



# Department of Orthopaedics & Traumatology Queen Mary Hospital The University of Hong Kong Medical Centre **Newsletter**



July 2006

## Orthopaedic Rehabilitation

By Dr HY Kwok  
Associate Consultant

Orthopaedics does not only start after the surgical cut, nor does it end after the wound closure. The Orthopaedic surgeons must envisage the bringing of the patients back to their state of optimal function, through a diligent assessment, an expertly performed operation, and a concerted rehabilitation program. Many a time rehabilitation is an important tool in the specialty of Orthopaedics, and it can be as useful as a dexterous operation.

Rehabilitation is a special area of medical practice, traditionally concerns with the problem of the severely disabled, and with the task of restoring them to a place of independence and dignity in society. The scope of the problem has been changing, with the increase in complexity of many orthopaedic conditions, and the emergence of new techniques and methods in treating those patients with impairment after a disease or injury. It is not only the concern of the patients to preserve their function after the disease, but a matter of successful rehabilitation so that they can return to a gainful occupation, a purposeful recreation, and most importantly, to achieve the greatest level of independence and participate fully within their community. With the increase in specialization in different areas of health profession, we require a care team consisting of different disciplines, to deliver the most effective, comprehensive and goal-orientated management to the patients. We shall take an example of a patient after an

amputation. In order to regain full function after the orthopaedic surgery, the patient would require the prosthetists to fit him a new prosthesis. He would need a physiotherapist to guide him through the different phases of training. He would require an occupational therapist to help him to adapt to the new life style. He will need the orthopaedic surgeon to take care of the post-operative complication, if there is any. He may need a clinical psychologist for counseling of the psychological stress. Last but not the least, he would need a rehabilitation specialist, with his role to guide the rehabilitation process, and to coordinate and communicate between these different teams. The rehabilitation specialist would evaluate and set the goal and treatment plan for the patients. His role is indispensable in the modern interdisciplinary approach to rehabilitation management (fig. 1).



Fig. 1

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With this development and advancement of the specialized skill in the different disciplines of rehabilitation, Orthopaedic Rehabilitation become a distinct subspecialty, with an aim of a multi-disciplinary approach to manage some defined groups of disease entity. The Hong Kong College of Orthopaedic



Surgeon echoes with that vision, and the Subspecialty of Orthopaedic Rehabilitation was set up in 2004. To be a fellow of this subspecialty, the Orthopaedic Surgeon requires an additional one year of post-fellowship training in an accredited training centre. This can ensure that the fellows would acquire the specialized skill in orthopaedic rehabilitation, achieve a high standard of qualification, and at the same time work with a high level of ongoing experience.

Our Department has a well-organized Musculoskeletal Rehabilitation service after its reform into subspecialization divisions in Jan 2005. The service is led by a full time musculoskeletal rehabilitation specialist, to coordinate and to provide service for the rehabilitation of patients under the Orthopaedic Specialty. The team works closely with the other seven subspecialty divisions, namely Division of General Orthopaedic and Oncology, Division of Hand and Foot Surgery, Division of Joint Replacement, Division of Paediatric Orthopaedics, Division of Sports and Arthroscopic Surgery, Division of Spine Surgery, and Division of Orthopaedic Trauma. Besides general orthopaedic rehabilitation, there are groups of patients requiring special rehabilitation needs, e.g. spinal cord injury patients, amputee patients, chronic low back pain patients, and patients after complicated trauma. These groups of patients would be transferred to MacLehose Medical Rehabilitation Centre after their acute orthopaedic problem being settled, to receive a period of intensive rehabilitation treatment in the Centre.

MacLehose Medical Rehabilitation Centre (MMRC) is a specially designed Rehabilitation facility that provides service and training in Orthopaedic Rehabilitation (fig. 2). It is one of the three designated spinal cord rehabilitation centres in Hong Kong as well as a designated center for amputee rehabilitation serving the western half of the Island. Groups of dedicated physiotherapist, occupational therapist, prosthetist and orthotist, clinical psychologist, dietitian, speech therapist,



Fig.2

and medical social worker are working as a team using an interdisciplinary approach for treating patients with complicated orthopaedic conditions requiring special rehabilitation. The rehabilitation will be a dynamic process, considering the individual needs and limitations. There will be active participation from both the patients and their family members, in order to ensure the best rehabilitation outcome (fig. 3).



Fig.3

Chronic low back pain is a good example of how the principles of orthopaedic rehabilitation work. Back pain is a common problem. The lifetime prevalence of having low back pain is as high as 50% to 70%. In our service region, i.e. HK West Cluster, 5% of the low back pain patients will go to a chronic phase with back pain more than three months after an acute episode, despite streamlined and active physical treatment from the start. Chronic low back pain is a distinct entity of disease, and its behavior has gone beyond a simple dysfunction of a particular anatomical site in the spine, the so-called pain generator. Besides the complex physical cause, there would be a complicated psychosocial interaction that would affect the response to conventional treatment. Through modern evidence based medicine, we understand that a multidisciplinary approach to chronic back pain is one of the few to be successful to bring the patients back to

a functional life style, compares to other non-multidisciplinary inpatient or outpatient treatments. The Centre of Spinal Disorders in the Duchess of Kent Children's Hospital and the MacLehose Medical Rehabilitation Centre have jointly adopted a functional restoration program to treat patients with chronic low back pain. The approach would aim at minimizing the symptoms of the patients with reconditioning of their physical capacity and back mechanism. This is done through a series of training with restoration of joint mobility, muscular strength, endurance, back condition, as well as cardiovascular fitness. The program would train the patients through a series of specific functional tasks, such as lifting, bending, twisting, and tolerance of prolonged static position (fig. 4). It serves to improve the awareness and acceptance of the patients' back symptom, and through the above physical and occupational training, the patients' functional level could be improved, and that would allow them to return to some gainful occupation.

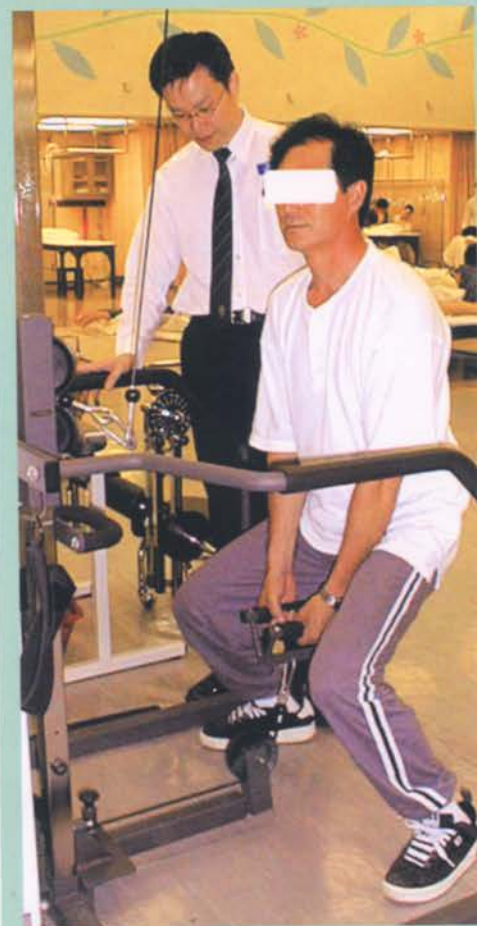


Fig.4



The Chronic Back Pain program was started in 1998, and had already treated more than a hundred patients who fit into our treatment criteria (fig. 5). Firstly, the patients would be assessed thoroughly by the spine surgeon, making sure that they would be benefited from this multidisciplinary functional restoration training. After that, the patients would go through a 14-weeked rehabilitation program. There would be a physical conditioning phase to start with, the work conditioning phase to follow, and finally the work readiness phase. Patients would be assessed continuously during the program, and there would be a detailed evaluation of their physical, the occupational, and the socio-psychological parameters in the beginning, the middle, and the ending phase, as well as six months after the program. The data obtained would be helpful in planning

the subsequent phase of training, as well as giving a realistic work plan for the patients in order to return them to a more productive lifestyle.

The whole program is a labour intensive treatment protocol, whilst the results are encouraging. We had studied on 85 treated patients and they could demonstrate a significant improvement in the endurance of trunk flexor, as well as their lifting capacity after the program. Back pain is a subjective symptom to be assessed and that would relate to the amount of training of the patients. A lasting effect was found and the resting pain was significantly reduced at 6 months after the program. At the same time, 72% of the patients could return to a working status afterwards. If workman compensation of the injured workers is of concern for some, our data showed that 68% of the patients would be able to complete the medical assessment board process in 6 month time, taking into consideration the time required for the arrangement would be two months on average. The program shows an abiding effect on the patients' symptoms with improvement in the perception of resting pain and reduced disability. It is satisfactory in maintaining the functional capacity and returning the patients to the work force. It would be an important treatment program in

dealing with patients who has chronic back pain and unable to return to duty, who may be requiring prolonged medical attention.

As shown in the example of patients with chronic back pain, the musculoskeletal rehabilitation would adopt a multidisciplinary approach to restore the patients' capacity, and to achieve their optimal physical, psychological, social, and vocational potentials. It is a specialty with special skills, and is a unique branch of Orthopaedic practice developed to meet with the considerable advancement in recent years to take care of a group of patients with specific needs. The subspecialty is in its budding phase. Despite its advancement in techniques, the sub-specialty is still facing a lot of challenges, which is in common to the other orthopaedic specialties. It would be the vision of our Department to create an environment for the betterment of Musculoskeletal Rehabilitation in teaching, research, service and training to the highest value. We hope to provide a patient-orientated, seamless and holistic service, through an integrated multidisciplinary approach. We are endeavored to set our service to the highest standard to meeting the challenge in the coming millennium, and it would be important for this prevailing and flourishing subspecialty.

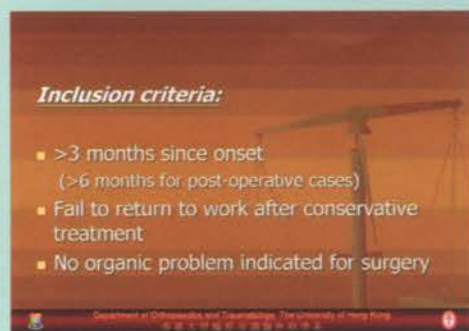


Fig.5

## Donations

Donor	Amount	Purpose
Ms Fan Sio-san Cecilia	HK\$30,000	In support of department research and academic activities
Francis R. Zimmern Foundation	HK\$1,000,000	In support of Prof. Keith Luk's research
Dr Hayles Wai Heung-wah	HK\$60,000	In support of department research
A-Spine Holding Group Corp.	HK\$115,000	In support of Bioactive Bone Cement research
Dr Lee Po-chin	HK\$35,000	In support of department research
Dr Mak Kin-cheung	HK\$1,000	In support of department research
Dr Hector Ma & friends	HK\$150,000	In support of department research
Mr Hung Fan-lau	HK\$200,000	In support of Prof. Keith Luk's research
The Society for the Relief of Disabled Children	HK\$100,000	In support of department research
Anonymous	HK\$ 30,000	In support of department research
Anonymous	HK\$ 50,000	In support of department research



## ACL Reconstruction Seminar: Live Surgical Demonstration Using Double Bundle Technique

The live surgical demonstration on ACL reconstruction using double bundle technique was held on 9th September 2005. Dr Freddie Fu, from the University of Pittsburgh, demonstrated the surgical technique. The seminar was attended by many enthusiastic arthroscopists.



Dr Freddie Fu and participants in the ACL reconstruction seminar

The 3<sup>rd</sup> Hong Kong International Orthopaedic Forum with the theme of "Common pitfalls in Orthopaedic Practice" was held on 22-23 April 2006 and was attended by over 400 participants. The 4<sup>th</sup> Orthopaedic Forum will be held on 21-22 April 2007. The theme is "Musculoskeletal problems in the skeletally immature – a complete perspective."

### Forthcoming Events

Harry Fang Visiting Professor Lecture: "Lumbar disc disorders: advances in basic science research and surgical techniques"

By Professor Howard S. An, Director of Spine Surgery, Rush University Medical Centre, USA  
Date: 31 October, 2006 Tuesday (6:00pm)  
Venue: 5/F Lecture Theatre, Professorial Block, Queen Mary Hospital  
Enquiry: Tel 28554466, Fax 28174392, email [rmcyuen@hku.hk](mailto:rmcyuen@hku.hk)

MB Lee Visiting Professor Lecture: "Wear, osteolysis and implant fixation after total hip and knee replacement"

By Professor William J Maloney, Professor & Chairman of Orthopaedic Surgery, Stanford University Medical Centre, Stanford, USA  
Date: 9 November, 2006 Thursday (6:00pm)  
Venue: 5/F Lecture Theatre, Professorial Block, Queen Mary Hospital  
Enquiry: Tel 28554466, Fax 28174392, email [rmcyuen@hku.hk](mailto:rmcyuen@hku.hk)

Dr. Tam Sai Kit Visiting Professor Lecture: "Management of the Adolescent Painful Flatfoot" By Dr. Vincent S. Mosca, Associate Professor of Orthopaedics, University of Washington School of Medicine, Seattle, USA  
Date: 16 November, 2006 Thursday (6:00 pm)  
Venue: 5/F Lecture Theatre, Professorial Block, Queen Mary Hospital  
Enquiry: tel 28554466, Fax 28174392, email [rmcyuen@hku.hk](mailto:rmcyuen@hku.hk)

Award	Project Title	Investigators
Basic Science Poster Award at 2005 Scoliosis Research Society Annual Meeting	Comparison of the effect of non-selective NSAID and Cyclooxygenase-2 (COX-2) Selective NSAID on bone formation – Implications for Spinal Fusion	Dr Cathy Guo
2005 Young Scientist Award organized by Hong Kong Institution of Science	Development of a Novel Spinal Implant for Progressive Scoliosis Correction	Dr Kelvin Yeung
The Third Oral Presentation Award at XXIII SICOT/SIROT Triennial World Congress	Pinelectomy in Young Non-human Primates does not result in Scoliosis Development: A long term follow-up study	Dr. Kenneth Cheung
Finalist for Hibbs Basic Science Award 2005 Scoliosis Research Society Annual Meeting	A Novel 'Smart' Spinal Implant Locking Mechanism Based On Nickel-Titanium Alloy	Drs. Kelvin Yeung, Kenneth Cheung, William Lu, Prof. Keith Luk
Dr David Fang Trophy for the Best free paper on adult joint reconstruction Hong Kong Orthopaedic Association Annual Congress 2005	Prophylactic antibiotics in total joint arthroplasty	Dr WM Tang
John H Moe award for Best Basic science Poster presentation at 2005 Scoliosis Research Annual Meeting	Comparison of the effect of Non-selective NSAID and Cyclooxygenase-2 (COX-2) Selective NSAID on Bone formation – Implications for spinal fusion	Drs. Cathy Guo, Kenneth Cheung, Danny Chan, Michael Irwin

## Congratulations - Achievement and Promotion

Dr. Kenneth Cheung has been promoted to Associate Professor (Senior Lecturer).

Drs. Frankie Leung and YW Wong have been promoted to Consultants.

Dr. TP Ng has been promoted to Associate Consultant.

Dr. Kenneth Cheung has been appointed as "Executive Research Officer" for a term of 3 years for AO Spine International.

Dr. Ni Guoxin has been awarded the Endeavour Australia Cheung Kong Awards 2006.

Dr. Ni Guoxin, Mr. Chan Yee Loy, Mr. Li Zhaoyang, and Mr. Lam Raymond, a research team from Biomaterial Lab, has been awarded the Second-Prize Award from the 9<sup>th</sup> National Challenge Cup Competition held in Fudan University.

A research team, headed by Dr. Kenneth Cheung, with members comprising Dr. Kelvin Yeung, Prof. Keith Luk, Prof. Paul Chu, Dr. William Lu, Dr. Danny Chan, Dr. Jonathan Chung, Prof. Min Zhu, Prof. Xin-ping Zhang and Prof. Johan Karlberg, has been awarded with a grant of \$7.6 million from the HKSAR Government Innovation and Technology Commission on the project "Optimization and Commercialization of Novel Metallic Materials for Orthopaedic Use". Together with the industrial sponsorship, the funding amounts to \$9.3 million.