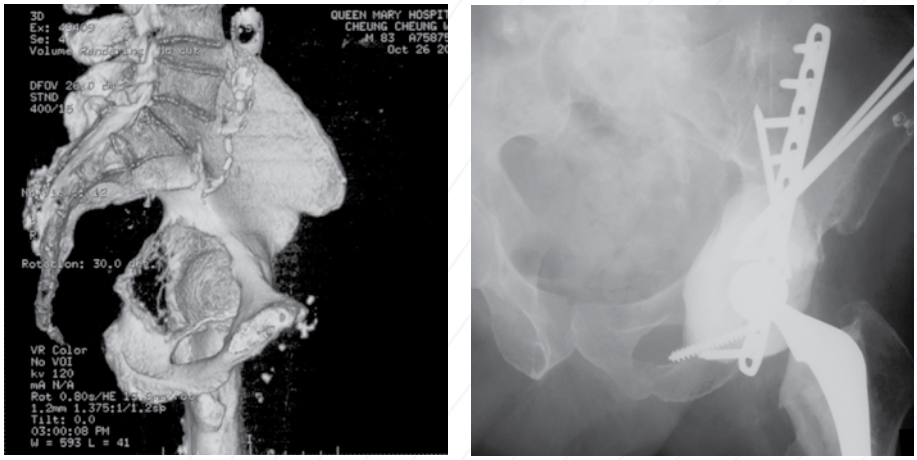
With careful pre-operative navigation planning and intra-operative navigated precise bone cuts, we can perform the most conservative resection with adequate tumour margins and preserve the limb function.



Navigated tumour resection

Computer navigated acetabular reconstruction in metastasis

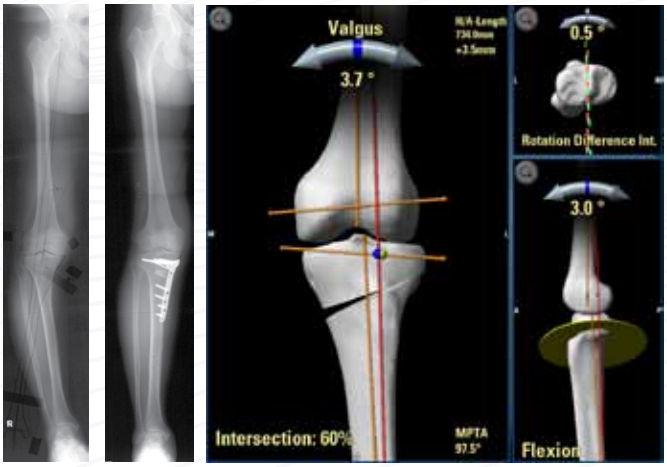
Massive acetabular metastasis can be reconstructed by fixing the acetabular component over a framework of threaded pins inserted through remaining intact pelvic bone. The difficulty is the positioning of the threaded pins in the pelvis with complex anatomy. With computer navigation, pins can be inserted accurately in the desired position.



Navigated tumour resection

Computer navigated high tibial osteotomy

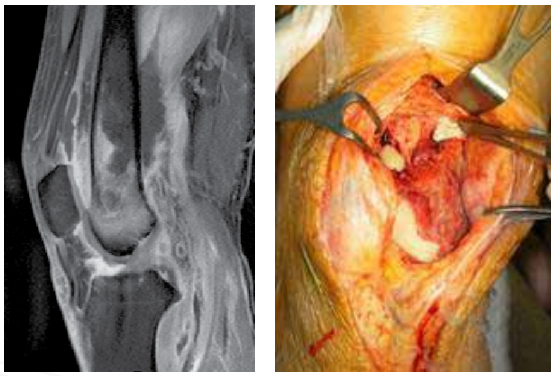
Accurate lower limb alignment is critical for good outcome after high tibial osteotomy. This can be achieved with the application of computer navigation. The surgeon can monitor the multi-planer correction at the same time. This includes the usual coronal plane correction for varus deformity and also sagittal plane correction for fixed flexion contracture. A new locking plate system is used to provide rigid fixation of the osteotomy and eliminate post-operative plaster immobilization. Patient can perform early mobilization exercise and prevent knee stiffness. We have extended this technique to distal femoral osteotomies.



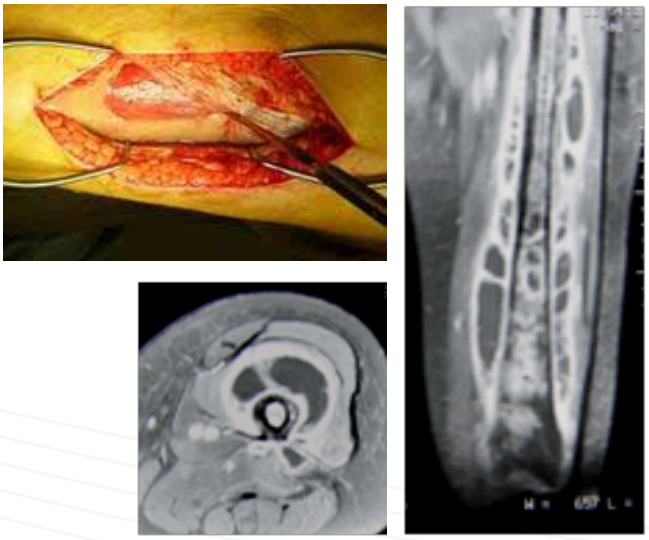
Navigated high tibial osteotomy

2. Musculoskeletal Infection

Our division has "sub-specialized" in the management of different forms of musculoskeletal infections. These range from acute life-threatening necrotizing fasciitis to chronic osteomyelitis. The demand on our cluster has been increasing in the past years. This can be related to the increasing number of immuno-compromised hosts after malignancies or organ transplantations in our hospital. Throughout the past years of development we have accumulated experience in the diagnosis and management of such cases. This includes a high index of suspicion, appropriate use of investigation and prompt surgical action. We have also built up good relationships with microbiologists and radiologists, which is essential for successful infection management.



Brodie's abscess



Femoral osteomyelitis

Necrotizing fasciitis

Division of Hand and Foot Surgery

Division Chief : Dr. Wing Yuk IP (Associate Professor)
Core Members : Dr. Boris FUNG (Consultant)
Dr. Ka Ho NG (Associate Consultant)

Introduction

This division specializes in hand surgery and foot and ankle surgery. The foot and ankle surgery service is a relatively young branch of the division, which was established in 1998.

Hand surgery has a long tradition in the Department of Orthopaedics and Traumatology dating back to the 1970s. It has an international reputation for its management of hand injuries, being the first in Hong Kong to perform a successful microsurgical thumb replantation in 1977. The division has prospectively collected the largest series of hand fractures in the world with over 2200 cases. New methods of hand fracture fixation are being developed and two of our own designs have been patented. With changing populations and evolving occupational demographics, there has been a decline in the number of severe hand injuries but an increase in degenerative hand problems, inflammatory joint diseases and patients with sequalae of paralytic disorders. Our division has targeted these areas for greater research and development, having designed and developed the first Hong Kong-made hand joint prosthesis , which is now undergoing clinical trials. The foot and ankle service is progressing and our division provides multi-disciplinary service to diabetic foot patients.

Grand Round

The division sees approximately 10,000 cases per year in its various out-patient clinics. Besides general clinics, which see cases from various routes of referral, most of the clinics are multidisciplinary clinics. The hand-combined clinics are held with attending physiotherapists and occupational therapists while the foot combined clinics are attended by podiatrists and prosthetists. These represent a 'one-stop service' for patient convenience and enhancement of knowledge exchange among various healthcare professionals. A congenital hand and upper limb clinic is held at the Duchess of Kent Children Hospital, where particular attention is placed on the management of cerebral palsy-related upper limb problems. Myoelectric upper limb and lower limb prostheses are provided to patients with special needs, e.g. professional runners. The

Hand Class - a one-stop centre

use of nerve prostheses to mobilize upper limbs in tetraplegic patients is an area of research that we are giving much scrutiny.

Clinical service inspires basic research in the division. It creates a platform to convert basic research result to clinical application, or in other words, from bench to bed. The basic research elements of our own hand joint prosthesis design include material science, finite element analysis and biological interaction with materials. The final objective is to produce a device that has good application in patients. Tissue engineering is another area that is complementary to microsurgery. The use of various biomaterials for guided bone regeneration and guided nerve regeneration is being studied. Animal studies are on-going and early pilot clinical studies are yielding promising results.

Research

Excellence in research is a major goal of the division. Special areas of development include bone regeneration and nerve regeneration using a tissue engineering approach, arthroplasties for finger joints, and the use of growth factors for wound problems, especially in difficult areas like diabetic foot. Clinical areas of interest include inflammatory joint reconstruction, reconstruction for neuromuscular conditions, minimally invasive surgery in soft tissue, tendo-achillis rupture outcomes and management of tibialis posterior dysfunction.

Examples of Ongoing Studies

1. Hand fractures
2. Upper limb prostheses
3. Neuromuscular diseases
4. Rheumatoid hand reconstruction
5. Special infections in hand
6. Diabetic hand and foot problems
7. Bone and nerve regeneration
8. New biomaterials

Research Grants

A. Local

1. CRCG Grant, The University of Hong Kong (1999): Award of HK$90,000 for the project "Design and Production of New Implants for Hand and Wrist Problems"
2. Research Grant Council (2000): Award of HK$895,200 for the project "Development of novel artificial finger joints"
3. Technology Transfer Seed Fund, The University of Hong Kong (2003): Award of HK$420,000 for the project "Development of a Novel Artificial Finger Joints".
4. Seed Funding for Applied Research, The University of Hong Kong (2004): Award of HK$167,000 for the project of "Plate fixation development and biomechanical evaluation for Type C2 and C3 fractures of distal radius: A collaborative study with AO Mathys Medical Ltd. and Nanfang Hospital, Guangzhou, China".
5. CERG, Hong Kong Research Grants Council (2004-2005): Award of HK$939,968 for the project of "Novel prosthetic replacements for metacarpophalangeal (MCP) joints".
6. Seed Funding for Basic Research, The University of Hong Kong (2006): Award of HK$43,000 for "An animal model for vascularized nerve graft in complete spinal cord transaction".
7. Small Project Funding, The University of Hong Kong (2006): Award of HK$30,000 for the project of "Use of bio-corrodible alloys for tissue engineering".
8. Innovation and Technology Fund (2007): Award of HK$3,197,661 for the project of "Design and development of implantable artificial finger joints for biological repair".
9. Small Project Funding, The University of Hong Kong (2007): Award of HK$58,840 for the project of "Cross-disciplinary application of techniques in sports medicine to study of resorbable metallic implant.

B. Overseas

1. ASIF – Foundation Research Grant: Bone regeneration in long segmental defects greater than critical size in goat femur using microporous membrane and 3D sponges from new Triblock copolymer, amount of CHF 60,000.

   Date of Award: 11.6.2001

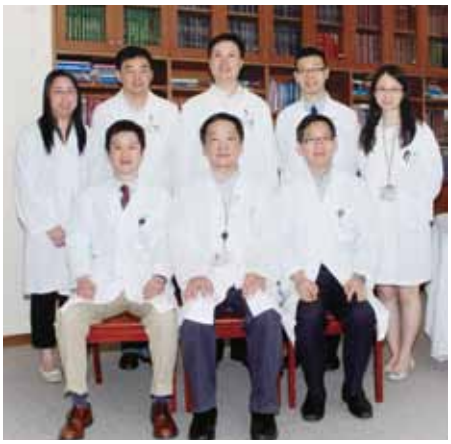
C. Key Representative Publications

- Mycobacterium marinum infection of the deep structures of the hand and wrist: 25 years of experience. Cheung JP, Fung BK, Ip WY. Hand Surg. 2010;15(3):211-6.
- Theoretical risk assessment of magnesium alloys as degradable biomedical implants. Yuen CK, Ip WY. Acta Biomater. 2010 May;6(5):1808-12.
- Mycobacterium chelonae hand infection: a review. Lee EY, Ip JW, Fung BK, Ted U E. Hand Surg. 2009;14(1):7-13.
- he versatile reverse flow sural artery neurocutaneous flap: a case series and review of literature. Ahmed SK, Fung BK, Ip WY, Fok M, Chow SP. J Orthop Surg Res. 2008 Apr 18;3:15.
- A novel artificial prosthetic replacement for the proximal interphalangeal joint of the hand--from concept to prototype. Chow SP, Lam KW, Gibson I, Ngan AH, Lu W, Ip WY, Chiu KY. Hand Surg. 2005;10(2-3):159-68.
- Effect of torsion on microvenous anastomotic patency in a rat model and early thrombolytic phenomenon. Bilgin SS, Topalan M, Ip WY, Chow SP. Microsurgery. 2003;23(4):381-6.
- Polylactide membranes and sponges in the treatment of segmental defects in rabbit radii. Ip WY. Injury. 2002 Aug;33 Suppl 2:B66-70.
- Adhesion formation after nerve repair: an experimental study of early protected mobilization in the rabbit. Ip WY, Shibata T, Tang FH, Mak AF, Chow SP. J Hand Surg Br. 2000 Dec;25(6):582-4.
- Biomechanical properties of thin skin flap after basic fibroblast growth factor (bFGF) administration. Lu WW, Ip WY, Jing WM, Holmes AD, Chow SP. Br J Plast Surg. 2000 Apr;53(3):225-9.
- Intramedullary fixation by resorbable rods in a comminuted phalangeal fracture model. A biomechanical study. Roure P, Ip WY, Lu W, Chow SP, Gogolewski S. J Hand Surg Br. 1999 Aug;24(4):476-81.
- Results of dynamic splintage following extensor tendon repair. Ip WY, Chow SP. J Hand Surg Br. 1997 Apr;22(2):283-7.
- External fixation for comminuted phalangeal fractures. A biomechanical cadaver study. Fitoussi F, Ip WY, Chow SP. J Hand Surg Br. 1996 Dec;21(6):760-4.
- A prospective study of 924 digital fractures of the hand. Ip WY, Ng KH, Chow SP. Injury. 1996 May;27(4):279-85.

- Hand function after digital amputation. Chow SP, Ng C. J Hand Surg Br. 1993 Feb;18(1):125-8.
- A comparison of arterial and venous flaps. Chow SP, Chen DZ, Gu YD. J Hand Surg Br. 1992 Jun;17(3):359-64.
- A splint for controlled active motion after flexor tendon repair. Design, mechanical testing, and preliminary clinical results. Chow SP, Stephens MM, Ngai WK, So YC, Pun WK, Chu M, Crosby C. J Hand Surg Am. 1990 Jul;15(4):645-51.
- Thenar crush injuries. Chow SP, So YC, Pun WK, Luk KD, Leong JC. J Bone Joint Surg Br. 1988 Jan;70(1):135-9.
- Experimental microarterial grafts: freeze-dried heterografts versus autografts. So YC, Chow SP. Br J Plast Surg. 1987 Mar;40(2):188-92.
- Mycobacterium marinum infection of the hand involving deep structures. Chow SP, Stroebel AB, Lau JH, Collins RJ. J Hand Surg Am. 1983 Sep;8(5 Pt 1):568-73.
- The significance of the retrograde patency test in microarterial anastomosis. Chow SP. Hand. 1982 Jun;14(2):153-8.

Division of Joint Replacement Surgery

Division Chief : Professor Peter CHIU
Deputy Chief : Dr. Fu Yuen NG (Specialist)
Core Member : Dr. Chun Hoi YAN (Assistant Professor)



Introduction

Joint replacement service started with the hip in the 1970s using Charnley cemented prosthesis, and then the porous-coated PCA and AML prostheses in the 1980s. In the early 1990s, a CT osteometric study performed by Dr. David Fang showed a significant difference in Asian upper femoral shape, compared with Caucasians, and this led to the development of our own porous coated prosthesis, the "Asian femoral stem". We were also the first in Hong Kong to start using the hydroxyapatite-coated prostheses in the early 1990s. Today we use cementless components for most patients on the acetabular side, whereas on the femoral side we use a cementless femoral component if the medullary canal is too narrow and incompatible with an adequate cement mantle. Otherwise, we insert a femoral component with modern cementing techniques - because of our finding that 85 percent of Charnley femoral components in Chinese patients younger than 40 show no loosening after an average follow-up of 15 years. The division was one of the first centres to use ceramic-ceramic articulation, highly cross-linked polyethylene and large diameter (36mm) hip balls in Hong Kong.

Prof. Chiu performing surgical demonstration in China

While osteoarthritis of the hip in Chinese is rare and accounts for less than 10% of our total hip replacements, osteoarthritis of the knee is very common and accounts for more than 80% of our total knee replacements. Knee joint replacement became common in the 1980s, using cruciate-retaining Porous Coated Anatomic (PCA) and posterior-stabilized Insall-Burstein (IB) and Anatomic Modular Knee (AMK) prostheses. From 1998 to 2002, we changed to the Low Contact Stress (LCS) rotating-platform prostheses. Due to our experience with the latter, we were invited to co-ordinate a multi-national, multi-centre prospective clinical study on the outcomes of rotating-platform total knee prosthesis in Asian patients. Today the rotating-platform knee is still our prosthesis of choice, but we also use many other designs, especially those that may result in increased flexion range, which is an important issue in Asian patients. The division was one of the first centres to do computer assisted total knee replacements in Hong Kong, and has researched and published extensively in this regard. More recently, we also started researches on the use of patient specific instruments and prostheses that allow more accurate pre-operative template but avoid complications associated with conventional navigation.

Division of Joint Replacement Surgery

With an ageing population and an increasing acceptance of joint replacements by the population, we have seen a progressive growth in the number of surgeries we are performing. While less than 200 procedures were done every year before 2000, we did more than 350 procedures in 2009 and 2010. Despite the increase in the case volume, more patients ask for such procedures. As a result, the current waiting time for joint replacement is more than 3 year with over 700 patients on the list.

Overall, joint replacement surgery has made significant progress over the past years. We were one of the first to formally become a subspecialty division within the department in 1997. Even before that in 1996, a comprehensive database of joint replacement surgery was established to catalogue all operated cases to aid academic research and better patient care. The division has two full day operating lists a week, during when six to eight joint replacement operations are done. The ratio of primary total knee replacements to primary total hip replacements is about 4 to 1. About 40% of total hip replacements and 5 to 10% of total knee replacements are revision operations. Aside from hip and knee replacements, elbow and shoulder replacements are also performed. The most common indication is severe rheumatoid arthritis. About 10 to 15 such procedures are performed each year. The division holds two general clinics a week to take care of arthritic patients who opt for conservative treatment; and two joint replacement clinics to follow-up all operated patients. Every patient has detailed clinical, radiographic and quality of life assessments at each visit. We also hold preoperative assessment clinics together with the anesthesiologists and nurses to optimize preoperative preparation and patient education.

Surgical demonstration

Joint replacement workshop

Our division realized the importance of collaboration with surgeons from mainland China at very early on. In 1999, a collaborative centre on joint replacement surgery was formed with Yantai Shan Hospital, Yantai, Shandong to promote training and research in mainland China. Similar arrangements were also established with Xinjiang Uygur Autonomic Region Hospital in Urumqi, Xinjiang, Zhengzhou Orthopaedic Hospital in Zhengzhou, Henan, Guangzhou Medical College First Affiliated Hospital in Guangzhou, Guangdong, Ningbo Second Hospital in Ningbo, Zhejiang and Pu'ai Hospital in Wuhan, Hubei. Starting from 2001, our division organizes regular joint replacement workshops for mainland surgeons. In the workshop, we offered lectures, saw-bone practice and real-time surgical demonstrations. The number of course completed increased from 2 to 4 courses a year to 18 to 20 courses a year, with the overall number of mainland participants nearly 1000.

Division of Joint Replacement Surgery

Future Direction

Having established a firm base in clinical service, the division aims to expand by strengthening ties and promoting evidence-based research, both locally and regionally, and embarking on basic research projects related to joint replacement surgery, including cartilage regeneration, genetic predisposition of OA development in Chinese knee

Research

The three clinicians within the division actively pursue research in both basic and clinical areas. They are assisted by postgraduate students, clinical fellows and two research assistants.

The division is frequently approached by pharmaceutical and orthopaedic companies to participate in clinical trials in new drugs for osteoarthritis, and new joint prostheses. Thus, apart from funding granted by the Research Grants Council of Hong Kong (such as the HK$1.1 million in 1995 to support study of 'bone remodeling after cementless total hip replacement using dual energy X-ray absorptiometry') and several grants from HKU's Committee on Research and Conference Grants, the division receives support from numerous external sources. This includes HK$1.5 million industrial sponsorship to co-ordinate a prospective multicentre study on total knee replacement in Asian patients, and HK$400,000 from Hong Kong Baptist University for a collaborative study on the use of Traditional Chinese Medicine in the treatment of knee osteoarthritis. The division also acquires the RadioStereometric Analysis (RSA) system for the research on the use of bioactive cement in total hip replacement (supported by the Innovation and Technology Fund).

10 Most Representative Papers from Division of Joint Replacement Surgery

Hip:

1. Primary total hip arthroplasty in patients with ankylosing spondylitis. WM Tang, KY Chiu. Journal of Arthroplasty 15:52-58, 2000
2. Charnley total hip replacement in Chinese patients less than 40 years old. KY Chiu, TP Ng, WM Tang, KC Poon, WY Ho, D Yip. Journal of Arthroplasty 16:92-100, 2001
3. Acetabular revision without cement. TP Ng, KY Chiu. Journal of Arthroplasty 18:435-441, 2003

4. Sagittal pelvis rotation and positioning of the acetabular component in total hip arthroplasty: A three-dimensional computer model analysis. WM Tang, KY Chiu, MFY Kwan, TP Ng. Journal of Orthopaedic Research 25:766-771, June 2007

5. Cementless total hip arthroplasty specifically designed for Asians; Clinical and radiological results at 10 years. C Fang, KY Chiu, WM Tang, D Fang. Journal of Arthroplasty 25:873-877, September 2010.

Knee:

1. Posterior slope of tibial plateau in Chinese. KY Chiu, SD Zhang, GH Zhang. Journal of Arthroplasty 15:224-227, 2000

2. Lower limb alignment in Chinese adults. WM Tang, KY Chiu, YH Zhu. Journal of Bone and Joint Surgery (American Edition) 82-A:1603-1608, 2000

3. Sagittal bowing at distal femur and total knee arthroplasty. WM Tang, MFY Kwan, KY Chiu, TP Ng, WP Yau. Journal of Orthopaedic Research 23:41-45, January 2005

4. Intra-observer errors in obtaining visually selected anatomic landmarks during registration process in non-image-based navigation-assisted total knee arthroplasty. A cadaveric experiment. WP Yau, A Leung, KY Chiu, WM Tang, TP Ng. Journal of Arthroplasty 20:591-601, August 2005

5. Computer navigation did not improve alignment in a lower-volume total knee practice. WP Yau, KY Chiu, JL Zuo, WM Tang, TP Ng. Clinical Orthopaedics and Related Research 466(4):935-45, April 2008

Activities

Many distinguished joint replacement experts had come from all over the world and paid visits to our departments, given talks and performed surgical demonstrations. From their wisdom we benefitted, not only in patient care, but also in academic research and medical education. Since the Division of Joint Replacement Surgery was established in 1997, our visiting professorship list included Clive Duncan (Canada 1997), Thomas Schmalzried (USA, 2004), William Maloney (USA, 2006) and Daniel Berry (USA, 2010).

Regionally, the division organizes 16 to 18 3-day courses on arthroplasty each year for surgeons from Mainland China. Since 2001, the division has hosted nearly 100 courses and 1000 surgeons from all over China have attended such courses.

Division of Paediatric Orthopaedics

Division Chief : Dr. Wang CHOW (Division Chief)
Core Member : Dr. Michael TO (Assistant Professor)

Introduction

Our division provides a comprehensive paediatric orthopaedic service, treating congenital anomalies, metabolic bone diseases, complicated limb deformities, paediatric trauma and neuromuscular diseases. Applying the most current state-of-the-art surgeries and evaluation tools to our service, we provide the best treatment for our patients. In-patients are taken care of at the Duchess of Kent Children's Hospital (DKCH) and Queen Mary Hospital (QMH), while out-patients are seen at DKCH. We organise regular academic meetings, including clinical case conferences, journal clubs and pre-operative meetings, to help improve our clinical management skills, encourage academic interaction, and obtain literature updates in the field of paediatric orthopaedics. Furthermore, renowned international paediatric orthopaedic surgeons are regularly invited to our centre to give lectures and perform surgical demonstrations, further enhancing the clinical and intellectual development of the division.

Neuromuscular Disease Program

Disease patterns in paediatric and adolescent orthopaedic patients have changed over the past five decades. Better hygiene and an effective vaccination program in Hong Kong have led to a decline in chronic diseases related to tuberculosis and poliomyelitis. A significant portion of our workload has now shifted to neuromuscular diseases, particularly cerebral palsy. The Duchess of Kent Children's Hospital is the tertiary referral centre for the management of neuromuscular patients in Hong Kong, providing the most comprehensive service for neuromuscular patients in the territory. Patients are assessed in the neuromuscular, gait or seating clinic according to their clinical problems. The weekly neuromuscular clinic provides interdisciplinary, state-of-the-art evaluation and treatment for children with a variety of neuromuscular conditions including cerebral palsy, spina bifida, Duchenne muscular dystrophy, and spinal muscular atrophy.

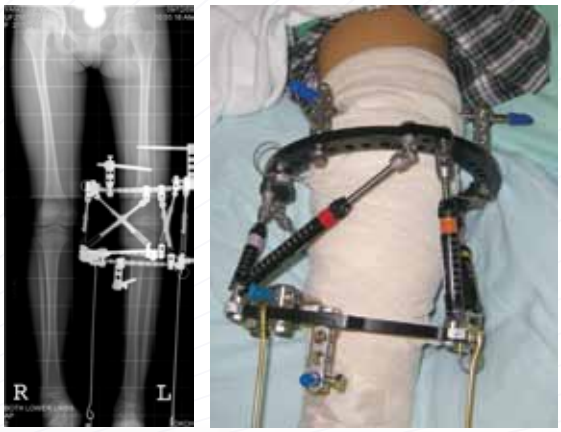
Ambulatory neuromuscular patients are assessed and analysed in the gait clinic before proceeding to surgery or botulinum injection. With the use of the recently upgraded motion analysis laboratory, abnormal gait patterns can be studied and systematically analysed. Cases are discussed with input from a multi-disciplinary team including doctors, physiotherapists, and occupational therapists to ensure thorough analysis of each problem.

Division of Paediatric Orthopaedics

First organised in 1996, the seating clinic takes a holistic approach to provide necessary care for non-ambulatory patients. This multidisciplinary collaboration involves paediatric orthopaedic specialists, paediatric neurologists, occupational therapists and orthotists. The team works to provide seating evaluations and to determine the most appropriate seating systems for our patients. This helps minimise the risk of pressure sore development and joint deformities in neuromuscular patients while maximising their potential for increased mobility and improving their quality of living. After evaluation from our team, severe scoliosis, hip dislocations and limb contractures are treated surgically to improve and facilitate nursing care.

Limb Lengthening and Deformity Correction

Our division is also committed to providing comprehensive and advanced treatment for limb length discrepancy and deformity. Since our centre's pilot study of the Ilizarov techniques after its introduction to Hong Kong, we have become the centre of referral for the treatment of complicated limb deformities. More than 200 patients with complicated upper or lower limb length discrepancies, limb deformities, congenital anomalies, bone defects, bone infections and dwarfism have been treated successfully in our center. Other limb deformity correction and lengthening devices such as Taylor spatial frames and Intramedullary Skeletal Kinetic Distractors (ISKD) have also been successfully used to treat patients. In 2008, we began performing safe surgical dislocations of the hip in managing certain complicated intra-articular and periarticular conditions of the hip. Patients who suffer from severe slipped capital femoral epiphyses can now be treated by subcapital realignment surgery using this approach safely and without increasing the risk of avascular necrosis of the femoral head.



Taylor spatial frame used for limb deformity correction

Division of Paediatric Orthopaedics

Motion Analysis Laboratory

The motion analysis laboratory at DKCH was set up in the early 1990s to perform gait analysis for patients with cerebral palsy, myelomeningocele and leg length inequality. We have also produced local data in non-affected children for more accurate comparison. Motion analysis helps to evaluate complex gait problems, fine-tune surgical decision and planning, and more importantly, to determine intervention outcome objectively. Gait courses are organized on a regular basis for doctors and therapists. Experts in gait analysis, including Drs. James Gage, Jon Davids and Hank Chambers, have been speakers at these courses. In addition to clinical service, the gait analysis laboratory at DKCH has become a teaching laboratory for students of the HKU since 2003. Over 200 undergraduates and postgraduates have performed their practical sessions on biomechanics in our laboratory over the past decade. The laboratory has recently undergone a thorough renovation and has been fully upgraded with the state-of-the-art motion analysis technology. This will further enhance clinical practice and research.

Paediatric Orthopaedic Fellowship

Our division offers two overseas fellowship positions each year for specialty training in paediatric orthopaedic surgery. Fellows join us from Southeast Asia, Africa, Latin America and Europe. They gain broad experience in both operative and non-operative treatment of paediatric orthopaedic conditions. Each fellow completes at least one research project during his or her training period at the Duchess of Kent Children's Hospital. With this fellowship programme, we hope to facilitate international orthopaedic knowledge exchange.

China Patients Project

This division has been working closely with the Society for the Relief of Disabled Children (SRDC) on the China Patient Project. The project aims to make our expertise available to underprivileged children with complicated orthopaedic problems in Mainland China. The SRDC sponsors these patients to come to Hong Kong to receive treatment. Since 2008, four patients have been treated successfully in Hong Kong through this pilot project. With support from SRDC, we aim to further expand our service so more children can benefit from the project.

Research

Despite being a relatively small division, we feel that active research pursuit is of vital importance in advancing our understanding of paediatric musculoskeletal problems and maintaining our high standards of clinical practice. Our research is well supported by our overseas fellows, postgraduate students, research assistants

and our clinicians. In addition to clinical studies, we also conduct basic science research focusing on regenerative medicine and deformity correction in hopes of providing our patients with a brighter future.

Recent and Representative Publications

Tong S, Eid M, Chow W, To M. Screening for developmental dysplasia of the hip in Hong Kong. Journal of Orthopaedic Surgery 2011 (In press)

Kwan K, Liu X, To M, Yeung K, Ho CM, Wong K. Modulation of collagen alignment by silver nanoparticles results in better mechanical properties in wound healing. Nanomedicine: Nanotechnology, Biology and Medicine 2011 (In press)

Tarek E, Chow W, Li YH, To M. Hereditary multiple exostoses of the hip. Journal of Orthopaedic Surgery 2009; 17(2):161-5

Yeung EHK, Li YH, Ng ON, Chow W. Radiographic assessment of congenital talipes equinovarus: strapping versus forced dorsiflexion. Journal of Orthopaedic Surgery 2005;13(3):253-258

Ip D, Li YH, Chow W, Leong JCY. Reconstruction of forearm deformities in multiple cartilaginous exostosis. Journal of Paediatric Orthopaedics (B) 2003; 12:17-21

Yau PWP, Chow W, Li YH, Leong JCY. Twenty-Year Follow-up of Hip Problems in Arthrogryposis Multiplex Congenita. Journal of Paediatric Orthopaedics 2002; 22(3): 359-363.

Ko HHN, Li YH. Standard growth of lower extremities in children and adolescents in Hong Kong. Hong Kong Journal of Orthopaedic Surgery 2001; 5(2):103-108.

Legaspi J, Li YH, Chow W, Leong JCY. Talectomy in patients with recurrent deformity in club foot. A long-term follow-up study. J Bone Joint Surg Br. 2001 Apr; 83(3):384-7.

Fong HC, Lu WW, Li YH, Leong JCY. Chiari osteotomy and shelf augmentation in the treatment of hip dysplasia. Journal of Pediatric Orthopaedics 2000; 20:740-744.

Li YH, Chow W, Leong JCY. The Sofield-Millar Operation in Osteogenesis Imperfecta, a modified technique. Journal of Bone & Joint Surgery (Br) 2000; 82-B:11-16.

Division of Orthopaedic Rehabilitation

Division Chief : Dr. Hau Yan KWOK (Associate Consultant)
Core Member : Dr. Hon Bong LEUNG (Specialist)

Introduction

Rehabilitation is an integral part of Orthopaedics and Traumatology. Our department has always recognized the importance of this and has played an active role in the development of rehabilitation therapies, together with the teaching and training of rehabilitation professionals. The Musculoskeletal Rehabilitation Service was set up in 2005 to meet with the needs in service and training.

Three affiliated extended care hospitals provide multidisciplinary rehabilitation services. They are all located in Sandy Bay and are: the MacLehose Medical Rehabilitation Centre, the Duchess of Kent Children's Hospital and Tung Wah Group of Hospitals Fung Yiu King Hospital.

MacLehose Medical Rehabilitation Centre (MMRC)

Multidisciplinary rehabilitation clinic

This purpose-built 110-bedded rehabilitation centre provides an excellent spacious environment and facilities for nurturing people with various types of physical and/or cognitive impairments, and to regain their functional independence. It has in-patient and day-patient services depending upon the client's need. Facilities include a 25 meter heated hydro-pool and a standard indoor basketball court for functional and recreational therapies, in addition to regularly updated rehabilitative equipment. It is staffed by full-time rehabilitation physicians, nurses, physiotherapists, occupational therapists, prosthetists & orthotists, clinical psychologists, speech therapists and medical social workers.

The Centre provides comprehensive tailor-made rehabilitation programmes for those suffering from spinal cord injures, after joint reconstructions or replacements, sports injuries, work-related injuries, poly trauma, amputees and chronic back pain. About 70% of cases admitted for rehabilitation are referred from our department. It is one of the three rehabilitation centres designated by the Hospital Authority of Hong Kong

Division of Orthopaedic Rehabilitation

Hydrotherapy pool

Physiotherapy

Occupational therapy

(HA) for management of patients with spinal cord injuries. The centre is also one of Hong Kong's leading rehabilitation centres for traumatic and non-traumatic brain injuries.

Spinal Cord Injuries Rehabilitation

MMRC has 35 beds designated for this purpose. The team comprises of orthopaedic surgeons, rehabilitation physicians, urologists, colorectal surgeons, nurses, physiotherapists, occupational therapists, medical social workers, clinical psychologists, orthotists, speech therapists and volunteers (many of whom were previous patients). Our aims are to rebuild lives with dignity, happiness, independence and confidence, participating fully in all aspects of community life. Although the neurological level of injury largely determines their functional outcome, rehabilitation protocol is personalized.

Centre for Paraplegic Walking

In 2002, this centre was established by a HK$3.5 million donation from the D.H. Chen Foundation. The centre was officially opened on 18th January 2002 and serves as a focus for research and training, providing complete paraplegic patients an opportunity to walk, and tetraplegic patients to obtain some useful upper limb functions.

There are currently two programmes:

1) Functional electrical stimulation

Function electrical stimulation (FES) is the use of electrical stimulation to activate paralysed muscles to restore some of their function. For lower limbs, FES can be used alone or in conjunction with various orthosis to provide paraplegic patients the ability to stand, transfer and walk for short distances. Our experience suggests that paraplegic walking systems can allow paraplegic patients exert greater control over their environment by affording them the ability to manipulate things that are inaccessible from the wheelchair. Upper limb FES can provide grasp and release for patients with cervical cord injury.

Functional electrical stimulation

2) Management of disabling spasticity

Spasticity is a common sequel to spinal cord injury. When poorly controlled, it may result in medical complications, impaired function, and reduced quality of life. Conventional treatment options include manipulation, splintage, electrical stimulation and medical treatment.

However, these methods provide only temporary relief of spasticity. The centre has introduced a number of new techniques to Hong Kong, including baclofen pump implantation, rhizotomy and peripheral neurectomy to provide long-lasting relief of spasticity and improved functional outcome.

Rehabilitation for Work-related Injury

The centre is one of the HA designated centres for work rehabilitation. The spectrum of patients includes complex limb trauma, back injury, and pain due to repetitive motion. Tailored work rehabilitation programs are started after the initial training and when the patients are ready to resume duty. Detailed work assessments are performed to define the patients' working capacity and to formulate the future work plan.

Amputee Rehabilitation

The centre provides life-long follow up for patients after amputation surgery and require prosthesis for function. Our highly skilled prosthetic team and the multidisciplinary approach to the problem allow patients to resume rewarding activity. Advanced prosthesis with cutting edge function are fabricated to suit the patients' extended need, including the possibility of sport activity.

Above knee amputation

Fung Yiu King Hospital (FYKH)

This hospital provides post-acute management of patients from all specialties in Queen Mary Hospital, with 86 beds dedicated to rehabilitation of ortho-geriatric cases, such as those with hip fractures, osteoporosis, and degenerative arthropathies. The strength in this service is its multidisciplinary approach with the involvement of the geriatricians and rehabilitation physicians in the day-to-day management of patients. Facilities include physiotherapy and occupational therapy services, medical social services, geriatric day hospital, and a very strong community geriatric outreach team providing medical and rehabilitation support for those discharged home or to other long-term care institutions. The hospital is a leading centre in geriatric services for Hong Kong Island.

Division of Orthopaedic Rehabilitation

The Duchess of Kent Children's Hospital

The Centre for Spinal Disorders

This centre specializes in the management of low back disorders using a multidisciplinary approach. In particular we concentrate on patients with chronic back pain and failed back surgery syndrome. A dedicated group of clinical psychologists, medical social workers, nurses, occupational therapists, pain specialists, physiotherapists and spine surgeons provides a 12-week structured rehabilitation programme. The goal is to help patients understand their pain and regain their ability to work and function. Back pain is considered not as a nuisance but a manageable sensation. Patients are trained in their physical ability, counseled on their social and psychological problems and rehabilitated in their work ability. The outcome of the programme is promising.

Assessment equipment in the Centre for Spinal Disorders

For those suffering from work-related acute and sub-acute low back pain, a pioneering streamlined outpatient programme was recently developed. It allows for rapid referral between relevant departments (accident & emergency, general out-patient clinics, physiotherapy and occupational therapy), all using the same unified assessment and treatment protocol. We aim to maximize the rehabilitation potential and recovery by preventing the development of back stiffness, disuse muscle weakness and sick role behaviour.

Continuing Development for the Next Decade

In line with Hospital Authority's development and the implementation of the subspecialty of rehabilitation in the College of Orthopaedic Surgeons, the Department of Orthopedics and Traumatology is at the forefront of establishing a 'rehabilitation hub' in Sandy Bay, and to foster rehabilitation knowledge among different healthcare professionals. This will serve the whole Hong Kong Island for tertiary rehabilitation, by integrating existing in-patient and out-patient rehabilitation services in the locality. Our department will aim to provide the most cost-effective and efficient rehabilitation services, and venture as a centre for training medical professionals in 'rehabilitation medicine' within our region.

Division of Spine Surgery

Division Chief : Professor Keith LUK
Deputy Chief : Professor Kenneth CHEUNG
Core Members : Dr. Yat Wa WONG (Consultant)
Dr. Wai Yuen CHEUNG (Associate Consultant)
Dr. Kin Cheung MAK (Specialist)

Introduction

The entire spectrum of spinal surgery is well developed within this division, which serves as a specialist centre for Hong Kong Island, and a tertiary/quaternary referral centre for the whole of Hong Kong and the region. Even before the formation of the division in 2000, the department was well known for its research and innovation in spinal surgery. Experience has accumulated over the past 50 years, with success reflected by numerous publications in the most reputable international journals and the continued desire of many doctors from abroad to undertake spine fellowships with us.

Over the years, the scope of spine pathology has advanced significantly, and our innovations have kept pace with this change. Accordingly, in the 60s the "Hong Kong Operation" for spinal tuberculosis was developed, in the early 70s the halopelvic apparatus, in the early 80s use of a titanium mesh block (one of the earliest form of cages) for anterior spinal fusion, in the late 80s transpedicular decancellation osteotomy for ankylosing spondylitis, in the 90s the fulcrum bending radiograph for scoliosis assessment, and in the new millennium intervertebral disc transplantation, plus the discovery of gene mutations in scoliosis and degenerative disc diseases.

Our services are provided in two hospitals, Queen Mary Hospital and the Duchess of Kent Children's Hospital, each taking on a special role. The Duchess of Kent Children's Hospital is internationally recognized for its care of patients with spinal deformities; including in the past, tuberculous kyphosis and post-polio deformities, and in the present day, scoliosis and ankylosing spondylitis. Pioneering work on the "Hong Kong Operation" for tuberculosis (anterior debridement and spinal fusion) and halo-pelvic traction for correction of deformities was carried out in this hospital, which attracted many visiting spine surgeons from around the world. The hospital has subsequently expanded to look after adult patients with degenerative spinal conditions and the Centre for Spinal Disorders was established in 1993. In collaboration with Division of Rehabilitation, this centre provides a comprehensive service for the assessment, treatment and rehabilitation of patients through a multidisciplinary team approach including the orthopaedic surgeon, bioengineer, clinical psychologist, nurse, occupational therapist, pain specialist, physiotherapist, prosthetist, interventional radiologist and social worker. Programmes provided include the treatment of patients with chronic low back pain and failed back surgery.

Division of Spine Surgery

As one of only two Hospital Authority-designated centres for scoliosis surgery in Hong Kong, the division has led this field by being the first to introduce scoliosis screening in Hong Kong (in collaboration with the Department of Health). Since its introduction in 1995, we have screened over 100,000 students per year, with more than 300 students diagnosed and referred for early treatment each year. This has proved to be one of the best screening programmes in the world. We continue to lead deformity care in Hong Kong with the introduction of new technologies such as prosthetic titanium rib (VEPTR) surgery for thoracic insufficiency syndrome and growing rod surgery for early onset scoliosis. We have also been developing our own deformity correction system using SMART (shape memory alloy reduction technology). A preoperative autologous blood donation programme has also been introduced to reduce the risks from and requirements for blood bank blood, as well as intraoperative spinal cord monitoring using combined motor evoked potentials and corticosomatosensory evoked potentials.

Fulcrum bending radiograph for assessing spinal flexibility in scoliosis

Grand Round with doctors, fellows, residents, therapists and nurses

Being a level one trauma centre and teaching hospital, Queen Mary Hospital manages the majority of patients with acute conditions such as spinal fractures, infections and tumours. The division has its own spinal injuries unit for the management of acute spinal cord injuries, and operates a Centre for Paraplegic Walking, aimed at helping those with chronic injuries to maintain mobility (see section on rehabilitation).

The division has three outpatient clinics (scoliosis, post-op follow-up and general spine) and three full-day operating lists (Monday, Tuesday and Thursday) a week.

Division of Spine Surgery

Spine surgery workshop

Education has always been an important part of our mission. Spine fellowships are provided in the Duchess of Kent Children's Hospital and Queen Mary Hospital. More than 150 overseas spine surgeons have been trained in our division and many of them have subsequently taken important teaching, research and service positions all over the world. We also hold educational courses for local and regional participants. Since 2002, the division has been an International Spine Reference Centre with AOSpine, hosting two additional international spine workshops a year, as well as providing spine fellowships and participating in the research and development programmes of AOSpine. Within the region, the division is actively involved in Asia-Pacific Orthopaedic Association and has formal agreements with two hospitals in China, Peking Union Medical Hospital in Beijing and Sun Yat Sen University in Guangzhou, regarding the formation of collaborative spine centres for education and research.

Research

The division has intensive programmes in both basic and clinical research. Research directions for basic research are molecular biology, molecular genetics, stem cell therapy, biomaterials and biomechanics. Clinical research includes both long-term prospective studies and retrospective analyses. Many of the projects are supported by competitive research funding or by venture capital companies (see table). The division has developed close collaborations with our own University's Faculty of Engineering, Department of Biochemistry, and the Department of Materials Science at City University of Hong Kong. The division has also collaborated with a number of regional and international centres of excellence including ones from Canada, Finland, Japan, Netherlands, Switzerland and USA. Notable successes have included the filing of nineteen patents, publications in reputable international journals (e.g. Lancet, Spine, JBJS-A, and American Journal of Human Genetics) and the attraction of industry involvement in development. For example, our work on allogeneic intervertebral disc transplantation, bioactive bone cement and super-elastic memory alloy have attracted venture capital involvement, and are at various stages of clinical trials. In particular, our pioneering work on allogeneic intervertebral disc transplantation, has demonstrated that disc transplantation is possible in human patients, with good long-term results. This "world's first" study was published in Lancet, and received widespread

Inter-vertebral disc transplantation in human at C6/7

international coverage and acclaim. Our division is also actively involved in translation of stem cells for clinical use and clinical trials for spinal cord injury and degenerative disc disease are in progress.

Apart from clinicians, we have one research assistant professor, two postdoctorate research fellows and over 20 postgraduate research students and research assistants working within the division. Our main areas of research includes genetics and molecular mechanisms of intervertebral disc degeneration, intervertebral disc regeneration and tissue engineering, intervertebral disc transplantation, novel spinal implants (antibacterial, bioactive, resorbable, superelastic), and surface modification of implants.

Strategic Research Theme on Biomedical Engineering

A Strategic Research Theme (SRT) on Biomedical Engineering (BME) was formed as one of 21 strategic research themes in HKU in 2005 with the short-term goals to:

- Establish an intra-institutional Biomedical Engineering research area with three sub-themes:
- Biomechanics, Biomaterials and Tissue Engineering
- Biomedical Electronics, Signal Processing and Electro-physiology
- Medical Imaging and MRI
- Foster interdisciplinary biomedical engineering research by setting up a BME research core facility platform and to encourage and foster applications for external research grants;
- Establish joint appointments or Adjunct Professorship between Faculties of Dentistry, Engineering, Medicine, and Science;
- Recruit research staff in the areas of biomedical engineering and related fields;
- Plan unique integration between academia, clinical medicine and industry, to enable biotechnology transfer.

The Faculties of Medicine and Engineering have each committed HK$25 million towards this project which is also matched by the University. Professor Keith Luk was appointed by the University Research Council as the Convener of the BME group to spearhead the theme because of the strong track record of related research conducted in the Department of Orthopaedics and Traumatology in the past half decade, in particular by the Division of Spine Surgery. The department is at present the most heavily involved department in this theme with no less than 45 teaching and research staff and students actively participating in research projects. To date we have jointly secured local and international competitive research grants and industrial sponsorships of over HK$40.89 million. A few large ITF (government sponsored) projects are also being approved. More than 100 journal papers, book/e-book chapters, conference presentations and abstracts have been published and seven international patents filed.

Recent Competitive Research Grants

Year	Title	Source	Principal Investigator	HK$(K)
2010	Development of a novel method to suppress bacterial adhesion on orthopaedic implant surface using plasma-based technology	RGC	K Yeung	977
2010	Prevention of orthopaedic implant related bacterial infections by using novel plasma surface treatments	ITF	K Yeung	760
2010	A mesenchymal stem cell-based approach to rescue intervertebral disc allograft from post-transplantation degeneration	RGC	KDK Luk	676
2010	Cardiovascular risk factors associated with intervertebral disc degeneration/low back pain	HHSRF	KMC Cheung	560
2009	Uncovering new compounds and mechanisms for treatment of intervertebral disc degeneration by Chemical Genetics	CERG	KMC Cheung	868
2009	A functional MRI study of the chronically compressed spinal cord in HUMANS	RGC	KDK Luk	759
2009	A long term evaluation of the clinical and cost effectiveness of the Hong Kong Scoliosis Screening Programme	RGC (Public Policy Research)	D Fong	351
2008	Hardware oriented processor for evoked potential fast extraction and auto-detection	ITF	Y Hu	960
2008	Roles and properties of notochordal descendent cells in the intervertebral disc	RGC	KMC Cheung	882
2007	Genome-wide identification and functional studies of genetic risk factors for low back pain and intervertebral disc degeneration	AOSpine	D Chan	5000
2007	Uncovering new compounds and mechanisms for treatment of intervertebral disc degeneration by chemical genetics	RGC	KMC Cheung	376
2007	Development of Novel Biodegradable Metallic Materials for Orthopaedics	RGC	K Yeung	739

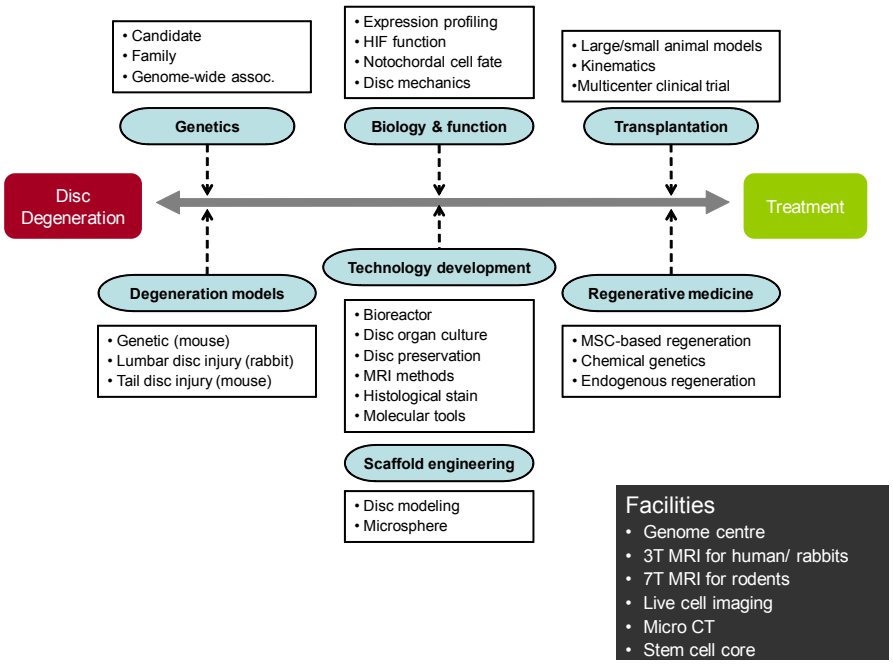
AOE - Area of Excellence Award
CERG - Competitive Earmarked Research Grants
HHSRF - Health and Health Services Research Funds

2007	Optimization and commercialization of strontium containing bioactive bone cement for various orthopaedic applications	ITF	WW Lu	5569
2006	Intervertebral disc regeneration by use of mesenchymal stem cells	CERG	KMC Cheung	1221
2006	Cost and clinical effectiveness of the Hong Kong scoliosis screening programme	RGC	D Fong	710
2006	Optimization and commercialization of novel metallic materials for orthopaedic use	Guangdong-HK Technology Cooperation Funding Scheme	KMC Cheung	9329
2006	Novel method for fast extraction and auto-recognition of somatosensory evoked potentials	RGC CERG	Y Hu	431
2006	The micro-structure and micro-mechanics of human intervertebral disc	RGC CERG	WW Lu	490
2006	Optimization and commercialization of novel metallic materials for orthopaedic use	ITF	KMC Cheung	9329
2006	Cost and clinical effectiveness of the Hong Kong scoliosis screening	RGC (Public Policy Research)	D Fong	710
2006	Intervertebral disc regeneration by use of mesenchymal stem cells	RGC	KMC Cheung	1221
2005	Development of Novel Materials for Orthopedics	RGC-CAV	P Chu	414
2005	Surface modification of Nitinol for Plasma Immersion Ion Implantation	Scoliosis Research Society	KMC Cheung	778
2005	Feasibility studies of a new surface treatment of Nitinol to be used as an implant material	Synthes	KMC Cheung	905
2005	The impact of the COL9A2 Q326W allele on inter-vertebral disc structure and degeneration	RGC	KMC Cheung	940
2004	Development genomics & skeletal research	AOE	KDK Luk/KMC Cheung	80000

ITF - Innovation and Technology Fund
RGC - Research Grants Council of Hong Kong

Recent and Ongoing Research Projects

Basic research



Material Science

Nitinol super-elastic implant

Implant surface modification (bioactive, antibacterial)

Neurophysiology

Spinal cord monitoring

Functional evaluation of low back pain

Diffuse tensor imaging for assessment of the spinal cord

Clinical research

Fulcrum bending radiography

Scoliosis maturity markers

Occupationally related low back pain

Functional electrical stimulation for paraplegics

Clinical trials on:

Super-elastic implant for scoliosis correction

Early onset scoliosis

Intervertebral disc transplantation

Cervical myelopathy

Stem cells for spinal cord injury and degenerative disc disease

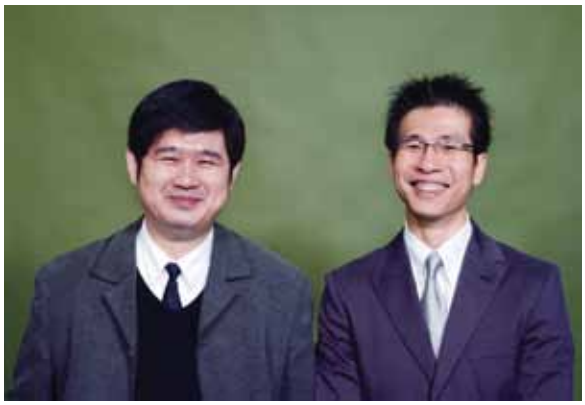
Preoperative neuroprotection for spinal cord injury

Representative Publications

1. Cheung KMC, Luk KDK. Prediction of scoliosis correction by the fulcrum bending radiograph. J Bone Joint Surg Am 1997, 79: 1144-1150
2. Luk KDK, Ruan DK, Lu DS, Fei ZQ. Fresh frozen intervertebral disc allografting in a bipedal animal model. Spine, May 2003, 28(9): 864-869.
3. Luk KDK, Chow DHK, Holmes A. Vertical instability in spondylolisthesis – a traction radiographic assessment technique and the principle of management. Spine, April 2003, 28(8):819-827.
4. Cheung KMC, Lu WW, Luk KDK, Wong CT, Chan D, Shen JX, Qiu GX, Zheng ZM, Li CH, Liu SL, Chan WK, Leong JCY. Vertebroplasty by use of a strontium containing bioactive bone cement. Spine. September 2005, Vol. 30, No.17S. S84-S91.
5. Luk KDK, Ng MC, Wong KK, Li G, Lai S, Yang ES, Hu Y. Proton density-weighted spinal fMRI with sensorimotor stimulation at 0.2T. Neuro Image, February 2006, 29(3):995-999.
6. Yeung KWK, Lu WW, Luk KDK, Cheung KMC. Mechanical testing of a smart spinal implant locking mechanism based on nickel-titanium alloy. Spine, September 2006, Vol 31, no. 20. 2296-2302.
7. Leung VYL, Chan D, Cheung KMC. Regeneration of intervertebral disc by mesenchymal stem cells: Potentials, limitations, and future direction. European Spine Journal. August 2006, 15 Suppl 3:S406-13.
8. Cheung KMC, Senkoylu A, Alanay A, Genc Y, Lau SSN, Luk KDK. Reliability and Concurrent Validity of the Adapted Chinese Version of Scoliosis Research Society-22 (SRS-22) Questionnaire. Spine. May 2007, Volume 32(10), 1141–1145.
9. Ruan DK, He Q, Ding Y, Hou LS, Li JY, Luk KDK. Intervertebral disc transplantation in the treatment of degenerative spine disease: a preliminary study. Lancet, March 2007, 369:993-999.
10. Song YQ, Cheung KMC, Ho DWH, Poon SCS, Chiba K, Kawaguchi Y, Hirose Y, Alini M, Grad S, Yee AFY, Leong JCY, Luk KDK, Yip SP, Karppinen J, Cheah KSE, Sham P, Ikegawa S, Chan D. Association of the Asporin D14 allele with lumbar disc degeneration in Asians. American Journal of Human Genetics, March 2008, 82(3):744-7.

Division of Sports and Arthroscopic Surgery

Division Chief : Dr. Wai Pan YAU (Assistant Professor)
Core Member : Dr. August FOK (Specialist)



Introduction

Arthroscopic surgery has been practiced in this department since the early 1960s. After the International Arthroscopic Association held its First Arthroscopic Instructional Course and Workshop in 1985 (organized by our department), arthroscopy became an increasingly popular method of assessment and treatment of knee disorders.

The rapid development in the technique and instrumentation of arthroscopy in the past twenty years has led to widespread application of this technique in other joints of the body, including the shoulder, hip, ankle, elbow, and wrist. The adoption of arthroscopy-assisted operation in the field of orthopaedics makes the practice of minimal invasive surgery possible. Patient recovery is enhanced and potential complications are minimized.

Currently, the Division of Sports and Arthroscopic Surgery provides arthroscopy service of the knee, shoulder, and hip joints. There are two specialists in the division, running a total of six outpatient clinics for the general public. There is a weekly general outpatient clinic designated for assessment of new case referrals. The division also holds five separate weekly sports clinics for management of patients requiring long-term follow-ups from sports specialists. Additionally, a pre-operation assessment clinic is conducted at Queen Mary Hospital and MacLehose Medical Rehabilitation Centre. We provide care for more than 2000 outpatients each year, and in 2010, more than 430 new patients were assessed in our division.

	Monday	Tuesday	Wednesday	Thursday	Friday
AM session	General Clinic (QMH)	Sports Clinic (QMH)	Departmental Conference	OT	OT (Alternate week in DKCH)
PM session	Shoulder Clinic/New Case Clinic (QMH)	Post-op Clinic (QMH)	Pre-op Assessment Clinic (QMH & MMRC)	OT	Research Activities

Division of Sports and Arthroscopic Surgery

The division holds two to three operation sessions each week and operates on a total of 180 patients each year. These include 40 shoulder arthroscopies (including arthroscopic Bankart repair, SLAP repair, rotator cuff operations and release of frozen shoulders), 75 cruciate ligament reconstructions (including both Anterior Cruciate Ligament reconstructions and Posterior Cruciate Ligament reconstructions) and around 65 other arthroscopic procedures (including knee, and hip arthroscopy). With advancements in arthroscopic technique and regional nerve block for peri-operative anaesthesia, we are witnessing a shortened in-patient stay for arthroscopy patients. Patients receiving arthroscopic-assisted shoulder Bankart repair need only one night of hospitalization while those who have undergone anterior cruciate ligament reconstruction are required to stay two nights. At present, 80% of patients who receive anterior cruciate ligament reconstructions are admitted on the day of surgery and the average length of hospital stay is less than two days. We anticipate the possibility of day-surgery in the near future, especially in patients receiving upper limb arthroscopy. This will lead to a significant reduction in medical expenses.

Porcine shoulder model for practice of arthroscopic Bankart repair in the arthroscopy laboratory in the Li Ka Shing Faculty of Medicine

Over the years, the division has been heavily involved in the organization and training of local residents in arthroscopic surgery. With the opening of the new Li Ka Shing Faculty of Medicine Building in 2002, we have been developing an arthroscopic surgery laboratory that enables trainees to practice their skills using both simulators and cadaveric joints. A Cadaveric Workshop in Arthroscopic Rotator Cuff repair and Arthroscopic Cadaveric Knee Workshop were organized in 2009 and 2010 respectively.

Future Directions

In the past three years, we have found a rising trend in both the number of patients receiving operations in our division and the number of outpatients assessed in sports specialist clinics. When we compared the statistics between 2005 and 2010, we noticed that there was a 20% and 80% increase in the total number of operations performed and outpatients assessed respectively. We believe that this is influenced by two factors:

1. Promotion of sports activity by the Government
2. Aging population in Hong Kong

Promotion of Sports Activity by the Government

Due to greater advocacy for athletics by the Government, there is an increased enthusiasm for sports participation by the general public. This has led to an increase in patients suffering from sports related injuries, some requiring specialist care and even operative intervention. There was a 50% increase in patients

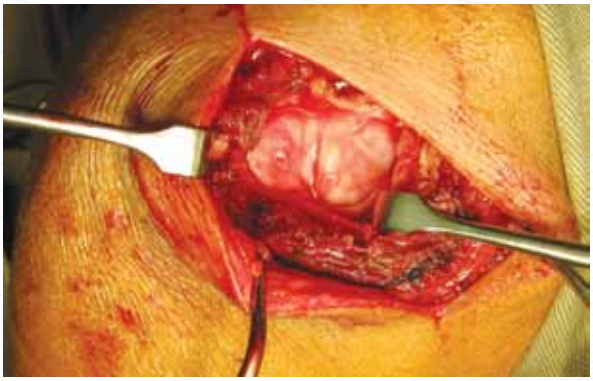
receiving anterior cruciate ligament reconstruction and 50% increase in patients receiving stabilization procedure for recurrent shoulder dislocation in our division between 2005 and 2010. In order to respond to this increasing demand, an Anterior Cruciate Ligament Reconstruction Service was set up in MacLehose Medical Rehabilitation Center in February 2008. This provides a one-stop outpatient rehabilitation service from preoperative assessment, post-operative physiotherapy training to fitness assessment before patients return to normal athletic activity.

The division is now seeking to improve services by streamlining our management, so as to assess patients with sports injuries within a reasonable waiting time. In-patient stays can be minimized by offering more day surgeries, improving our preoperative planning, and constructing clear surgical guidelines and protocols to clarify treatment plans and shorten patients' hospitalization. We hope that this will lead to improved care for this group of young, active patients, who provide major economic support to the community.

Aging Population in Hong Kong

Hong Kong is facing a myriad of challenges arising from its aging population. Rotator cuff disease is one of the most common complaints in patients suffering from degenerative orthopaedic problems. The presentation can range from shoulder pain secondary to impingement, weakness due to rotator cuff tear, to stiffness as a result of end-stage cuff arthropathy. It is estimated in the United States that the incidence of rotator cuff tear in patients over 60 years of age is 34%. We believe that the rising number of patients seen in our sports clinic is partly related to the increase in number of patients suffering from symptomatic rotator cuff problems. In order to properly address this, one of the weekly sports clinics was especially designated for the assessment of shoulder problems in early 2008. We hope this will lead to a better balance in patients receiving conservative treatment and those requiring early surgical intervention. We aim to shorten the recovery period and reduce the economic burden on society.

MMRC pre-operation assessment clinic



Clinical photo showing massive rotator cuff tear

Division of Sports and Arthroscopic Surgery

Research

Although anterior cruciate ligament reconstruction is a commonly performed operation, a number of issues, including suboptimal graft incorporation within the bone tunnel, lack of suitable tools for outcome assessment and potential inaccuracy in tunnel position, are still not well addressed. Many surgeons in the field of sports medicine believe that there is room for improvement in this operation.

Assessment of pivot shift test by motion analysis in Institute of Human Performance

In order to address these issues, the Division of Sports and Arthroscopic Surgery is now investigating possible methods to enhance graft incorporation in ACL reconstruction using strontium and stem cell technology. Together with the Department of Physics and Materials Science at the City University of Hong Kong, we are developing a novel biomaterial for implants used in ACL graft fixation.

In collaboration with the Institute of Human Performance of the University of Hong Kong, the classic “pivot shift” test is being revisited using motion analysis technique. We believe that this will lead to a better understanding in ACL reconstruction surgery and hopefully improve the standard of care in this commonly performed operation.

Management of chondral lesions is currently a popular topic of discussion in orthopaedics research. Autologous chondrocyte implantation is considered to be the standard of care. However, the high cost of the procedure and the need for staged operations on the involved region are obstacles to its widespread adoption. We are now working with the Department of Medical Engineering of the University of Hong Kong to explore the possibility of using a novel scaffolding technique in the management of this difficult problem. We hope that this will lead to a relatively inexpensive, one stage procedure for this disease entity.

Current Research Projects

Difference in ACL laxity on isolated popliteus injury and combined popliteus and LCL injury

Difference between Larson LCL reconstruction and Popliteus tendon reconstruction in instability of ACL reconstruction

Division of Orthopaedic Trauma

Division Chief : Dr. Frankie LEUNG (Associate Professor)
Deputy Chief : Dr. Tak Wing LAU (Associate Consultant)

The Division of Orthopaedic Trauma was officially established during the major restructuring of our department in 2003. Trauma service plays a crucial role in our department, in clinical service and research, as well as education. Our mission is to provide the best trauma service to our patients through the fusion of traditional wisdom with the newest technology, and to lead our department to become one of the best trauma centers in the world.

Introduction

Queen Mary Hospital is a level 1 trauma centre in Hong Kong as well as a tertiary referral centre of complicated trauma cases. There is a constantly high admission rate of a wide variety of trauma cases ranging from simple hip fractures to complicated multiple trauma cases. Despite this immense workload, our long-developed and well-organized trauma list operation system helps to alleviate the situation effectively. The trauma list system not only helps to shorten the pre-operative waiting time for trauma patients, it also provides a good opportunity for senior surgeons to share their experiences and educate the trainees in a structural manner.

Pre-operative planning

Regular follow-ups on our patients in the outpatient clinic comprise a major part of our daily work. In order to improve our service, special outpatient clinics were set up in order to explore and evaluate newly developed techniques and implants. Through the constant and regular assessment of patient clinical outcomes, many of the clinical studies on different aspects have been completed and published in international journals.

The division has become a leader in the field of hip fracture research. Thanks to improvements in medical care, the life expectancy of our population is ever increasing. Elderly patients with multiple medical problems and extreme age are frequently admitted with osteoporotic hip fractures. In this division alone, about 400 hip fracture cases are admitted per year. In early 2007, our department was the first in the region to introduce the Critical Clinical Pathway for Geriatric Hip Fractures, championed by Dr. Lau Tak Wing. Through collaborations

Surgery

between trauma surgeons, anaesthetists, physicians, nurses and allied health personnel, the average pre-operative waiting time has improved to less than 48 hours after admission. The average length of hospital stay was significantly shortened by 5 days. This achievement was recognized and received the Hospital Authority Outstanding Team Award in 2007/8 and 2010/11.

In 2010, led by the trauma division, various leading figures in the field of geriatric fracture management from Austria, Switzerland and the United States, collaborated to author a supplement regarding geriatric hip fracture management, which was eventually published in International Osteoporosis journal. This supplement included 16 papers discussing various aspects in geriatric hip fracture management. It covered a range of comprehensive topics including the challenges encountered in managing the geriatric hip fractures from the perspectives of the physician, anaesthetist and orthopeadic surgeon Different health care models to manage hip fractures in Hong Kong, US and Switzerland were discussed. The inclusion of an update on the management of osteoporosis completed the supplement.

We have also taken part in the evaluation of minimally invasive surgery, currently considered to be standard management whenever applicable. The technique has been refined in the past years. The preservation of soft tissue viability, careful handling of traumatized area and the utmost attention to the biology of bone healing has led us to achieve excellent results in fracture management on par with the international standard. Our experiences in minimally invasive surgery have led us to document the subtleties of the technique in international trauma journals.

With the frequent use of minimally invasive surgical technique, increased exposure to radiation during intra-operative assessment is inevitable. The development of computer navigation aided surgery helped reduce some of those effects. Our application of computer navigation in trauma service ranges from acute pelvic fracture fixation to late reconstruction of long bone malunion. With continuing improvements in computer hardware and software, the potential of this technique is still to be explored.

Minimally invasive surgery

Computer navigation surgery

Division of Orthopaedic Trauma

Education

Dr. Frankie Leung is currently a Trustee of the AO Foundation, which is an internationally renowned trauma organization dedicated to improving trauma and fracture management. In conjunction with the current chairman, Dr. Lau Tak Wing, and other members in the AOTrauma Hong Kong chapter, regular AO courses, seminars and workshops are organized in the city. These activities attract hundreds of surgeons and operating room personnel from all over the world to learn from each other and share their experiences. The first Asia AO course on Geriatric Fracture Management held in February 2008 in Hong Kong was an unprecedented success. Early this year, the AOTrauma principle course for both surgeons and operating room personnel was completed with positive responses from the participants. Over 120 members came from all over the world, including Australia, China, Mongolia, the Netherlands, Georgia and the United Kingdom, and participated in various lectures and practical exercises during the 3-day course. The close relationship between the division and the AO international group has allowed us to provide opportunities for many of our trainees to go overseas for various levels of training.

AO Course

Aside from educating our own trainees, the division also hosts trauma surgeons from various parts of the world as trauma fellows. This programme allows for exchange of ideas and new techniques. Owing to the increasing demand of the program, it is sometimes difficult to cater to all the applied doctors within a year or two.

Research

Good clinical practice cannot lack good clinical research as support. The division does not lack such support, as evidenced by the numbers of scientific papers from this division that have been published in international peer-reviewed journals. As Dr. Frankie Leung is currently the Chairman of Clinical Research in the AOTrauma Asia Pacific, the division is actively involved in various basic and clinical research in the field of fracture management, and in the design and evaluation of implants for fracture fixation.


Cadaveric workshop

Division of Orthopaedic Trauma

Distal radius fractures have always been one of the great interests in our division. Many important management guidelines currently in use are the result of the work done in 1980s. However, not only has the management of the distal radius fracture changed rapidly in the last few years, but the understanding of the mechanism of injury and the related soft tissue injury has also evolved. The newly developed locking plate and screws system now provide great flexibility to fracture management even in the most technically difficult distal radius fractures, such as very comminuted or osteoporotic cases. Responding to this need for greater research, division members have led a group of orthopaedic surgeons from Hong Kong, Singapore and Taiwan to perform a multicenter prospective randomized study on the use of plate versus the external fixator technique in intra-articular distal radius fractures. The results showing overall faster and better functional recovery with less osteoarthritic problem was published in the Journal of Bone and Joint Surgery (America) in 2008.

Teleconferencing

Our department is the tertiary referral centre for multiple trauma patients, and pelvic injuries are commonly observed. However, the fixation of pelvic fractures is always a challenge even to experienced surgeons. As a member of the AO pelvic trauma expert group, Dr. Frankie Leung and the other members of the group have tried to solve these fixation problems by the development of a new set of pelvic trauma instruments and anatomically shaped implants. With the eminent problem of osteoporosis, increased numbers of "unstable" pelvic injuries are seen in the elderly after low energy trauma. The management strategy, fixation techniques, and results of these osteoporotic pelvic fractures were investigated. The preliminary results have been encouraging. The recent upswing of interest in "unstable" pelvic fractures in the elderly can be attributed to our early work.

Minimally invasive surgery is the current direction for surgeries whenever applicable. Many of its applications in both upper limbs, e.g. humerus and lower limbs, e.g. tibia, have been studied. Our division published and performed analysis of the result of these. The risks of the technique are sometimes under-estimated. With our accumulating experience, problems, particularly late infection in the fracture tibia fixed with minimally invasive plating technique, were addressed.

Last but not least, our work on geriatric hip fracture is also well recognized. Osteoporotic fracture fixation has always been one of the hottest topics in fracture management. In 2010, we performed a basic biomechanical study on the fixation of unstable hip fracture using newly designed implants. Regarding the overall management of the geriatric fracture patients, not only was the refinement of the clinical management of patients addressed, but the re-arrangement of logistics with the emergency department, the redefinition of

surgically fit patients with the anaesthetist, the establishment of the fast track consultation with the physician, were also part and parcel of our geriatric hip fracture clinical pathway. Our experiences and audit of the results was published in the International Osteoporosis journal last year.

Publications in Scientific Journals

1. Leung F, Chow SP : A randomised prospective trial comparing Low Contact Dynamic Compression Plate and Point Contact Fixator in forearm fractures Journal of Bone and Joint Surgery, American vol., Dec 2003; 85: 2343-2348
2. Leung F, Tu YK, Chew W, Chow SP: Comparison of External and Percutaneous Pin Fixation with Plate Fixation of Intra-articular Distal Radius Fractures: A Randomized Study Journal of Bone and Joint Surgery, American vol., Jan 2008; 90:16-22
3. Leung, F; Zhu, L; Ho, H; Lu, W; Chow SP: Palmar plate fixation of AO type C2 fracture of distal radius using a locking compression plate – a biomechanical study in a cadaveric model The Journal of Hand Surgery (British), vol 28B, 3, June 2003 :263-6.
4. Leung, F; Chow, SP : Locking compression plate in the treatment of forearm fractures: a prospective study Journal of Orthopaedic Surgery 2006:14(3):291-4
5. Leung, F; Ozkan, M; and Chow, SP : Conservative treatment of intra-articular fractures of the distal radius – factors affecting functional outcome. Hand Surg, Dec 2000, 5, No. 2, 145-153
6. Leung, F; Xiang Z: Locking Compression Plate fixation for periprosthetic femoral fracture Chinese Journal of Reparative and Reconstructive Surgery, 2, (16), March, 2002
7. Leung, F; Kwok HY; Pun TS; Chow SP: The use of Ilizarov external fixation in distal tibia fractures Injury 2004 Vol 35/3, 278-283
8. Leung F: Editorial – Surgery for elderly wrist fractures: For better form or better function? Journal of Orthopaedic Surgery 2005:13(3):221-222
9. Leung F., Paata G, Fung B, Chow SP: Arthroscopic assessment of in the management of distal radius fracture The Chinese Journal of Orthopaedic Trauma, March 2006, vol. 8 (3), 203-207
10. Leung F: Editorial – What is the goal of surgical treatment of elderly distal radius fractures? The Chinese Journal of Orthopaedic Trauma, March 2006, vol. 8 (3), 201-202
11. Lau TW, Leung F, Chan CF, Chow SP: Wound complication of minimally invasive plate osteosynthesis in distal tibial fracture Int Orthop. 2007 Jun 16; Epub ahead of print
12. Lau TW, Leung F, Chan CF, Chow SP: Minimally invasive plate osteosynthesis in the treatment of proximal humeral fracture Int Orthop. 2007; 31: 657-664

13. Wong MK, Leung F, Chow SP: Treatment of distal femoral fractures in the elderly using a less-invasive plating technique Int Orthop. 2005 Apr;29(2):117-20.

14. Chow SP; Leung F: Trauma Care system in Hong Kong Injury Sep 2003;34(9):684-5

15. Haroon R, Leung F, Lu W, Fung B, Chow SP: Biomechanical Evaluation of Plate Osteosynthesis for AO type C2 Fracture of the distal radius – a cadaver study Hand Surgery , Dec 2003, vol 8, no. 2

16. Lu W, Zhu LJ, Ni Guoxin, Leung F, Chow SP: Five fixation methods for unstable intra-articular fractures of the distal radius: an in vitro biomechanical study using cadaveric model The Chinese Journal of Orthopaedic Trauma, March 2006, vol. 8 (3), 208-211

17. Lie C, Leung F, Chow SP: Nicolau syndrome following intramuscular diclofenac administration – a case report Journal of Orthopaedic Surgery 2006:14 (1):104-107

18. Atypical femoral diaphyseal and subtrochanteric fractures and their association with bisphosphonates. Leung F, Lau TW, To M, Luk KDK, and Kung AWC. BMJ Case Reports 2009 doi: 10.1136/bcr.10.2008.1073

19. Occult posterior pelvic ring fractures in elderly patients with osteoporotic pubic rami fractures. Lau TW, Leung F. J Orthop Surg (Hong Kong). 2010 Aug;18(2):153-7.

20. Geriatric hip fracture clinical pathway: the Hong Kong experience. Lau TW, Leung F, Siu D, Wong G, Luk KDK. Osteoporosis Int. 2010 Volume 21, Supplement 4: 627-636

21. Preoperative cardiac risk assessment in geriatric patients with hip fractures: an orthopedic surgeons' perspective. Siu CW, Sun NC, Lau TW, Yiu KH, Leung F, Tse HF. Osteoporos Int. 2010 Dec;21(Suppl 4):S587-91. Epub 2010 Nov 6

22. Pre-operative pulmonary assessment for patients with hip fracture. Lo IL, Siu CW, Tse HF, Lau TW, Leung F, Wong M. Osteoporos Int. 2010 Dec;21(Suppl 4):S579-86. Epub 2010 Nov 6.

23. Peri-operative management of anti-platelet agents and anti-thrombotic agents in geriatric patients undergoing semi-urgent hip fracture surgery. Ho HH, Lau TW, Leung F, Tse HF, Siu CW. Osteoporos Int. 2010 Dec;21(Suppl 4):S573-7. Epub 2010 Nov 6.

24. Does timing of surgery matter in fragility hip fractures? Leung F, Lau TW, Kwan K, Chow SP, Kung AW. Osteoporos Int. 2010 Dec;21(Suppl 4):S529-34. Epub 2010 Nov 6.

25. Is Helical Blade-Dynamic Hip Screw Superior to Conventional Dynamic Hip Screw in Different Position of Unstable Intertrochanteric Fractures? A Biomechanical Study. Lau TW, Tsang D, Sui FG, Yuen G, Yeung K, Leung F. Hong Kong 30th Orthopaedic Annual Congress 2010: Basic science paper session

Publications in Book Chapters

1. Rockwood and Green Fracture in Adult - Radial and Ulna Fracture
2. AO Manual of Fracture Management: Internal fi xators (LISS and LCP),Stuttgart, Thieme Verlag. Proximal Humeral fractures 6.1.7; Distal tibial fractures 10.2.4
3. AO Manual of Fracture Management: Minimally invasive plate osteosynthesis (MIPO), Stuttgart, Thieme Verlag. Implants (Chapter 4); Reduction techniques (Chapter 7); Humerus, Proximal 11.2; Femur; Distal 15.2; Tibia and Fibula, Proximal 16.3
4. AO Manual of Fracture Management: Elbow and Forearm. Partial articular, complete frontal fracture of the capitellum (13-B3.1). P.87-94
5. AO hand book: Orthopaedics Trauma Care. Various authors. 2009

Future

With increasing numbers of geriatric fracture patients, one expects greater difficulties will be encountered in trauma service. Introduction of functional implants and techniques to tackle these osteoporotic fractures is important. However, this only comprises a small part of the management plan. Good medical support, follow-up treatment of the osteoporosis, prevention of fracture in high risk groups and tailored rehabilitation plan are all factors we are working to optimise. Our work in the last few years has already formed the basis of a system for the management of osteoporotic fracture. The" whole patient approach" in our philosophy acts as the foundation of our future clinical and logistics planning. We hope that our success will be helpful to other hospitals and ultimately our patients.

The synergy between computer navigation and modern techniques in fracture management will be another future focus of our work. Through structural data gathering and evaluation of the result and critical analysis, the future of our clinical practice will be based on our published conclusions. We firmly believe education is also very important and the continued collaborations with other international institutions to organise courses, workshops and seminars remains one of our future objectives.

Regional Bone Banking Services

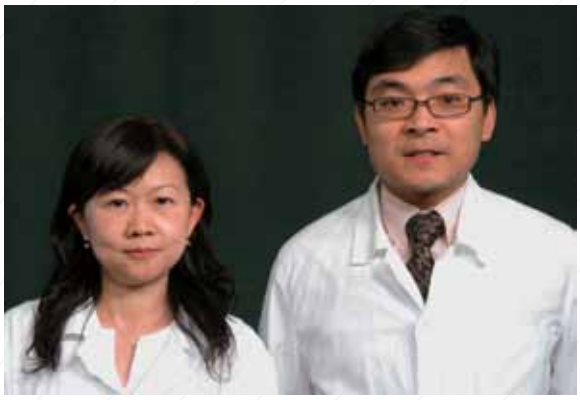
Director: Dr. Kenneth HO
Medical Laboratory Technician: Ms. Mavis YIU

Introduction

The QMH Bone Bank was set up in 1983 under the leadership of Prof. SP Chow. Initially, only femoral heads from live donors were harvested and stored in liquid nitrogen. Later, we switched to store the allograft in freezers. In 1990, the Bone Bank became the first regional Bank in Hong Kong capable of procuring cadaveric bones. Over these years, we have been continuously improving our quality of service, especially in the direction of prevention of transmittable diseases. We have introduced routine irradiation of all cadaveric specimens for sterilization, and we maintain the service at an international level.

Service

The Bone Bank provides bone and tendon allografts to all the hospitals in Hong Kong, both public and private. This includes femoral heads and large segments long bones for Orthopaedic reconstructive surgeries, as well as tendon-bone allografts for ligamentous reconstruction. All the procurement, processing, storage and supply are done by us, complying strictly with the guidelines and protocols set up by the Asia Pacific Association of Surgical Tissue Banks. Each year, we procure about 2 sets of long bones from cadavers, and 60-70 femoral heads from live donors. Between 2002 and 2010, 331 femoral head allograft have been used in 201 operations. They were used for reconstituting bone defects, bone grafting and fusion. More than 90% of the femoral heads were used in the HKWC hospitals. Within the same period of time, 111 pieces of cadaveric allograft from the Bone Bank were also utilized in a variety of surgeries,



Ms. M Yiu (left) and Dr. K Ho (right)

Preparation of allografts

Bone defect from benign bone tumour is reconstructed with femoral head allograft

Major tibial bone defect encountered during revision total knee replacement is reconstructed using cadaveric tibial allograft

like revision joint replacement, revision ACL reconstruction and segmental bone reconstruction after tumour resection. About 50% were used in the HKWC hospitals, while the rest were provided to other HA hospitals or private hospitals. We also perform Hospital Authority-funded research to assess the safety of skeletal tissues used for transplantation and the epidemiology of infections acquired in transplantation of banked skeletal tissues.

In recent years, there is an increasing demand of ligamentous reconstruction. The Bone Bank has revised the protocol in 2008 to include long tendons of the ankles and toes from the cadaveric donors. This serves to provide an alternate source of tissue for ligamentous reconstruction.

Future Development

As a result of the inferior outcome of post-tumour resection reconstructive procedures with massive allograft, the use of allograft reconstruction in tumour surgery is losing popularity. However, there is still a high demand of cadaveric allograft in other Orthopaedic sub-specialties. In addition, as mentioned before, the use of tendon allograft for ligamentous reconstruction after sports injury is gaining favour. The Bone Bank will continue to constantly review its procurement and processing protocols to suit the changing needs of musculoskeletal tissue transplant.

Orthopaedic Research Centre

1961-2011

Department of Orthopaedics & Traumatology

Orthopaedic Research Centre

Introduction

Our research has come a long way since the inception of the department in 1961. At the beginning, the main focus was on clinical research, which resulted in the department's first participation in a major Medical Research Council (UK) multi-centre trial for the treatment of tuberculosis of the spine. The successes of the "Hong Kong Operation", anterior debridement and spinal fusion firmly placed the department on the international orthopaedic map. Over the past 15 years, basic research has gathered increasing momentum, with the graduation of our first M.Phil student in 1988, and the employment of a full time Scientific Officer in 1995. While the initial thrust was predominantly in biomechanics, other areas of interest have now expanded to include biomaterials, regenerative engineering, molecular biology, genetics, bio-nano technology, and neurophysiology. To date, many of the clinical staff are involved in both basic and clinical research projects, and at any one time there are up to 50 postgraduate students, research fellows, and post-doctoral fellows working within the department.

The Orthopaedic Research Team, 2011

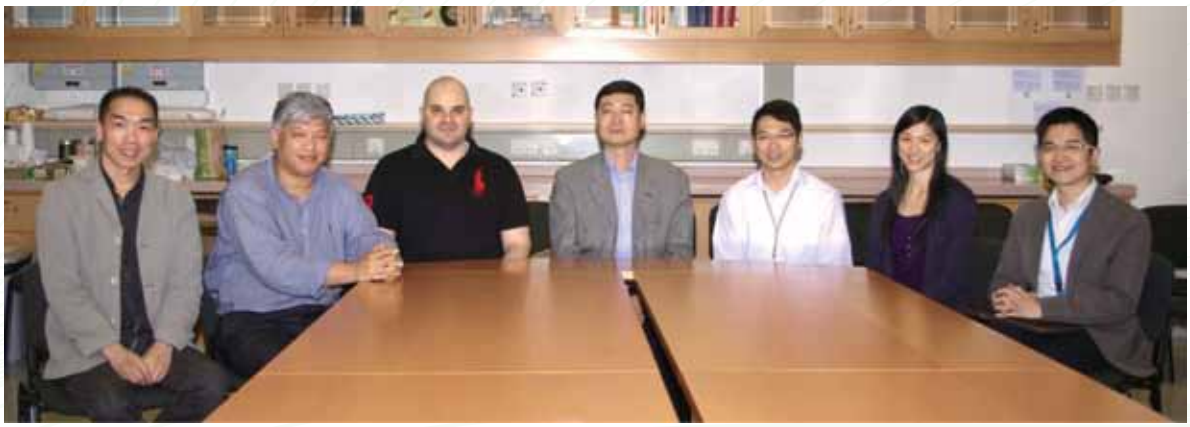
The Orthopaedic Research Centre was formally established in 1995, providing a strong foundation for musculoskeletal research. The centre is a multidisciplinary venture dedicated to achieving the highest standards in both clinical and basic scientific research. Our facilities consist of 8000 sq-ft of laboratory space located within Li Ka Shing Faculty of Medicine Building (HKU) and at the Duchess of Kent Children's Hospital. In addition to state-of-the-art equipment within each lab, the Research Centre is staffed by team members who strive for research excellence, exploring all aspects of orthopaedic related issues. The results of our dedication can be found in over 100 peer-reviewed research articles in high quality journals, the establishment of over 15 patents, collaboration with industry in the development of surgical implants and biomaterials, success in securing external research grants, and continued interest of both local and overseas researchers to carry out research in our centre.

International, Regional and Local Collaborations

Major Orthoapedic Research centre collaborators

We have widespread research collaborations with major orthopaedic research centres internationally, including CANADA: University of Alberta, University of British Columbia, University of Toronto and University of Waterloo; JAPAN: University of Hiroshima, University of Osaka and University of Tohoku; SINGAPORE: Singapore National University; SWEDEN: Malmo University Hospital; SWITZERLAND: AO/ASIF; U.K.: University of Nottingham, University of Liverpool, Queen's University of Belfast and University of Strathclyde; U.S.A.: Columbia University, University of Vermont, University of Chicago and University of New Orleans. We have also established research collaborations regionally including: Sun Yat Sen Medical University, Guangzhou; Nan Fang Medical University, Guangzhou; Beijing Medical University, Beijing; Peking Union Medical College, Beijing; Fourth Military Medical University, Xian; Shanghai Second Medical University, Shanghai Traditional Chinese Medicine University, Shanghai and Tianjin University, Tianjin.

The centre has also established contract research with the world's major orthopaedic manufacturers such as, A-Spine Holding Corp., Anaheim Medical Products Ltd., Biomet USA. Inc., BioPac Systems Inc. USA, Depuy, Johnson & Johnson Ltd., Mathys Ltd., Medtronic Sofamor Danek, Smith & Nephew Ltd., Stryker Ltd., Synthes Inc. and Zimmer Pte Ltd. Recently, the centre has also conducted contract research with local industries including mattress company Airline HK Ltd, and Pharmaceuticals (HK) Ltd.



Faculty Members

William Weijia LU, PhD, MHKIE
Professor and Chairman of Dept. Research & Higher Degrees Committee
Research interests: Biomechanics, cell and tissue engineering, biomaterials including bioactive cements design and testing of new orthopaedic implants and protheses and BioNano technology.

Yong HU, PhD
Assistant Professor
Research interests: Clinical electrophysiology, neural engineering, functional electrical stimulation, biomedical signal processing and biomedical sensor and technology.

Kelvin YEUNG, PhD, MHKIE
Assistant Professor
Research interests: Surgical correction for spinal deformities, biomedical materials development, interfacial cell biology and surface treatments of biomaterials

Senior Research Staff

Dino SAMARTZIS, PhD
Research Assistant Professor
Research interests: Non-genetic and genetic factors related to intervertebral disc disease and back pain, cervical spine disorders and management, spine deformities and spinal biomechanics

Haobao PAN, PhD
Post-doctoral Fellow and Honorary Assistant Professor (O&T and Dentistry)
Research interests: Biomaterials and tissue engineering, calcium phosphates chemistry, oral chemistry, solubility and thermodynamic theory, biological evaluation in-vitro and in-vivo

Victor LEUNG, PhD
Post-doctoral Fellow and Honorary Assistant Professor
Research interests: Stem cell-and chemical-based regenerative medicine for intervertebral disc degeneration and osteoarthritis, Notochordal cell biology in intervertebral disc.

Zhaoyang LI, PhD
Post-doctoral Fellow
Research interests: Polymeric and ceramic biomaterials for bone tissue engineering, bone structure and biomechanics

Vivian TAM, PhD
Post-doctoral Fellow
Research interests: Application of various types of stem cells for the treatment of degenerated intervertebral discs (IVDs) and IVD niche affecting the differentiation of stem cells

Paul WEN, PhD
Post-doctoral Fellow
Research interests: Bone architecture analysis using computed tomography and neuron signal analysis using magnetic resonance imaging technology

Orthopaedic Research Centre

Research Laboratories and Facilities

The main research laboratories are situated on the 9th floor, Laboratory Block of The Li Ka Shing Faculty of Medicine Building. They are divided into the following areas:

Mechanical testing system

The Biomechanics Laboratory

Staffed by one technician, this lab is equipped with a MTS Mini-Bionix bi-axial test system and NDI Optotrak motion analysis system. The full range of mechanical testing can be performed for all regions of the human body (e.g. spine, hip and finger), following ASTM or ISO, all types of animals (e.g. goat, rabbit and mouse), as well as implants, protheses and biomaterials. Hip and spine kinematics simulations are also available with the specially-designed fixtures. In addition, the laboratory has the implant wear simulation testing system for biomechanical testing of small joints.


Parr 4547 large scale hydrothermal reactor for all kinds of biomaterials

The Biomaterials Laboratory

This lab develops biomaterials, bioactive bone cements, bio-microsphere for drug and cell delivery, and supply scaffolds for tissue regeneration and engineering. The lab is equipped with a ball mill grinder, sieve shaker, vacuum pump and apparatus, high temperature oven, etc. Of note is our recent success to develop a novel bioactive bone cement for prosthesis and implant fixation and treatment of osteoporotic fractures. The lab has also installed from small 100ml Teflon

lined reactor to Parr 4547 large scale hydrothermal reactor for synthesis nano powder, nano rods in all kinds of biomaterials.

The Molecular and Cell Biology Laboratory

The majority of research is carried out in collaboration with the HKU Department of Biochemistry, and many facilities and equipment are shared. Additionally, the Genome Centre of the Faculty of Medicine provides core facilities and support for genomics and proteomics projects. Our relatively small laboratory received setup funding from the HKU Foundation for development into an adult stem cell research laboratory, supporting work on musculoskeletal tissue regeneration. Projects such as treatment of osteoporotic fractures by encapsulated allogenic mesenchymal stem cells, intervertebral disc regeneration are underway.

Culture of cells by a post-graduate student using the tissue culture facilities

The Histology and Experimental Surgery Laboratory

This laboratory has all the facilities for performing standard histology on soft tissues and decalcified sections. Our laboratory has also newly acquired an in-vivo micro CT scanner (Skyscan 1076) which is installed for small animal in-vivo imaging of bone. Our cutting & grinding system facilitates the cutting of hard tissues such as bone. The other half of the lab has been set up to perform animal surgery on small laboratory animals such as mice, rats and rabbits. In addition to standard operating room equipment, there is an operating microscope that is commonly used for small animal surgery, as well as for practicing surgeons to sharpen their microdissection and repair skills.

Above: A post-graduate student using a specialised Micro-CT scanner for determining bone mass in small laboratory animals .
Inset image: MicroCT reconstruction of a rat femur

Orthopaedic Research Centre

From left to right: Magnesium polymer hybrid biomaterial, a postgraduate student viewing samples using a microscope, culture of pluripotent stem cells

Orthopaedic Skills Laboratory

Approximately 900 sq ft. is set aside for a skills laboratory and seminar room. It is intended that this lab will be used for cadaveric and saw-bone workshops, as well as for holding small to medium-sized seminars. We have custom-built seven removable workstations, each with compressed air, vacuum suction, electricity and a water supply. The laboratory aims to provide the highest standard technology to train orthopaedic surgeons locally and regionally in the following areas:

- Arthroscopic surgery

- Fracture fixation
- Hand Surgery
- Joint replacement surgery
- Limb lengthening Surgery
- Micro-surgery
- Spinal surgery

Orthopaedic Research Centre

Young Chi Wan Bone and Joint Research Laboratory

This laboratory is in the MacLehose Medical Rehabilitation Centre, where a dual-energy X-ray absorptiometry machine is installed to measure bone mineral density for both service and research. In particular, it is used to study bone remodeling around total hip prostheses.

The Audio-Visual Laboratory

Located in Queen Mary Hospital, this lab provides support for documentation of clinical cases in everyday service, and for publication of research work. It is equipped with digital photography, video and scanning support, video editing facilities, a large sized colour plotter for printing of posters, and darkroom facilities.

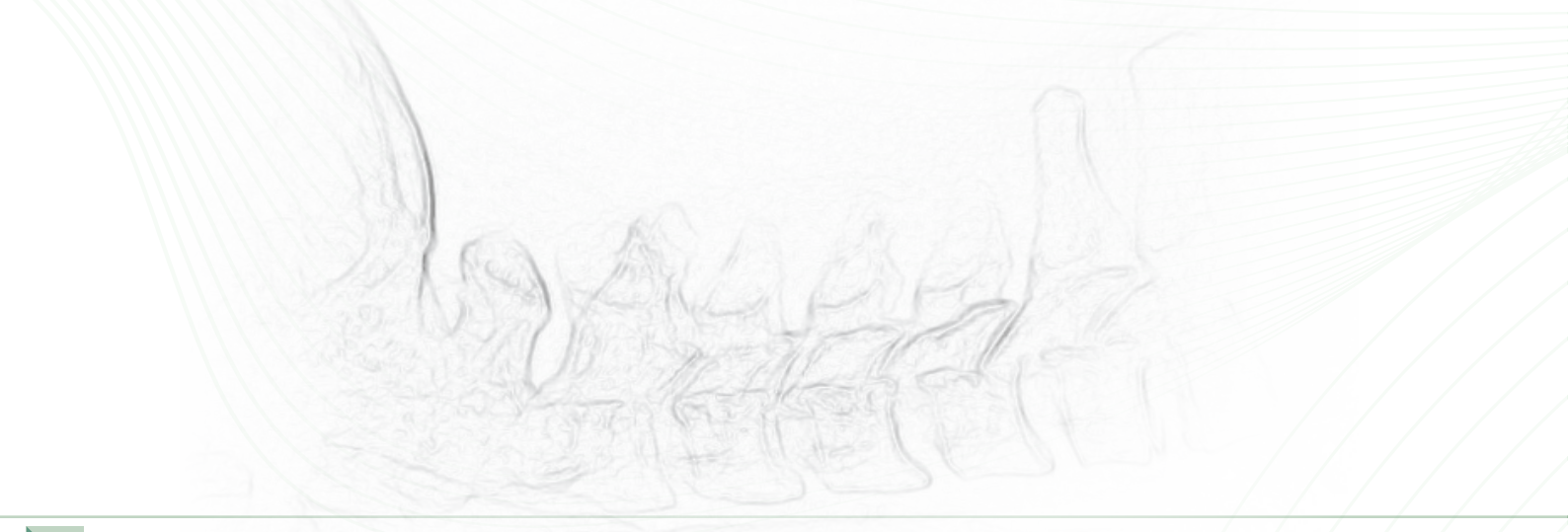
Another laboratory is also located at The Duchess of Kent Children's Hospital for the convenience of the patients.

Laboratory of Clinical Electrophysiology and Neural Engineering

Intra-operative Spinal Monitoring with two Nicolet Viking IV Electrophysiologic Systems are in the operating theatres for spinal cord intra-operative monitoring and research applications. In addition, this laboratory was equipped with Bagnoli-16 EMG System (DelSys Inc.Boston, USA), NT9200-D digital EEG system (Symtop Inst. Co. LTD. Beijing), and Magstim 250 (The Magstim Co. Ltd, UK).

The Motion Analysis Laboratory

The laboratory is recently upgraded and equipped with the latest Vicon 3-dimensional motion analysis system, which is used in studying motions in the spine, peripheral joints and gait analysis. This laboratory is also equipped with a telemetric electromyography (EMG) machine, pedobarograph and other computer equipments. As a result, both information on kinetic and muscle action can be studied.



Major Research Funding

RGC and GRF Grants:

Research Title	Investigators	Funding
Dynamic surface electromyography topography for objective assessment of low back pain (HK$0.409M)	Y Hu, SC Chan, YH Chen, KDK Luk	GRF
Functionalized multiwalled carbon nanotubes reinforced Sr-HA bioactive bone cement (HK$0.456M)	WW Lu, CT Lin, Q Sun, CT Wong, KDK Luk	RGC
The micro-structure and micro-mechanics of human intervertebral disc (HK$0.490M)	WW Lu, AHW Ngan, KMC Cheung, KDK Luk	RGC
Novel method for fast extraction and auto-recognition of somatosensory evoked potentials (HK$0.431M)	Y Hu, KDK Luk, SC Chan, CQ Chang	RGC
Genetic basis of Degenerative Disc Disease in Chinese (HK$1.5M)	KMC Cheung, KSE Cheah, D Chan, SP Yip, KDK Luk, JCY Leong	RGC
Gradual scoliosis correction by use of a superelastic alloy (HK$0.7M)	KMC Cheung, JCY Chung, WW Lu, KDK Luk	RGC
Development of an artifical finger joint (HK$0.9M)	SP Chow, I Gibson, KY Chiu, WY Ip, WW Lu	RGC
The role of the pineal gland in the causation of scoliosis: A bipedal rhesus monkey model (HK$1M)	JCY Leong, KMC Cheung, SF Pang, Carl Allen, Hu Yougu	RGC
Transgenic mouse model for the regulation bone formation (HK$0.8M)	KMC Cheung, KES Cheah, Danny Chan	RGC
Shear properties of the lumbar spine and their relationship to spinal instability (HK$0.8M)	WW Lu, A Holmes, KDK Luk, JCY Leong	RGC
A minimally invasive approach to anterior release in scoliosis by chemonucleolysis: An experimental study with the rabbit scoliosis model (HK$1.9M)	KDK Luk, DS Lu, KMC Cheung, JCY Leong	RGC
Mouse models for the study of genetic factors affecting bone fracture repair (HK$0.8M)	KMC Cheung, KSE Cheah, JCY Leong	RGC
Study of function after hand injuries (HK$0.6M)	WY Ip, SP Chow	RGC

A comprehensive, objective study of the cause, effect and methods of prevention of occupationally-related low back injury (HK$0.7M)	KDK Luk, KMC Cheung, DHK Chow, JCY Leong, WW Lu	RGC
Development fast evoked potential measurement methods and their clinical application in intra-operative spinal cord monitoring (HK$0.5M)	FHY Chan, KDK Luk, FK Lam	RGC
Biomechanical and anatomical evaluation of the human sacrum for lumbosacral fixation (HK$0.7M)	JCY Leong, WW Lu, SZ Zhong, QA Zhu	RGC
Intra-operative spinal cord monitoring: The application and limitations of different types of evoked potential techniques (HK$0.7M)	KDK Luk, PKY Chiu, YW Wong, Y Hu	RGC
Development of a novel method to suppress bacterial adhesion on orthopaedic implant surface using plasma-based technology (HK$1.12M)	KWK Yeung, KMC Cheng, KDK Luk, PK Chu, RYT Kao	RGC
Development of Novel Plasma Modified Metallic Materials for Anterior Cruciate Ligament Reconstruction (HK$0.94M)	KWK Yeung, WP Yau, KMC Cheung, KDK Luk, PK Chu	RGC
Development of Novel Biodegradable Metallic Materials for Orthopedics (HK$0.74M)	KWK Yeung, KMC Cheung, KDK Luk, PK Chu	RGC

Other Fundings:

Research Title	Investigators	Funding
Development of a stable Sr-HA bioactive bone cement for vertebroplasty (HK$0.5M)	WW Lu, Jacky Wong, KDK Luk	Technology Seed Fund, HKU
Nano-Sr-HA Bioactive bone cement for Hip replacement (HK$0.895M)	WW Lu, Xu Bing (HKUST), AHW Ngan, PKY Chiu, KDK Luk	Innovation and Technology Fund
Optimization and commercialization of strontium containing bioactive bone cement for various orthopaedic applications (HK$5.569M)	WW Lu, Bing Xu (HKUST), PKY Chiu, KDK Luk, AHW Ngan, JCY Leong, KMC Cheung, WK Chan	Innovation and Technology Fund
Design and development of implantable artifical finger joints for biological repair (HK$3.19M)	SP Chow, KW Chan, WW Lu, PKY Chiu, AHW Ngan	Innovation and Technology Fund
Optimization and Commercialization of Novel Metallic Materials for Orthopaedic Use (HK$9.4M)	KMC Cheung, KWK Yeung, KDK Luk, PK Chu, WW Lu, CY Chung	Innovation and Technology Fund
Hardware Oriented Processor for Evoked Potential Fast Extraction and Auto-detection (HK$0.967M)	Y Hu, KDK Luk, YW Wong, P Cheung	Innovation and Technology Fund
Biomechanical and Electrophysiological Guidance for Low Back Pain Rehabilitation and Prevention (HK$0.629M)	Y Hu, KDK Luk, HY Kwok, A Cheng	SK Yee Medical Foundation
Provision of Individualized Biomechanical and Electrophysiological Service for Occupational Low Back Disorder Patients (HK$0.5M)	KDK Luk, Y Hu, WW Lu	SK Yee Medical Foundation

Implementation of Individualized Brain Computer Interface Design for Spinal Cord Injury Patients (HK$0.33M)	Y Hu, SK Gao, YW Wong, KDK Luk	SK Yee Medical Foundation
Studying Effectiveness and Compliance of Neck Support for Car Repairing Workers (HK$180K)	Y Hu, KDK Luk	OSHC
Prototype Design of Neck Support for Car Repairing Workers (HK$100K)	KDK Luk, Y Hu, WW Lu	OSHC
Using topography of surface EMG for occupational low back pain (LBP) assessment (HK$0.5M)	KDK Luk, Y Hu, WW Lu	OSHC
Spinal Muscle EMG & Spine Kinematics During Sleep On Different Bed Mattress (HK$0.18M).	WW Lu, Y Hu, KDK Luk, JCY Leong	Airland Co. Ltd
New Injectable Bioactive Bone Cement for Spinal Surgery (HK$4.5M)	WW LuKMC Cheung, KDK Luk, JCY Leong	Hang Lung Limited
Spinal muscle functions for scoliosis patients after spinal fusion (HK$0.5M)	WW Lu, KDK Luk, KMC Cheung, JCY Leong	CRGC, Society
An experimental study on the new bioactive materials: Hydroxyapatite composite with gelatin/chitosan and with hydrophilic polymer networks (HK$0.4M)	WW Lu, KD Yao, YW Li, KY Chiu, JCY Leong	CRGC NSFC
Motion analysis for cerebralpalsy and normal Chinese children (HK$0.4M)	YH Li, V Chan, JCY Leong, MK Lee, WW Lu	SRDC
Evaluation of changes in pulmonary functions in children with scoliosis pre-and post-operatively and comparative analysis with healthy Southern Chinese children (HK$1.3M)	JCY Leong, KDK Luk, WW Lu, M Ip, NV Chan, EM Karlberg	Croucher

Orthopaedic Education

1961-2011

Department of Orthopaedics & Traumatology

Undergraduate Teaching

Postgraduate Training

Undergraduate Teaching in Orthopaedic Surgery

The Medical Curriculum

With the implementation of the new undergraduate medical curriculum in 1997, the focus of learning was shifted to problem-based learning (PBL). The number of lectures is now reduced and there is an increased emphasis on small group teaching. The philosophy is to cultivate life-long learning. Therefore, while the syllabus is not comprehensive, crucial core knowledge and skills are covered. The new curriculum also places more emphasis on continuous assessment of the students' performance. Summative assessments include written papers and objective structured clinical assessments. Over the years, student feedback has consistently indicated that undergraduate teaching in orthopaedic surgery ranks highly among the many subspecialties covered.

Years 1 and 2

In the first two years of the curriculum, students go through different system blocks, one of which is the musculoskeletal system. The musculoskeletal system block is a 5-week module in which teaching of basic sciences is integrated in with the disease processes. Teaching sessions include PBL case tutorials, 25 lectures, 10 practicals, and a 3-hour clinical skills teaching session.

PBL case tutorial is an important element of the new curriculum. The students form small groups and go through 4 PBL cases. During each tutorial, the faculty member gradually pieces of information concerning the case. Students then discuss among themselves to identify clinical problems and learning issues. They then study on their own to find the relevant information and return for the second PBL tutorial where more information will be provided. Throughout this process, the faculty member serves as a facilitator in the discussion. The four cases selected for orthopaedic surgery are spinal muscular atrophy, humeral shaft fracture after arm wrestling, osteoarthritis of the hip, and sciatica after lifting heavy objects.

In the clinical skills session, the students are introduced to the tenets of "look", "feel", and "move", and they study the normal range of motions of the joints in the body. They are also exposed to the clinical features of common conditions such as rheumatoid arthritis, osteoarthritis, gout, and cervical and lumbar spondylosis.

Year 3

The Integrated Block is an 8-week block during which the class is divided into 2 groups. They take turns going through 4 weeks of either medicine-related or surgery-related teaching. In this block, there are 4 impact lectures and 4 clinical skills sessions on orthopaedic surgery.

The Junior Clerkship lasts for 24 weeks and consists of 3 blocks – medicine block, surgery block, and multidisciplinary block. Orthopaedic surgery is taught during the multidisciplinary block during which several seminars are given on musculoskeletal tumors and infections. Similar to PBL case tutorials, students are urged to continue self-study between the seminars.

The Senior Clerkship lasts for 24 weeks and also consists of 3 blocks – medicine block, surgery block, and multidisciplinary block. Orthopaedic surgery is taught during the surgery and multidisciplinary blocks. Students attend bedside teaching at network hospitals, including Caritas Medical Centre, Kwong Wah Hospital, Pamela Youde Nethersole Eastern Hospital, Princess Margaret Hospital, and Queen Elizabeth Hospital. Common orthopaedic problems, including principles of fracture management, diagnostic imaging, and orthopaedic emergencies are taught in interactive seminars. A visit to MacLehose Medical Rehabilitation Centre allows students to learn about the principles of musculoskeletal rehabilitation.

Integrated Block Lectures
Introduction to Orthopaedic Surgery General concepts of musculoskeletal system Diagnosis of orthopaedic problems Principles of management
Injuries to Bone & Joints Classification of injuries Disease-based approach Common bone & joint injuries Common fractures
Children's Orthopaedics & Deformities Growth & Development Common paediatric orthopaedic problems Differences between children & adults
Reconstruction Range of conditions requiring reconstruction Methods of reconstruction Challenges of reconstruction

Integrated Block Clinical Skills Sessions
Bone & Joint Injuries Concepts of bone & joint injuries Reduction & stabilization of fractures Immobilization & rehabilitation of fractures
Upper Limbs Physical examination of upper limbs Common upper limb orthopaedic problems
Lower Limbs Physical examination of lower limbs Common lower limb orthopaedic problems
Spine Physical examination of the spine Etiology of common spinal problems Treatment of common spinal problems Principles of common spinal deformities

Undergraduate Teaching

Junior Clerkship Seminars
A young lady with distal femur bone tumor Signs & symptoms of primary bone tumor Imaging in bone tumor Staging of bone tumor Principles of treatment of bone tumor
An old gentleman with right thigh mass Signs & symptoms of soft tissue mass Imaging in soft tissue tumor Staging of soft tissue tumor Principles of treatment of soft tissue tumor
A 6-year old child with bone pain & fever Differential diagnoses of bone pain in children Imaging of infections & tumors
A drug abuser with back pain & fever Signs & symptoms of infective spondylitis Imaging in infective spondylitis Principles of treatment of infective spondylitis

Senior Clerkship Whole Class Seminars
A child with deformed spine Congenital deformities & other problems
A child with bone pain Bone tumor, osteomyelitis, soft tissue sarcoma
A painful hip Common hip problems
My foot hurts Common foot problems
Back pain Common neck & spine problems
A painful shoulder Common shoulder problems
Painful knee after playing football Common sports injuries
I jumped and fell from height Fractures & epiphyseal injuries
I hurt my arm Dislocations & fractures
I cannot move my limbs after a dive Paraplegia after spinal injury
I cut my finger Hand injuries, industrial safety, compensation
How does it work? Biomechanics in orthopaedics

Years 4 and 5

Orthopaedic surgery is taught in Specialty Clerkship together with family medicine and private practice. Short case scenarios are posted online and students are expected to prepare for the cases prior to attending the teaching seminars. The PBL spirit continues in bedside teaching as students choose their own cases and learn about the disease entities prior to the arrival of the bedside tutor. Clinical competency tests, consisting of live and dead stations, assess their clinical skills at the end of each rotation.

Prof. SP Chow group presentation in the specialty clerkship

Specialty Clerkship Seminars	
Scoliosis	Foot and ankle disorders
They are too important to miss	Ten common orthopaedic conditions
Peripheral nerve injuries	You will be sued
Common paediatric problems	Arthritis
Childhood injuries	Knee disorders
Hand injuries	Common hip disorders
You can't afford to wait	Orthopaedic basic sciences
Low back disorders	Shoulder and elbow disorders

Specialty clerkship - new case clinic

Bedside teaching

Postgraduate Training

Postgraduate Training in Orthopaedic Surgery

The department recognized continued medical education as a core element in orthopaedic practice and therefore considerable effort is placed to regularly organize activities for continued medical education and post-graduate training. This encompasses a broad spectrum of activities ranging from the annual Orthopaedic Forum, structured courses and workshops, surgical demonstrations, visiting professorial lectures, tutorials, seminars, and clinical case conferences. These activities target not only the local orthopaedic community, but also regionally and internationally. Most of the activities are formally credited by the Hong Kong College of Orthopaedic Surgeons. Through a structured six-year orthopaedic training program and qualification examinations, the department is also one of the top local producers of orthopaedic specialists.

The Hong Kong International Orthopaedic Forum

5th HK International Orthopaedic Forum

This annually held symposium in April features a comprehensive two-day programme. The event has been held since 2004 with topics covering the Aging Skeleton (2004), Work-related Injuries (2005), Pifalls in Orthopaedic Practice (2006), Musculoskeletal Problems in the Skeletally Immature (2007), New Frontiers (2008), Musculoskeletal Degeneration (2009), and Common Orthopaedic Myths (2010). Distinguished international experts are invited to share their experience in their respective sub-specialized fields. Apart from orthopaedic surgeons, the audience also includes allied health professionals summing up to over 500 participants each year. Associated with satellite programs such as workshops, guest lectures, and live surgical demonstrations, this event has grown in reputation to become a benchmark regional gathering each year.

Certificate Workshops and Courses

Joint Replacement Course

The Division of Joint Replacement Surgery holds tri-monthly arthroplasty certificate courses in association with allied industrial partners. Since 2001, over 600 participants have benefited from these courses. Each three-day course comprehensively covers basic science concepts, preoperative and postoperative care, saw bone workshops, and live surgical demonstrations.

The department and the AO Foundation co-organize regular courses covering a wide range of topics. Courses covering

complications in spine surgery, severe childhood spinal deformity, upper limb fractures, pelvic fractures, geriatric fractures, and CRP training have been given to over a hundred participants. Day workshops ranging from microsurgery, hand fractures, to soft tissue coverage surgery have been held for local doctors.

AO Trauma Course - practical session

Visiting Professorships

Our visiting fellow and visiting professor in a surgical demonstration

Over the years, no less than 100 internationally recognized "star" experts have come to the department and contributed to the exchange of scientific knowledge and clinical experience. Their presence in the department not only enlightened the younger generations but was also essential in maintaining the department's standard at an international level. This is made possible by constant support from particular benefactors and, therefore, plenary lectures are named after them.

Visiting Fellows

Qualified overseas doctors and researchers are invited to practice full clinical duties, carry out research work in the department in three to six months post-graduate exchange programmes. The programme is highly sub-specialized and focuses on individual development in clinical and research abilities. Clinical fellowship, visiting surgeon, visiting researcher, and observer-ship posts are available with the Hand & Foot, Spine, Joint Replacement, and Paediatric Orthopaedic Divisions.

Weekly Clinical Case Conference and Subdivision Educational Meetings

Each Wednesday, a two-hour conference is chaired by one sub-division. Discussion is focused on a particular topic with in-depth review of scientific evidence and its clinical applications. Trainees are particularly invited to comment on cases. The aim of the meeting is both for trainee development and for discussion of optimal clinical care among specialists in complicated cases.

Clinical Case Conference

Subdivisions hold weekly meetings for trainee

education and case discussion. This can be in the format of preoperative and postoperative case reviews, grand rounds, seminars, or a combination of all of the above.

Regular combined meetings and conferences are held with radiologists, oncologists, physicians, trauma surgeons, paediatricians, and allied health personnel. With specialists from other fields, educational meetings and case reviews provide ample opportunity for continued education, ensuring that the clinical practice of our doctors are holistic and up-to-date.

Department Research Days

Research meetings are held regularly between the research and clinical staff to facilitate exchange of ideas. These meetings allow staff members to aid each other in solving of difficult clinical or research problems, and may even give rise to novel projects. Students and clinicians are given the opportunity to polish their presentation skills. Despite the busy schedules of department staff, all members make time to attend these meetings to ensure they remain reasonably conversant with all aspects of orthopaedics.

Visiting Professorships

1961-2011

Department of Orthopaedics & Traumatology

Visiting Professorships

Cilag Visiting Professors

Keiro Ono

1985

M S Moon

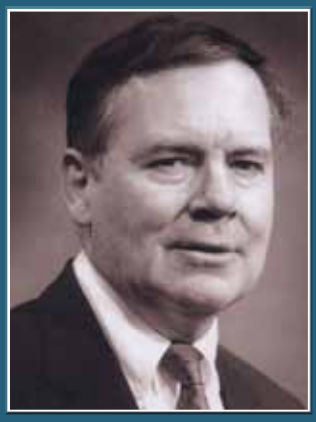
1986

T Tajima

1987

Takao Yamamuro

1988



James R Urbaniak

1990

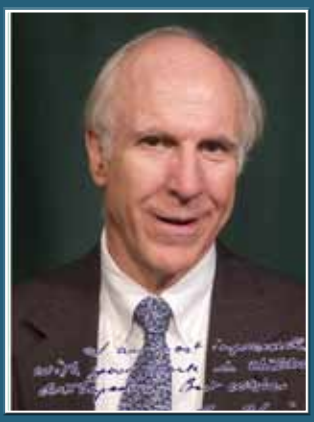
Harry Fang Visiting Professors

Michael Alan Tonkin

2003

Eugene Carragee

2004



John A Herring

2005

Howard An

2006

Reinhold Ganz

2008

APC Weiss

2009

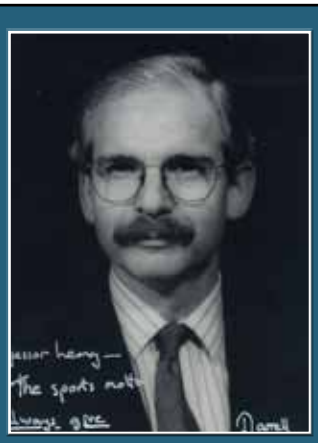
Daniel Berry

2010

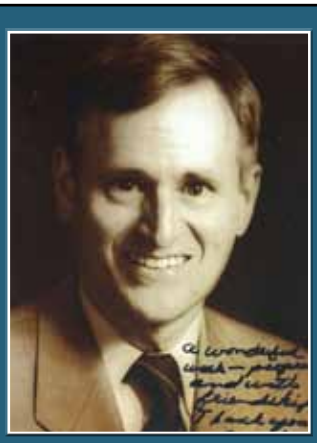
Visiting Professorships

HC Yang Visiting Professors

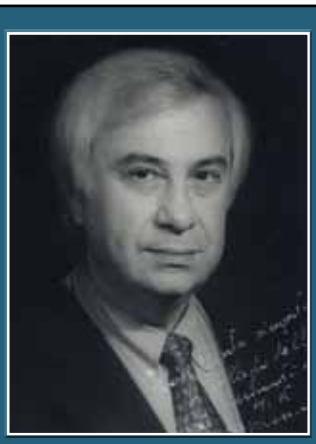
Lynn Staheli
1997



DJ Ogilvie-Harris
1998

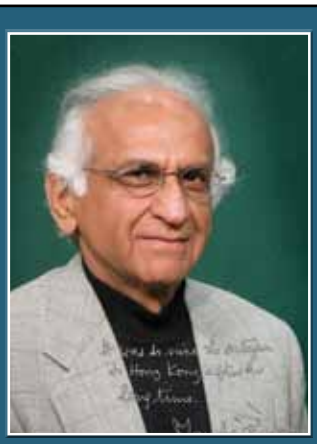


Ronald W Smith
1999



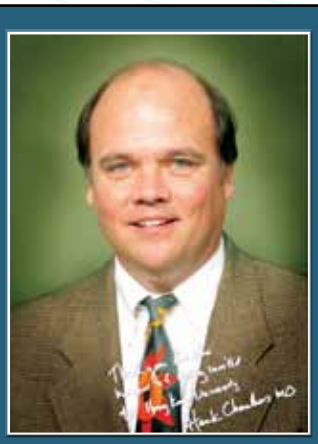
Rodolfo Cappana
2000

Dr. PFR Diebold
2003



Manohar Panjabi
2005

Michael G Rock
2006



Henry G Chambers
2007

Lawrence Lenke
2007

HC Yang Visiting Professors

GBJ Andersson

2010

Christian Krettek

2008

Christopher Moran

2009

YT Lo Visiting Professors

Kamal Bose

1996

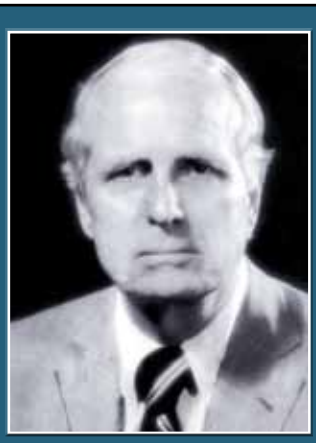
Jesse B Jupiter

1999

MB Lee Visiting Professors

John Chalmers

1973



Wood W Lovell

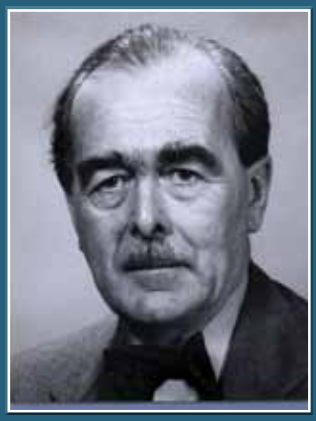
1974

N J Giannestras

1975

Alan G Apley

1976

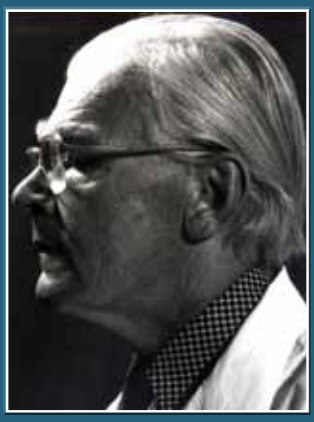


Donald R Gunn

1977

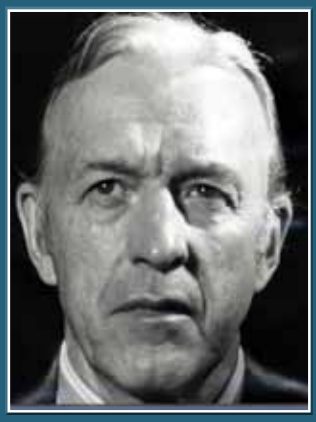
Donald H Gray

1978



G C Lloyd-Roberts

1978



Harold E Kleinert

1980

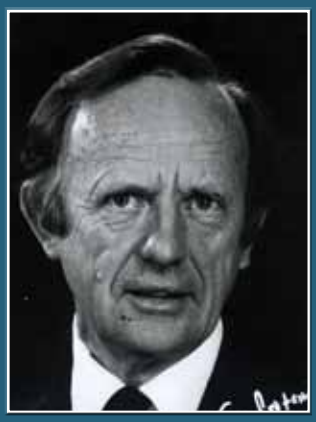
Michael W J Older

1981

MB Lee Visiting Professors

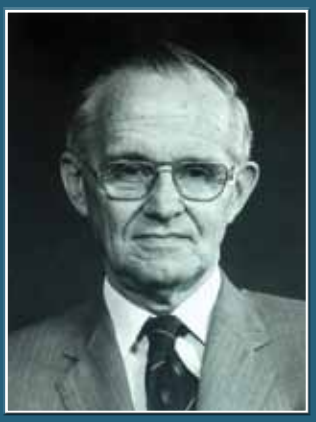
George Bentley

1982



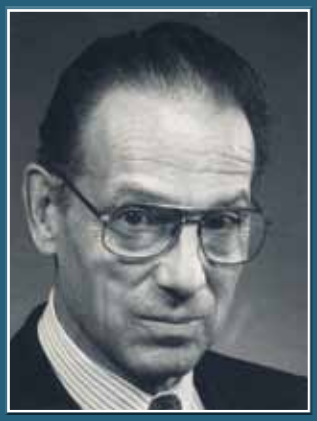
Brian McKibbin

1983



George M Bedbrook

1984

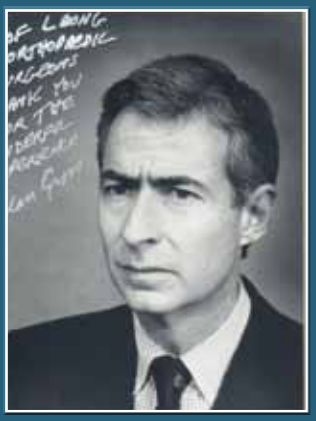


J William Fielding

1985

Marvin Tile

1986



Allan Gross

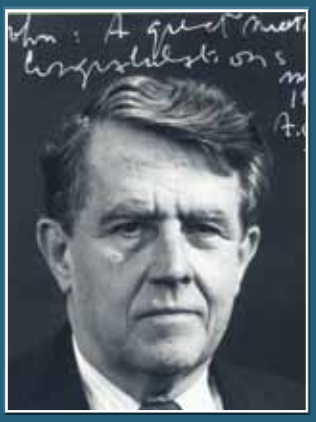
1988

Dan M Spengler

1990

Leslie Klenerman

1991



Augusto Sarmiento

1992

Visiting Professorships

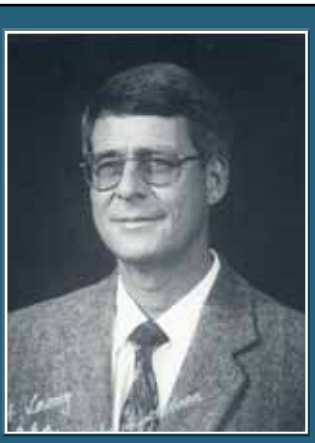
MB Lee Visiting Professors

Roger A Mann

1993

Robert W Bucholz

1994



Ulfrich Mennen

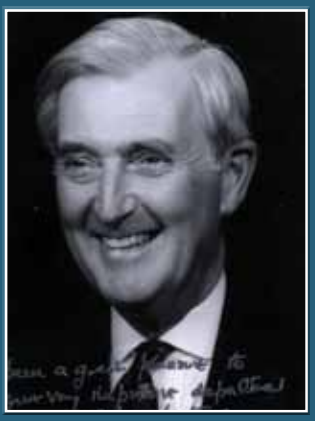
1996

Clive P Duncan

1997

Rolfe Birch

1998



Anthony Catterall

1999

Bruce D Browner

2000

Richard F Kyle

2002

Thomas P Schmalzried

2004

MB Lee Visiting Professors

Tim R C Davis

2005

William J Maloney

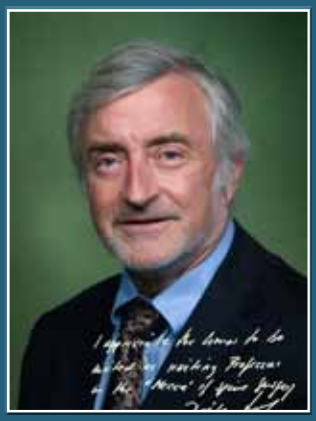
2006

Alain Dimeglio

2007

J W Thomas Byrd

2008



Dieter Grob

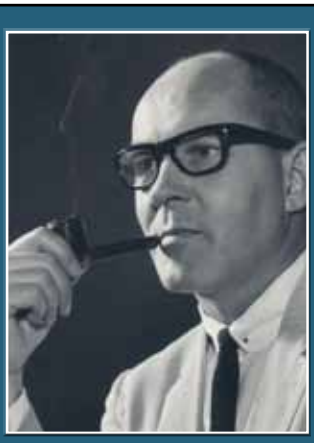
2009

Andrew Haig

2010

Visiting Professorships

SC Fong Visiting Professors

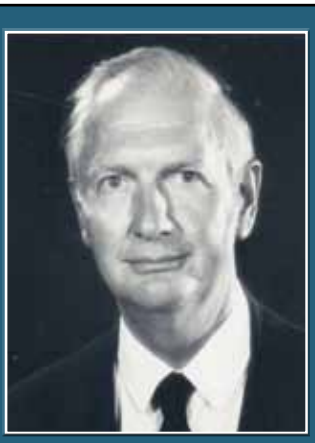


R B Salter

1968

D Lloyd Griffiths

1969

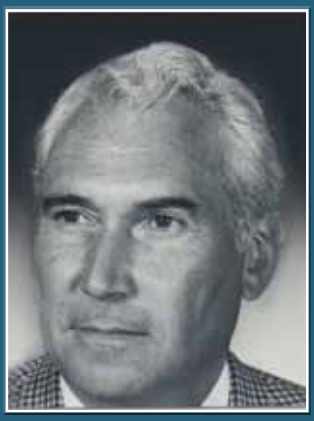


O D Chrismen

1971

Yoichi Sugioka

1981



Robert W Jackson

1982

Naoichi Tsuyama

1983

Wang Shu Huan

1987

Edmund Y S Chao

1988

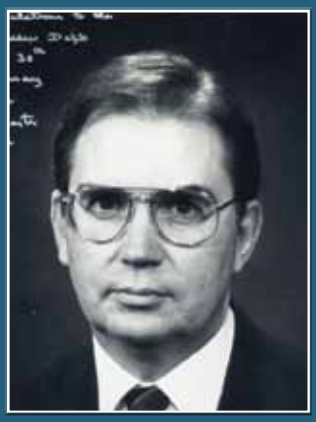
Hirshi Yamamoto

1990

SC Fong Visiting Professors

Robert W McGraw

1991

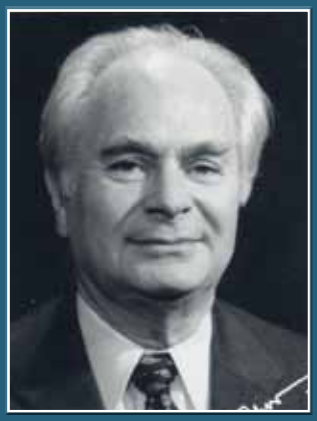


Michael J McMaster

1992

Minoru Sakurai

1993

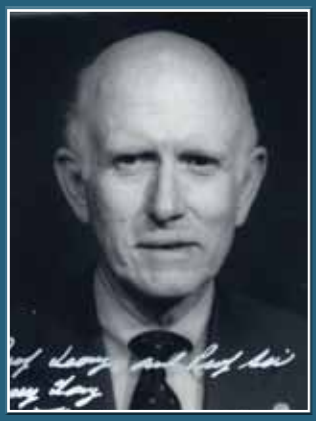


Andrew G Huvos

1994

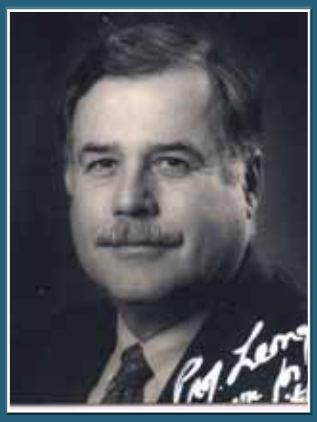
Shoichi Kokubun

1996



Marc Addason Asher

1997



James H Herndon

1999

Kazuo Yonenobu

2000

Hiroaki Fukuda

2001

Visiting Professorships

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Martyn J Parker

2004

Joji Mochida

2005

Qiu Yong

2007

Ruan Di Ke

2007

Anthony Yeung

2008

Eiji Itoi

2009

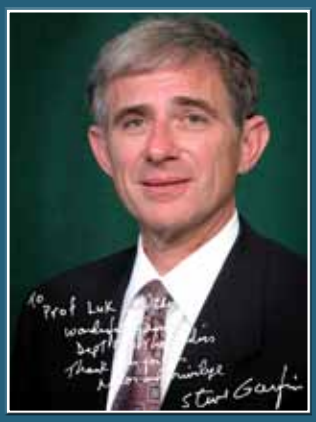
Toshio Fujii

2010

Tam Sai Kit Visiting Professors

Geoffrey Hooper

2001



Steven Garfin

2004

Robert Beckenbaugh

2005

Vincent Mosca

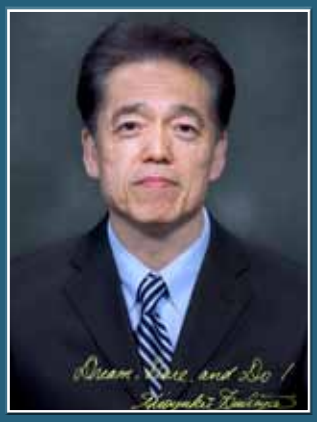
2006

Mohammad M Al-Qattan

2007

Michael W Keith

2008

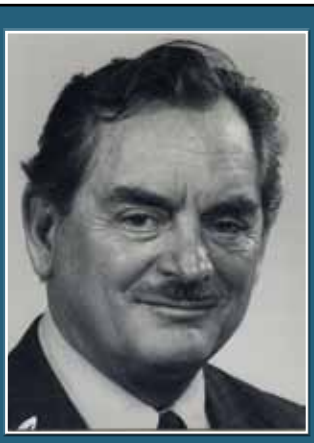


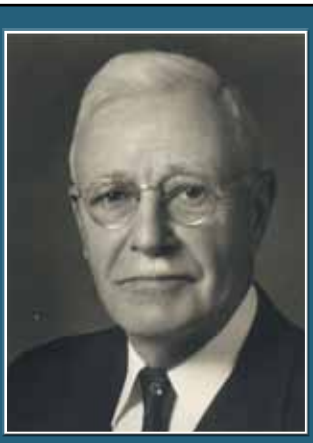
Hiroyuki Tsuchiya

2010

Other Visiting Professors


A F Dwyer


Alfred B Swanson


C L Lowman

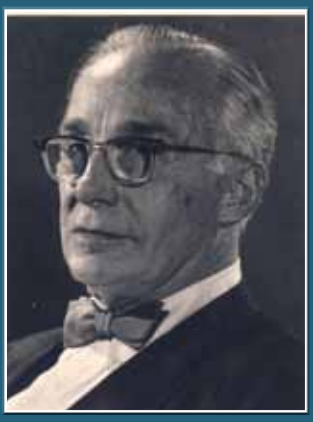

Henry LaRocca


J Boyes


K Hirsch


R Nicholson

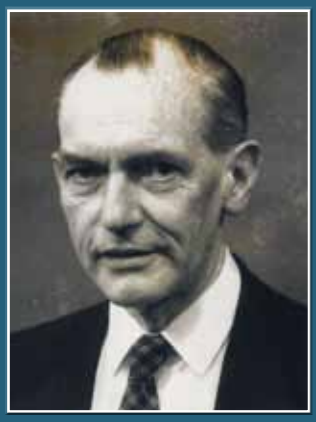

Robert Winter


W Blount

Other Visiting Professors


Sir H Osmond-Clarke


J Perry


WA Souter


Alf Nachemson


C D Huang


D Kashiwagi


David S Bradford

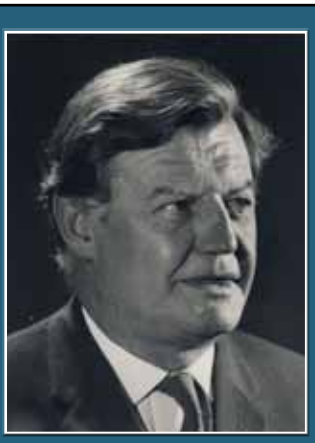

Sean PF Hughes


Seiko Harata

Other Visiting Professors

F T Hoaglund

Ian Goldie



J I P James

R Duthie

Robert M Campbell

Rocky S Tuan

Jaro Karppinen

Visiting Fellows

1961-2011

Department of Orthopaedics & Traumatology

Our visiting fellowship programme started in the early 1970s. Over the years, we have had over 300 visiting fellows coming from different parts of the world to receive training from our department. Many of them are now very experienced consultants or renowned professors in their countries. Many great friendships have started since then.

China

Liao, Wei Ming	Lu, Weijie	Zhao, Zhongyuan	Wu, Jingping	Wang, Yizhong
Tu, Yuan-Kun	Ma, Weihua	Zhou, Laixi	Zheng, Fengyu	Xiao, Jun
Yu, Dong	Meng, Qingyang	Zhou, Wenzheng	Hsu, Ken-yao	Yang, Junlin
Zhang, Zhengzhi	Miao, Xiaogang	Zhou, Ziguang	Nong, Luming	Yin, Qi
Cai, Chunyuan	Shang, Yanchun	Zhu, Yinghua	Wang, Yuntao	Yu, Jianhua
Chen, Hailong	Song, Shuchun	Zuo, Jianlin	Wang, Dongjun	Zhang, Kuibo
Cheng, Wenjun	Sun, Haomin	Zhou, Li	Chen, Fei	Zhang, Shudong
Hang, Boya	Wang, Li	Chen, Xiaoliang	Cheng, Guoliang	Zhou, Lihua
Jiang, Xuefeng	Wang, Qun	Du, Junjie	Hao, Libo	Zhou, Quan
Lau, Wai Lit	Yang, Liang	Du, Xiaojie	He, Hailong	Xiang, Zhou
Li, Baolin	Yin, Li	Guo, Yuhai	Huang, Gang	Zhu, Lijun
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Nicomedez, Frederick Patrick Ilustre	Catbagan, Adrian B	Ignacio, Jose Manuel F
Pacaldo, Teodorico Hamoy	Chan, Mario Lao	Lee, Yutan Ellen
Grozman, Samuel Arsenio Munoz	Du, Romeo R	Barlaan, Philip Ian Gesulga
Nicomedez, Frederick Patrick Ilustre	Fong, Hiram C	Balce, Gracia Cielo Estrera
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	Morales, Augustin Miguel	
	Reyes, Leslie M	
	Rivera, Antonio A	
	Rivera, Michael Zaro	

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Jalil, Syed Amir
Masood, Khalid
ur Rashid, Haroon
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Dorr, Lawrence D
Early, John S
Girardi, Federico P
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Leung, Anthony Guy
Mattingly, David Alexander
Sammarco, Giacomo James
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Wong, Christopher Matthew

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Ichikawa, Shiro
Kawahara, Norio
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Tanaka, Yasuhisa
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Nwadinigwe, Cajetan
Onyemaechi, Ndubuisi Onu Chukwueloka
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Gbadegesin, Sulaimon Ayinde Ayoola
Yinusa, Wahab
Alade, Clement O

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Lau, Choon Ping
Loke, Wooi Pin
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Soon, Hock Chye
Tan, Chun Ee
Wong, Chung Chek
Choong, Leong Tong
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Lee, Kam Chor Wilson
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McNicol, David
Mills, Craig A.
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Darwish, Nagy
Elfiky, Tarek Anwar Mahmoud
El-Adwar, Khaled Loutfy
Aly, Tarek Ahmed Mohamed
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Cheng, Yuh Min

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De Pedro Moro, Jose A

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Zhao, Qing
Ohlin, Acke
Sturesson, Bengt

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Borkhuu, Battugs

Iran

Davami, Bahman

Iraq

Kalamchi Ali

Myanmar

Soe, Nyunt

Romania

Arvinte, Dan

Singapore

Wong, Merng Koon

Saudi Arabia

Al-Othman, Abdullah

Poland

Podporska, Joanna Helena

Netherlands

Gardeniers, Jean W M

Ireland

Chan, Daniel Nim Cho

Bulgaria

Tokmakova, Keti Petkova

Libya

Elathram, Tarek Ibrahim

Austria

Schandelmaier, Peter

Sudan

Ahmed, El-Nasri Biker

Rudolf Bertagnoli

I was pleased to exchange newest scientific knowledge with the colleagues and discuss topics related to spine surgery. I wish the University in this world with increasing global interaction a good participating role in scientific research and development.

Amir Jalil

I must thank the Head of the Department, Dr WY Ip and Dr Boris Fung for giving me the opportunity to come to the department so that I can improve my surgical skills. Thanks for all the wonderful and pleasant memories.

Bruce Low

I worked with Dr. Louis Hsu and Prof. John Leong doing children's orthopaedics including complex spinal corrections.

Daniel Chan

I still remember all the questions that Prof. Leong and Prof. Chow asked at the Wednesday morning DK Grand Round, particularly the ones I did not have any answers to!

Loke Wooi Pin

It is my great honour and pleasure to be part of the team in this excellent centre with ongoing source of inspiration.

Siow Yew Siong

I spent 14 months in Hong Kong. I was a spine fellow at DKCH for 6 months from Jan 2001, then a teaching staff until June 2002. Those were the best learning period of my life. I value the excellent and marvelous apprenticeship with the best teachers and colleagues I have ever known.

Lawrence Dorr

I was so impressed with the knowledge, skills, and enthusiasm of the faculty. The academic discussions were superb. The social hospitality shown to me was the best. I have fond memories.

Acke Ohlin

Khaled Loutfy El-Adwar

Richard Lander

During the fellowship my wife, Elizabeth, and my two young children, Chris and Andrew, were accommodated in an apartment on the top floor of the main clinical block at the DKCH. This was an exciting time in my career and I am always grateful for the clinical experience, the excellent teaching and the fellowship that we experienced. I have always felt that the opportunity to work in Hong Kong was a great honour and we are grateful for that opportunity.

Wang Qun

I am very glad to be able to work with Prof. Chiu and his team. They are very friendly, knowledgeable and skillful. Not only have I learned the operative skills, I have acquired a more thorough understanding of joint replacement…The cocktail therapy for pain control is impressive and effective! The patients can perform physical exercise early without pain. The experience I have gained is very rewarding for my work in the future.

Naveed Wazir

It gave me a lot more pleasure to pen down few words being a proud fellow of DKCH from Sept 2005 till Feb 2006. During my stay beside learning about spine and clarifying my basic concepts from dedicated team like Prof. Keith Luk, Prof. Kenneth Cheung and Dr. YW Wong. I along with my Iranian paediatric fellow and Turkish spine fellow enjoyed a lot both good and hard times. The year end was marvelous by celebrating Christmas in DKCH and later by the grand parties. We had build such a strong connection that wherever I go for spine meeting, I will first look for Prof. Luk and Prof. Cheung. 95% of the time I would manage to see and greet at least one of them. Back home any problems regarding spine problems, I always seek help from Prof. Luk and amazingly each time the solution will appear on my Desktop.

Peter Wilde

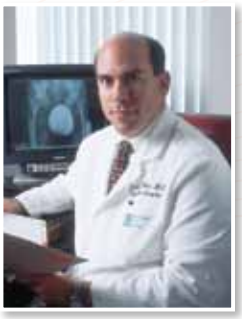
My time at Duchess of Kent Children's Hospital was extremely enjoyable. I worked under the direct supervision of Dr. Eric Ho, Dr. John Leong and Dr. Keith Luk.

MJ Saji

It was a great learning experience for me to work with Professor John Leong, Professor Keith Luk and their team. I learnt a lot in the complex management of differentially abled children. The ward rounds, the academic activities and the operations were of the highest standards.

The work of the support staff including Physiotherapy, Occupational therapy department and the exemplary nursing staff did leave a lasting impression on me.

My experience there helped me set up a unit exclusively for physically and mentally challenged children called the Unit of Hope at St. John's Medical College & Hospital, Bangalore.



James Bono

Juan Alejandro Legaspi

AM Owoola

I was able to gain tremendous amount of knowledge from other colleagues both at DKCH and QMH. I was also particularly impressed by the extreme friendliness of the Chinese people both within and outside the hospital. This period has made a great impact on my career and would therefore remain indelible in my mind forever.

Agustin Miguel G. Morales

Queen Mary Hospital and The Duchess of Kent Children's Hospital hold a special meaning in my professional life. In the halls and wards of these hospitals, my career as an orthopaedic spine surgeon was forged.

And so with fondness and gratefulness, I wish your institution the best for years to come. Congratulations!

Haroon ur Rashid

The fellowship experience at HKU has contributed significantly to my development as a hand surgeon. I would like to thank Drs Ip, Boris, Frankie Leung and Willium Lu for their help during my fellowship. I still remember the trail walk with Prof. Chow. Prof. Chow is a wonderful person and is so keen to guide me for even very small things like calling home from HK.

Wahab Yinusa

I was a fellow in Pediatric orthopaedics from January to July 2001. I feel proud to say that I enjoyed my stay academically, morally and socially. I was impressed by the high level of discipline in the department. All activities were carried out promptly and the attitude of the doctors to their work and patients were commendable. Trainees could not afford to miss Prof. Leong's Saturday ward round without being called to order.

Christoph Sommer

I had a highly memorable time six years ago. During the AO Course Hong Kong, which was one of the first worldwide dealing with the topic: "Minimal invasive surgery in fractures fixation", I was amazed about the great interest of all of the participants and the kind collaboration of the well-educated course faculty. The most memorable situation was the life surgery I was allowed to perform on a female patient with humerus fracture. I remember an impressive city with friendly and open-minded people in a (for me) exotic country far away from the Swiss Alps!

HN Diwaker

There were plenty of patients. The hospital was extremely modern with all the latest gadgets. Prof. Chow was extremely helpful. He helped me a lot in completing four research projects and he ensured that all the fellows should attend all the Clinical Seminars, Conferences, Discussion Meetings and present papers. This has helped me a lot in getting tremendous amount of exposure in the field of Hand Surgery.

Honorary Teachers

1961-2011

Department of Orthopaedics &
Traumatology

Honorary Teachers

Honorary Clinical Professor

Chow, Shew Ping

Fang, David

Honorary Professor

Leong, Chi Yan John

Karppinen, Jaro Ilar

Zhang, Ming

Honorary Clinical Associate Professors

Chan, Chi Wai

Chan, Nik Hang Vincent

Chan, Ying Kei

Chang, Yun Po

Chen, Erh Heng

Cheng, Hung Fai David

Chien, Ping Eric

Chow, Wang

Chun, Siu Yeung

Fung, Kwok Keung Boris

Ho, Sheung Tung

Ho, Yuen Fong

Hooley, John Daniel

Hsu, C S Louis

Ip, Fu Keung

Kou, Sio Kei

Kwok, Tik Koon

Lam, Ying Lee

Lam, James Joseph

Lau, Pui Yau

Mak, Kan Hing

Mok, Wah Hong Daniel

Ng, Tze Pui

Ngai, Wai Kit

Poon, Kai Chung

Poon, Tak Lun

Tang, Wai Man

Tsang, Wai Leuk

Tse, Paul Yun Tin

Wai, Yuk Leung

Wong, Yat Wa

Wong, Yiu Chung

Wong, Wing Cheung Jimmy

Wu, Wing Cheung Stephen

Yeung, Sai Hung

Yip, Siu Fai

Yuen, Wai Hong

Honorary Clinical Assistant Professors

Chan, Chi Fai Samson

Chan, Chi Fat

Chan, Chi King

Chan, Ka Wah

Chan, Ping Keung

Chan, Wai Lam

Chan, Wing Leung

Chang, Shao

Chen, Chi Kin

Cheng, Sze Chung

Cheung, Wai Yuen

Chiu, Chi Kit

Chiu, Shin Yeung

Choi, Siu Tong

Chow, Chi Ping Alex

Fang, Christian Xinshuo

Fok, Wai Ming August

Fok, Woon Man, Margaret

Fong, Chi Ming

Fu, Wai Kee

Ho, Wai Yip Kenneth

Hsu, Yung Chak

Hui, Wai Kwong

Hung, Siu Lun, Tony

Kam, Wing Lok

Ko, Joshua

Ko, Put Shui Peter

Koo, Siu Cheong, Jeffrey Justin

Kuong, Yue Ling Evelyn Eugenie

Kwan, Yat Hong Kenny

Kwok, Hau Yan

Kwok, Yau Yan

Lau, Sing Ki Kenric

Lau, Tak Wing

Lau, Yan Kit

Lee, Kin Man

Lee, On Bong

Lee, Po Chin

Leung, Hon Bong

Leung, Ka Hei

Leung, Man Fai

Leung, Yuen Fai

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Lie, Wai Hung Chester

Lo, Hung Kwong

Lo, Che Yuen

Mak, Kin Cheung

Mak, Yan Kit

Miu, Yin Shun Andrew

Mok, Wing Yuk

Ng, Fu Yuen

Ng, Ka Ho

Pang, Chun Hong Ivan

Siu, Kwai Ming

Sun, Lun Kit

Tam, Kin Hing

Tam, Kwok Bun

Wan, Siu Ho James

Wong, Hing Cheong

Wong, Sze Hung

Wong, Hing Cheong

Wong, Kam Kwong

Wong, Kwun Hung Kelvin

Wong, Man Kwan

Wong, Nang Man Raymond

Wong, Tak Chuen

Wong, Tsz Kau

Wong, Wai Kwok Jimmy

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Yam, Sai Kit

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Yeung, Yeung

Yip, Tak Hing

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Dr. Serena Hsueh Chi YANG

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Mr. Gary FANG

Mr. LEE Man Ban

Ms. Grace Yi Man LEE

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Departmental Photos

1961-2011

Department of Orthopaedics & Traumatology

Departmental Photos

Over the last five decades, the Department of Orthopaedics and Traumatology has been fortunate enough to be staffed by an ever-changing collection of dedicated clinicians and researchers. Over a thousand members have granted their time and commitment to this department, and served orthopaedic patients with unwavering enthusiasm. This compilation of photos and names are of these individuals who have left their marks indelibly on the development of this department.

1960s-1980s

AR Hodgson	DHF Cheng	SY Chun	SH Chan	PC Lee	NM Wong	DS Kwan
A Yau	H Yu	T Loy	A Castillo	PS Yeung	P Diamond	DS Lo
A Gardner	HW Ng	TC Leung	A Rivera	R Du	P Lam	EKW Ho
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TC Wong	M Lee	S Fountain	K Wilding	D McNicol	W Chang	P Mayer
TK Smith	P Tsou	PV Seal	KC Shiao	DH Gray	WF Chow	P Webb
TT Chan	P Yeoman	A Kalamchi	KDK Luk	HC Fung	WF Lau	SE Tan
YY Kwok	R Lau	CK Mok	KK Li	HP So	YC So	TF Shum
JCY Leong	RL Huang	CT Kwok	KT Cheng	KW Ng	YL Fung	Y Iwasaku
A Dwyer	S Lim	FT Hoaglund	KW Keung	LW Woo	A Arthornthurasook	YH Ho
D Cheng	S Ng	KC Ting	KW Yeung	M Casey	AD Meredith	YK Lee
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D Lee	SP Chow	P Chong-Leen	NK Chan	MN Kyaw	CW Hun	CO Alade

Departmental Photos

1969

1980s

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D Fung
G Hooper
J Lee
J Leung
KH Ip
KK Tong
KY Shum
LO Chow
MH Lee
N Thiranont
P Cheung
PK Hui
PK Ng
SC Tang
SN Wong
SND Valentine
SW Chiu
T Sato
WC Ip
WK Li
WK Pun
WL Tso

PYT Tse
G Wong
A Poon
ATS Fang
EYH Mok
FK Mark
JF Zucherman
JHK Lau
JKT Lim
KS Tai
LT Lau
OD Yu
R Rowntree
RA Buxton
SC Chow
SC Tse
WC Siu
WJ Grange
WK Ngai
XX Kong
YH Chen
E Ho
KC Chow

KW Chiu
P Wade
PS Siu
RG Hamilton
RV Dominguez
S Choi
SM Li
SP Chan
LP Swanson
WC Sin
WH Chan
WK Lam
WM Chu
WN Tang
S Chow
CK Yung
CO Ng
HY So
JS Chan
JY Sung
K Hsu
KH Mak
KY Lee

L Reyes
R Kwong
SK Kwok
TL Chan
WC Cheung
WK Lun
Y Kwong
W Lee
CC Chow
CS Chan
CW Lai
F Mok
HN Ho
J Lau
J Parker
KC Chan
KW Chu
KY Wan
LC Chong
M Byrne
S Lee
G Bedbrook (Sir)
SS Lay

T Aparisi
TC Chan
WC Chow
WT Wong
YK Ngai
YT Fu
ZM Yan
CM Lo
CS Poon
CY Leung
FC Chan
FK Ip
KC Au-yeung
KH Chan
KW Lie
M Chang-Tor
M Hossain
M Mak
PW Ng
SH Lee
SW Ng
SW Wong
WT Leung

A Lee
CB Tso
CK Cheng
CS Lam
KL Wong
KM Chong
KS Chu
Liu Ke
LS Freedman
M Rivera
MS Binns
P Stalley
S Chan
TK Lau
TL Tang
TM Tsang
WK Lau
YM Yeu
B Low
CW Kam
CY Shiu
D Robbins
G Wang

HK Chow
HK Low
J Cheng
JCH Wong
JJ Lam
K Takata
KK Fung
KS Cheng
MC Lynch
MM Stephens
P Ho
PC Gray
PC Tam
PF Kwok
PKS Wong
PKY Chiu
PY Tse
SH Lai
SS Chung
TF Cheung
WH Lo
WH Wong
WK Cheng

Departmental Photos

1973

1980s-1990s

WL Cheung
YF Chow
YP Chan
YS Chao
YW Fan
CH Cheng
CH Hui
CK Lee
CT Lee
DS Chen
GC Dracopoulos
GL Cowley
I Dos Remedios
JH Xie
KH Lai
KW Lam
L Ferris
LK Lam
N Chen
RO Lander
SCF Chan
SF Wai
SH Ko
SKH Low
SM Chow
SM Chu
T Ming
WH Peng
WK Lai
Y Hui
YH Li
B Fung
EJ Carragee
GW Wong
HC Yeung
HK Chan
IW Nelson
KH Ng
KY Pang
L Shu
PW Cheng
SK Kou
SK Tse
SS Upadhyay
SY Lam
WB Wong
CK Chiu
CY Lo
DR Johnson
F Leung
J Chung
JM Williamson
KL Shek
KM Au-Yeung
KM Chiu
KS Wong
L Chan
LC Cheng
LP Leung
M Chan
Mr D Chow
R Emery
R Hill
SL Li
TC Hon
TL Poon
WL Law
YW Wong
D Chan
HL Kong
KH Yip
KY Chow
P Sell
S Law
SK Ip
G Wang
WH Ng
A Ohlin
A Wong
B Balkfors
CJ Roberts
CN Tang
HM Cheung
HS Chiu
HY Kwok
J Brochwell
J Wong
JJ O'Flanagan
K Cheng
KL Chung
KN Hung
KY Lau
KY Lee
KMC Cheung
MFP Davies
MJ Saji
PH Wilde
PS Ko
SC Lai
SK Lau
T Shikawa
TF Chan
TP Ng
TS Pun
W Chow
WK Yip
WM Tang
WP Yau
WY Ho
YK Chan
A Muliji
AM Wang
C Mills
CC Wong
CH Law
CM Ho
CM Leung
CW Tong
CY Law
D Ruan
HM Tung
KF Kong
M Hafeez
MC Kong
MH Leung
MT Chan
PC Yuen
Q Yin
R Chow
S Lu
SP Yau
TJ Biscoe
TK Ho
WY Ip
YL Leung
YT Hui
CP Ng
HS Chin
LT Choong
M Wong
P Chien
SW Lai
YH Chong
CF Chan
EMH Obeid
Fitsoussi
HH Hung
KF Kwong
KK Yip
KL El-Adwar
T Tejatongvorachai
W Lu
WP Yiu
YL Poon
ENB Ahmed
Kayaanja
RI Oadir
TW Lau
WW Cheung
YK Tang
YS Miu

Departmental Photos

1987

1990s-2000s

A Hussein
B Ng
CH Ho
N Soe
WC Wan
WY Cheung
SF Tsang
KM Lee
LY Wong
S Chan
YC Wun
CH Ho
D Yip
CP Cheng
CW Li
FY Ng
WK Sung
H Tong
K Yeung
KC Cheung
SL Cheung
PH Chung
Y Lam

V Li
YH Yuen
KH Wong
KY Choi
SC Lau
HC Fong
S Srisuparp
CY Chan
S Lam
WK Lee
MY Ng
CK Wai
V Wong
CP Wong
KY Lam
K Lam
WM Lee
SH Ng
SM Tam
YF Chan
P Ho
KC Poon
WF Chan

N Darwish
PCK Lam
SN Cheang
MMY Lam
SY Ma
JCH Wong
MK Wong
YK Lam
CF Chiu
PQ Tuyen
MKW Yang
L Chan
W Chan
WT Chen
WY Lau
SLC Tsang
JKF Wong
KY Lam
V Chan
KC Ng
CL Seto
L Liu
C Nwadinigwe

YL Au
KM Chan
KY Chan
WM Chan
KN Low
HY Ngai
A Leung
R Chow
WY Mak
L Lau
SY Chan
SC Cheng
D Cheuk
A Mak
U Wong
CK Lam
L Lan
WL Choi
SY Chor
WK Ko
YL Sze
KL Yan
Y Yeung

WH Lam
Z Bozinovski
Z Azmaiparashvili
N Cheung
SN Fu
E Hui
EMT Hui
R Wong
K Yuen
T Wu
J Poon
CB Lee
J Cheng
C Chiu
M Mak
KY Poon
J Tsu
B Wong
SY Chor
TF Chow
BFC Weinhardt
JAV Legaspi
MW Tam

S Cheung
C Choi
H Joeng
WK Lo
KC Mak
YK Tang
J Pu
KH Tong
N Budharaja
SM Kong
YY Lam
MY Leung
C Leung
R Tong
J Tsang
CK Hui
P Cheng
I Lai
M Lau
SM Lee
WS Leung
M To
B Lang

YW Chan
CH Lai
M Ho
M Mok
A Chan
C Fan
HN Chan
KW Chan
SY Lui
CY Wong
CC Wong
FPl Nicomedez
KW Leung
MH Khemlani
C Sit
WM Kok
YC Lui
CP Wong
SY Chan
CM Law
MS Wong
W Yinusa
JG Mirpuri

Departmental Photos

1998

2000s

R Leung	W Chui	KH Wong	T Agu	A Ho	KH Leung	T Chan
HW Chan	SY Wong	WF Wan	D Arvinte	J Au Yeung	A Cheung	KL Cheng
J Lam	KC Ho	KL Shiu	P Chow	J Lam	BA Rocha	CX Fang
KW Liu	CW Hui	M Fok	A Wong	V Sriram	PF Royo	KM Wong
KK Wong	YL Cheuk	W Cheng	S Wong	A Chang	A Friedlander	K To
WK Kua	K Chan	KW Tam	E Chow	B Chan	B Au Yeung	SN Wong
O Chan	T Lam	L Merom	WM Chu	CK Chan	KS Cheng	KY Sit
P Chan	WL Loo	T Pacaldo	YC Tse	H Siu	S Lam	LNR Katragadda
YK Lam	KH Ngai	KY Kan	T Tam	L Ng	W Lau	PW Lee
YK Lee	WC Sin	SD Koo	SF Wong	D But	W Seto	H Chan
PY Ng	CH Yan	KP Lee	W Ho	D Lai	D Siu	KF Lee
YC Tang	G Chung	E Shan	C Ng	LK Chan	KH Ngai	KP Tam
YS Siow	KM Fan	SY Yeung	YB Wong	KF Chow	KK Wong	YL Poon
HL Tsu	TY Wong	FL Yuen	KL Cheung	YH Kwok	SC Koo	WS Sit
F Tsang	B Wong	K Wong	SC Chong	CY Cheung	KL Au Yeung	CY Mui
CH Kan	TT Cheung	KL Liu	S Siu	CP Chow	S Chen	MS Liem
A Chu	CK Lo	WK Yiu	SH Wan	C Lee	HC Yuen	CY Cheok
David Ip	P Wan	S Tsang	CY Tso	H Tong	D Lam	KS Chan
E Kwan	CW Chan	J Wang	P Tunggal	MK Wong	J Lau	P Cheung
B Schlaikier	HN Chan	J Chan	WL Yip	V Mok	S Lam	EE Kuong
MS Ng	KC Chan	HB Leung	YH Ling	M Sun	WF Ho	SW Lau
E Wong	WH Lie	CS Chong	YC Lui	CH Kong	S Wong	J Man
NY Poon	S Tong	CK Cheung	V Leung	TL Chan	ANB Suero	P Woo

Departmental Photos

2000s

B Kong	X Wang	YH Wong	JK Ip	WP Loke	KK Ma	YW Cheng
ST Borwein	P Hui	SAA Gbadegesin	CH Wong	SK Ganesan	S Grozman	CT Chung
CW Li	WK Chan	T Kollmar	HC Soon	AS Don	CE Tan	KY Kung
PK Tam	ES Yee	CP Lau	HF Ko	W Kwan	J Cheung	W Lai
M Tsang	GC Garcia-Llaver	T Au	S Lam	HF Lam	CY Chow	G Lam
KH Leung	R Fan	D Cheng	GH Singh	A Yung	J Law	L Tee
S Lau	WL Ho	D Ip	SL Yip	B Ho	CK Mak	C Tam
B Davami	SH Lau	HH Tsang	YT Wong	SY Au	KK Wong	YK Yuen
WC Dai	KT Lee	CY Lee	CK Tong	L Lui	S Wong	AM Owoola
NN Wazir	CK Ng	M Leung	HM Tsang	V Chow	L Li	D Cheung
A Senkoylu	KL Wong	TY Wu	S Cheng	A Ng	PK Chan	SL Ho
KY Au Yeung	P Cheung	YL Lai	P Yip	L Sinn	T EL-Fiky	PL Yip
CF Choy	P Ma	J Lee	FY Zheng	S Cheng	CW Chan	WT Kwok
J Chung	J Cheng	W Chan	P Chan	T Chan	TW Chan	SC Lui
I Leung	KO Lam	J Chan	WK Chan	MK Fong	V Cheng	Z Hung
KF Wong	YW Lam	KL Yau	T Pun	WC Lai	B King	J Lau
H So	CC Tam	N Yuen	LY Chung	LY Lam	CY Lee	WH She
YS Chooi	YF Shea	J Chung	B Fang	YF Lam	KF Tang	K Lau
SW Ip	C Lee	E Wong	WS Li	CY Yung	KY Cho	K Kwan
WY Kwan	F Tam	HY Chung	A Lam	E Chow	L Chow	E Yau
CH Kwok	SH Lai	HL Liu	LY Chow	SL Wong	SC Leung	B Borkhuu
WY Lee	YW Ng	D Cheng	TL Ng	B Law	S Vidyadhara	A Lam
DC Lung	R Wei	CM Ma	CK Chen	HY Chan	LB Saw	KH Yee

Departmental Photos

2010

2000s

PA Koljonen
CW Yiu
MY Chan
WY Lai
YS Tam
Y Lau
M Eid
YH Chan
G Lau
P Leung
KK Li
I Wong
CW Yeung
R Chan
I Wong
KC Chan
S Fuego
V Gupta
CH Chan
A Chan
PC Chan
K Leung
CM Sitt

WL Yu
A Fok
L Ngai
T Sweed
YM Cheung
YC Li
A Ng
CC Ngo
J Shum
OM Wong
KK Chan
KW Chu
R Lee
S Wan
P Cheung
H Fu
S Tong
JH Podporska
CL Tse
YS Ng
H Liu
CY Mak
MY Wong

P Chan
CH Pang
WT Lee
HS Lam
CS Li
V Man
C Wai
C Lo
YJ Liu
CT Lau
N Yam
L Leung
M Cheng
KK Ng
J Lam
HN Modi
NOC Onyemaechi
KH Au
E Chan
A Cheung
A Fung
C Shea
CW Tang

D Cheung
KL Kam
YS Lam
TK Lo
NR Mahboobani
KK Yam
CC Yung
S Lam
WL Mo
YK Fong
MY Chan
L Chan
A Cheung
T Elathram
GAC Philips
KL Kung
WM Kwok
C Lam
A Leung
YY Wong
YF Chan
HC Tam
CY Kwok

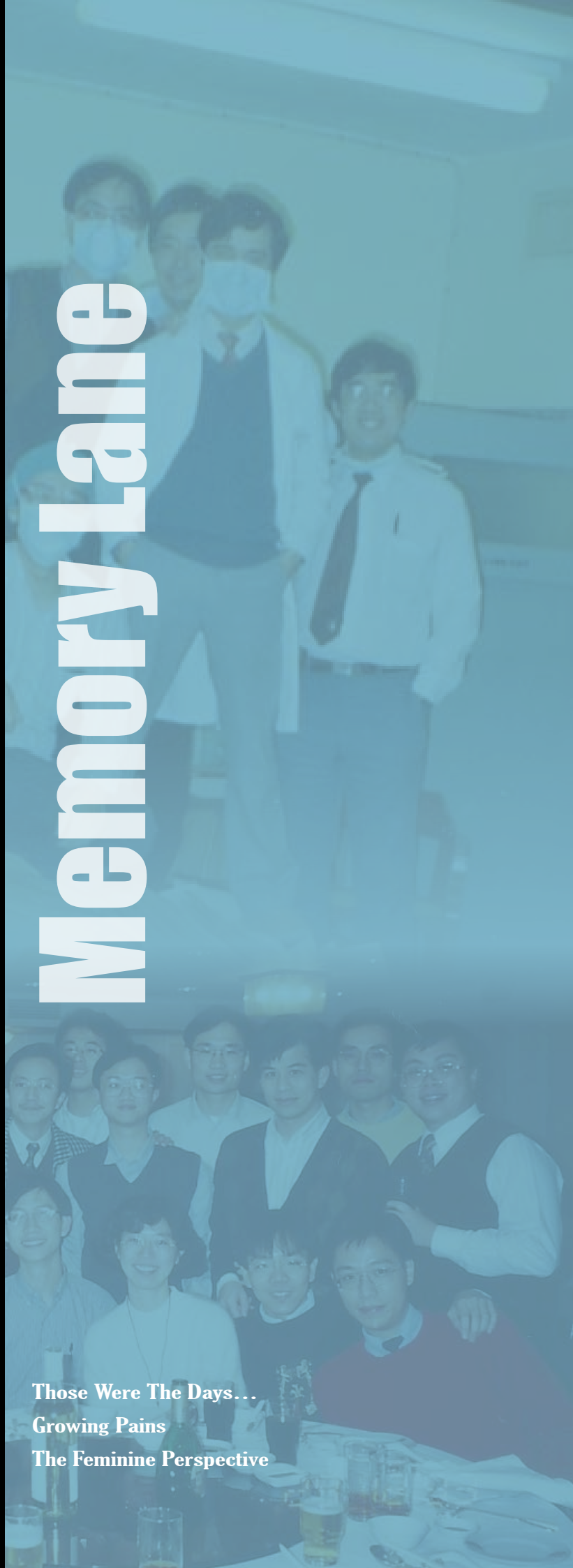
HT Leung
SY Sze
SC Tam
V Tan
CY Cheung
SY Lai
RS Negandhi
VHD Kamath
S Chan
K Fung
HH Kwan
MW Lam
CK Lo
HW Wong
SY Pang
WK Lo
HK Sin
W Ngan
S Sridhar
A Wong
W Yip
R Yau
J Tsang

A Leung
MA Bruzzone
GCE Balce
L Lau
S Lui
SH Sin
N So
CY Wong
PK Kwan

A Walk Down Memory Lane

1961-2011

Department of Orthopaedics & Traumatology



Those Were The Days…

Growing Pains

The Feminine Perspective

Those Were The Days...

In the heady days of the 1970s, the Department of Orthopaedics and Traumatology was quickly gaining a worldwide reputation for excellence in research and novel treatments. Despite the significant implications of the department's research, there were still plenty of lighter moments. The groundbreaking work performed by Hong Kong's founding fathers of orthopaedic surgery went through much trial and error, sometimes to quite humorous effect. Junior doctors were often overwhelmed by the workload and sometimes improvised to keep up. And after a strenuous day's work, the department was known for after hours rambunctiousness. Doctors who participated in and witnessed that era of departmental history have shared with us memories of such times.

I remember a particularly daring clinical endeavor on our part. The junior doctors were loaded with quite a number of fractured hips, and there was no time to call in an anaesthesiologist, a common phenomenon in those days. We all thought we could simply administer our own spinal anaesthesia and quickly fix the hips. We did not kill any patients, but when the anaesthetic chief found out, he made a complaint and threatened to take our licenses away. As a result, Prof. Yau gently suggested that we stop the practice. Y.Y. Kwok should remember this well - he was the mastermind behind all of it!

We were not merely preoccupied with work and training back in those days. One important social skill necessary to becoming an orthopaedic surgeon was the ability to drink, and we all gladly complied. I clearly remember the occasions when we needed to carry a not-so-sober and rather heavy Prof. Hodgson home, dumping him at the door, and quickly running away when Mrs. Hodgson answered the bell. There were also many occasions when Prof. Yau simply drank everyone under the table.

Golf was also an essential skill for orthopaedic surgeons. Prof. Yau used to treat us to afternoon tea at the Royal Hong Kong Golf Club at Deep Water Bay after sessions of tough spinal surgery. Prof. Yau and Dr. Jimmy Lim promptly nominated those interested to become members. That was certainly one of the most valuable "benefits" of working with Prof. Yau, to the envy of many.

Dr. David CHENG

It appeared to me that not much research was actually performed in the laboratory during that period, although we did occasionally see a Bunsen burner boiling water in a beaker. The junior doctors mostly used the laboratory after work or ward rounds as a place to socialise and conduct non-clinical work. However, there were two colleagues who actually did serious work in the laboratory. S.P. Chow practiced microvascular surgery on the small operating table, isolating, dividing then re-suturing the femoral arteries and veins of guinea pigs. We often jokingly called him 'Ah Chiu making cakes'— Cantonese slang meaning superfluous. We wondered why he bothered dividing the veins and arteries just to restore them to

their original state! But S.P.'s diligence paid off one day when the son of the owner of a noodle factory had his thumb amputated by one of the machines when I was on call. S.P. successfully did this first thumb replantation at Queen Mary Hospital. Another person who performed serious research in the laboratory was the visiting Professor Hoaglund from Vermont. I could not figure out how he gathered so many pelvic bone specimens for his primary osteoarthritis research. One day I teasingly asked if he dug up all those specimens from the nearby graveyard in the middle of the night and he replied, "Young man, if I find that I don't have enough specimens, I will ask Professor Hodgson to make you do just that for me."

Dr. Siu Yeung CHUN

I can recall many memorable medical events. Prof. Hodgson performed the first total hip replacement in 1970, using the anterior approach to the hip. The original paper sat on a trolley near the operating theatre table for reference. I had the honour of holding the patient's leg during the operation. I also assisted Dr. Harry Fang when he performed the first trans-oral C1-2 cervical fusion procedure. It was difficult to follow the procedure because of the small size of the patient's mouth. A few weeks later, the patient actually coughed out the screw used for fixation. Prof. Yau once demonstrated that he could perform pin and plate fixation of femoral neck fracture by local infiltration with 1% Lignocaine on a doctor's elderly mother. During our hammering and drilling, the lady repeatedly reminded us that she was conscious and responding to stimuli!

There were also numerous non-medical misadventures. I remember a House Officer once rather scandalously invited a patient to an evening dance party. She was a pretty television starlet, who had shoulder joint tuberculosis that we treated by debridement. He was lucky not to have his license revoked, simply because Prof. Yau decided not to take any action against him!

In those good old days, we would have lunch at Tai Tung restaurant every Friday, served to us by attractive waitresses. All successful fellowship examination candidates would treat us, and make sure we were well supplied with wine and spirits during those meals. Many got quite drunk, and I'm sure everyone has funny stories to tell from those occasions!

Dr. Yau Yan KWOK

Growing Pains

As many interns can attest, the Department of Orthopaedics and Traumatology is known for its rigorous training programme. Not only do they endure long hours of work, but trainees are held to extremely high expectations. Although those undergoing training often find themselves ready to give it all up to pursue an easier specialty, those who have discovered the proverbial light at the end of the tunnel agree that the long months of hardship and unique challenges have shaped them into the doctors they are today, and have created an incredibly close fraternity of orthopaedic surgeons.

The "University Orthopaedic Unit" was a unique training field for the determined, assertive and empathetic orthopaedic surgeons. Everyone who has worked there no doubt treasures the experience of learning from patients with difficult clinical problems, from our respected seniors who knew so much and demanded even more, and from fellow colleagues as we matured together. During my years as part of the UOU I was truly a member of a fraternity striving to better serve our community.

Dr. Ying Kei CHAN

Colleagues of my generation who worked as trainees in the early 90s would remember the good old days when clinical conferences were held in Queen Mary Hospital and the Duchess of Kent Children's Hospital every Wednesday and Saturday. What made the conferences especially exciting were not so much the clinical cases but the critical approaches taken by the 'Four Great Orthopaedic Kings' of the era— Prof. J. Leong, S.P. Chow, D. Fang and K. Luk. Any novices in the trade had reasons to fear the rigorous clinical training they had to endure and the depths of knowledge the well-intentioned 'Kings' relentlessly demanded. Anyone who came out of what was commonly referred to as the 'Shaolin Temple Alley of Death' intact would be considered the hero of the day. If you could elicit all the physical signs of the patient with the most complicated problems, present your sharpest views while stringently adhering to the 10-second rule in response to the toughest questions supplemented with the bluntest remarks, then you proved yourself truly competent in orthopaedics. This Shaolin brand of 'clinical kung-fu' should be patented and passed on. The training was admittedly stressful and tough, but it provided unusual opportunities for us to polish clinical skills and to analyze and deduce logically under tremendous pressure. I can assure the next generation of orthopaedic doctors that these kinds of growing pains are normal and every young person will grow out of it with time.

Dr. Wang CHOW

Growing Pains

Our training at Queen Mary Hospital was especially strenuous when it was the only hospital running an acute orthopaedic service on Hong Kong Island before the establishment of Pamela Youde Nethersole Eastern Hospital. We started doing emergency operations at about 10 pm and stopped at 6am the next day, ate a good breakfast then headed back out for morning rounds. Elective operations and out-patient clinic till 5 in the afternoon would follow. This was our typical non-stop 34-hour working pattern during on-call days. We were also adequately supervised by our second call at that time. This rigorous work pattern greatly encouraged my surgical skills and decision-making abilities to mature.

Dr. Boris FUNG

"Success cannot be reached without sacrifice and great effort". I am a graduate of the University of Hong Kong and decided to join the department after my internship. This is definitely one of the best decisions that I have made in my life! Certainly there are lots of difficult moments but the department has offered me ample career opportunities to pursue an interest in fracture management and to develop myself as a teacher for post-graduate orthopaedic trauma education both in local and international scenes. As a result, after a brief period as a consultant orthopaedic surgeon in the department, I made the decision to take up a university post instead. I hope younger members of the department would share the same career aspirations to set clear goals and excel. Happy Birthday to our beloved department!

Dr. Frankie LEUNG

In my training days, the department was divided into Teams A, B and C, and the call roster was similar to today's. But back then, you needed to work seven to eight on-call duties per month. There were no luxuries like "post call offs" or compensatory leave. So during particularly long days at the Sai Ying Pun Out-Patient Clinic, we all risked falling asleep in front of the patient before racing back to Queen Mary Hospital in Prof. K.Y. Chiu or "Yat Gor's" cars.

Because there were only three teams, it was much easier to gather enough people for lunch at Chi Fu before out-patient clinic sessions. On Wednesday mornings, Team A and Team B would meet at the corridor of the old wing during Grand Round and we would all worriedly interrogate each other about who did and did not survive Prof. S.P. Chow's relentless questions.

Dr. Hau Yan KWOK

Growing Pains

There were many minor industrial hand injuries in the 1980s, and there would be a queue of patients sitting outside the small treatment room in the ward every day. Every patient would be holding a metal kidney dish filled with aqueous hibitane to soak their injured hands in while waiting for their turn to undergo revision amputation or simple tendon suturing. The turnover was so frequent that it was not uncommon to have 3 patients with the same bed number in one night, all of whom would be quickly discharged after the minor procedure. Although we were busy with clinical work, we still had to fulfill the stringent requirements from the team heads. We had to keep our clinical notes tidy and comprehensive, or face rewriting everything. Ward rounds were expected everyday (even on public holidays) unless you were on vacation leave. There was a departmental activity scheduled for one particular Sunday, so I started the ward round at 5am! Later, I was quite surprised to find that I could have Sundays off when I started to work in Tuen Mun Hospital!

Despite the hard work expected of us, one was presented with the opportunity to really develop crucial surgical skills in the University Orthopaedic Unit if one could demonstrate logical reasoning and show preparedness. I am so grateful to the professors and the seniors who have given me this opportunity to actualise my interest in spine and trauma surgery.

Dr. Wai Kit NGAI

During my 11 years at UOU, I was lucky to have learned directly from various mentors. Prof. Chiu personally supervised me to fix a patellar fracture and perform DHS when I was his house officer. Many years later, he taught me total knee and total hip replacements at Grantham Hospital. Dr. F.K. Ip returned to the hospital in the middle of the night despite not being on call, and showed me how to fix a paediatric supracondylar fracture of the humerus by cross K-wires. In an afternoon session, Dr. W.K. Ngai supervised me to excise 2 or 3 wrist ganglia at TWH after the MBBS clinical examination. Prof. Chow taught me to correct swan neck finger deformity in a man with rheumatoid arthritis. Prof. Luk supervised me in performing the release of a contracted knee and fixing a humeral

fracture nonunion with a broad DCP using autograft from the iliac crest. Years later, coincidentally in the same operating theatre, he oversaw my first lumbar ASF using tricortical autograft harvested from the same region. Shortly before I moved to North District Hospital, I had the chance to assist Professors Leong and Cheung in performing a posterior lumbar interbody fusion on a very tall gentleman. Upon tightening of the construct, even the longest cross-link rod was still too short by a few millimetres. I am so grateful to them for accepting my suggestion to place the connectors medially instead of laterally.

Dr. Wah Bong WONG

I was responsible for taking care of patients with hand problems when I first joined the department. Many operations, such as toe-hand transplantation and free vascular flap coverage, were fascinating but too difficult for me. Most operations took a long time but residents were regularly rewarded with free lunches and even free dinners. There was no structural training programme before the era of HKCOS. However, residents had vast opportunities for surgical training. My record was doing and assisting 17 operations within one on-call day! Although life was hard, it was fruitful. I believe that it was the huge amount of work that allowed me to mature both in surgical skills and clinical experiences.

Dr. Yat Wa WONG

The Feminine Perspective

Although traditionally known as an all-male fraternity, there are a multitude of female orthopaedic surgeons in the Department of Orthopaedics and Traumatology today. On top of the long hours of surgery that is expected of any surgeon, orthopaedic surgeons are also required to perform physically strenuous tasks. Hence, female orthopaedic surgeons are subjected to unique challenges that their male colleagues might not share.

Nobody believed that I would have the courage to join the all-boys' club at Queen Mary Hospital until the moment I entered the medical officer's room in the Department of Orthopaedics and Traumatology. Although there were no lack of female doctors in the department, they were still few and far between. I still remembered the look on my male colleagues' faces when they saw me. Luckily that was limited to my first encounter with them. Over the years, I did not have much problem in fitting in. I am even organizing the second basic science course for the orthopaedic trainees in Hong Kong now! In fact I should say being a member of the fairer sex has given me some advantages -- for one thing, I did not have to join the long queues outside the men's washroom in international symposiums!

Dr. Margaret FOK

Entering this department six years ago, well-meaning counsel all around warned me of the rough manners of the goons who were soon to become my colleagues. As much as I endeavored to maintain the cool façade of an idealist who did not care for ancient prejudices, I was secretly petrified. As the first few months of terror and fascination gradually wore off, I was pleasantly surprised at the quality of characters who surrounded me each day at work. Fellow residents shared in the toils of being a trainee, while seniors inspired me to learn about the vast range of musculoskeletal disorders. The further I dove into orthopaedic surgery, the more I discovered a field that continues to amaze and reward me daily. Now that the dust from passing my fellowship examination has settled, I look towards the future with anticipation. I hope that new colleagues entering the department, male or female, will embark on a similar adventure as I have.

Dr. Evelyn KUONG

The Feminine Perspective

Impressed by the harmonious working environment of the department, I decided to choose orthopaedics as my ultimate field of medical training. Nurtured by Prof. John Leong's liberality and conscientiousness, I luckily survived all the tests and finally won a golden ticket to enter into this traditionally male-dominated field.

By being receptive to the merciless but heart-felt criticism from Prof. S.P. Chow, I learned to be especially serious when treating patients and give extra respect to my specialty. I gained the self-confidence to overcome hardships ahead thanks to the encouraging remarks and friendly guidance from Prof. Keith Luk.

I was so lucky to have been embraced by many "big brothers" who so readily accepted me as one of them – I could share the brotherhood's interests and language and almost walk with them into the male changing room. I particularly remember the camaraderie of shared midnight meals with all of the men after emergency surgeries.

Dr. Yeung YEUNG

Looking back at my years in the "University Orthopaedic Unit", I can say with certainty that it has been an amazing journey. It was life-changing for me to go from being a Hospital Authority doctor to a member of the University of Hong Kong. Many warned me about the great challenges I would face, and told me that the endeavour was a risky one. But thanks to my mentor, Prof. S.P. Chow, this leap of faith gave me the opportunity to become a hand surgeon.

The department has proven to be a caring workplace, accommodating both my career development and my family life. I am very grateful to my colleagues for their generous support when I took long leave of absence when I gave birth to my third child. I am so lucky to be in a medical workplace that allows for balance of work and family.

Dr. Wing Yuk IP

Editorial Board

Message from the Chief Editors

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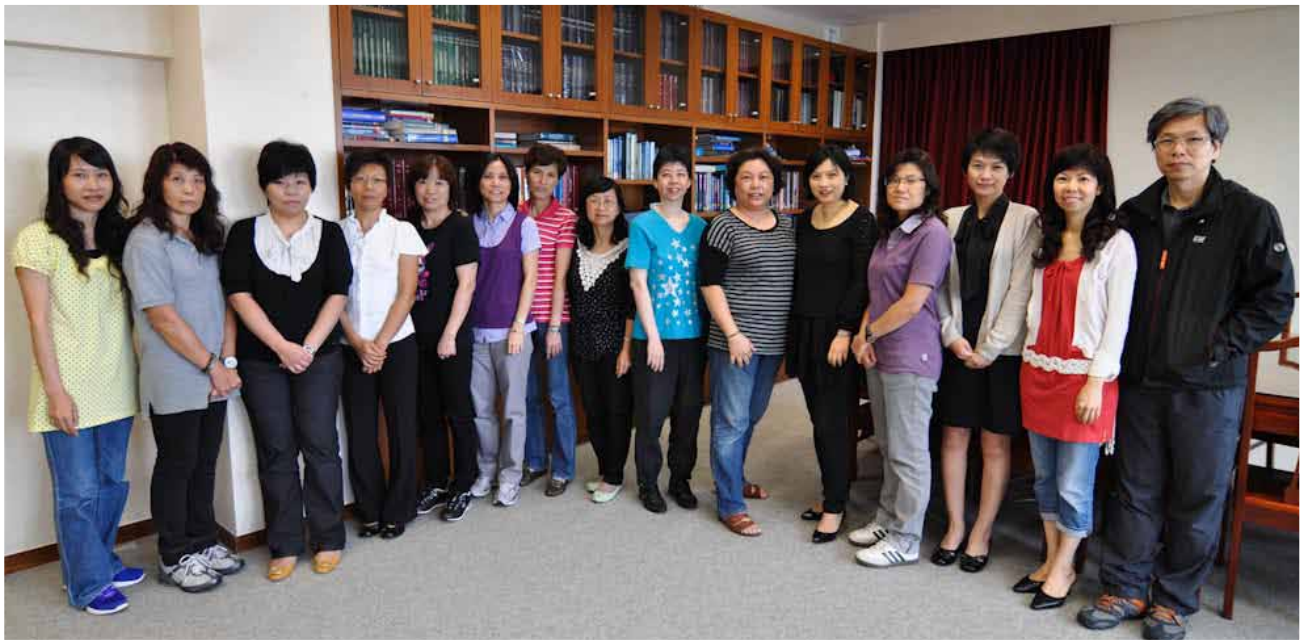
Dr. Richard Lee, Dr. K.C. Mak, Dr. Terence Pun,
Dr. Dennis Yee, Ms. Sonia Li, Dr. Vivian Tam,
Dr. Michael To and Prof. Kenneth Cheung.

We would like to thank Prof. S.P. Chow, Prof. David Fang, Dr. Louis Hsu, Prof. John Leong, Prof. William Lu and Prof. Keith Luk for providing us with all the necessary information about the department's development in the past 50 years. We are also indebted to the Society for the Relief of Disabled Children, Alice Ho Miu Ling Nethersole Charity Foundation, and the University of Hong Kong for supplying valuable historical pictures. The department's administrative and supporting staff were invaluable for their hard work and dedication. Last but not the least, we would like to thank Ms. Sonia Li and Dr. Vivian Tam for the extra hours they put into researching the history of the department and for their contributions to the graphic design of the book. Without their support, the compilation of this Golden Jubilee Anniversary Book would not be possible.

Prof. Kenneth Cheung and Dr. Michael To



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Li Ka Shing Faculty of Medicine

The University of Hong Kong

This cover was designed especially to commemorate the 50th anniversary of the founding of the Department of Orthopaedics and Traumatology. Various design aspects reflect particular standout elements of the department.

Within the large number 50 on the cover is a mosaic of pictures selected from the department's illustrious history. Not only do these moments captured on film lend the cover vibrancy and color, these pictures also depict events and individuals that reflect the course of the department's development over the last half century.

Below the number 50 is a slogan that represents the overriding theme of the department's 50th anniversary. The department's history was indeed an inspiring one, but there should also be a determination to create an even more impressive future in addition to celebrating the glorious past. Last but not least, the golden font of the motto was chosen to honor the 50th anniversary, or golden jubilee of the department's establishment.

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