

The Hong Kong College of Orthopaedic Surgeons

Orthopaedic Rehabilitation Subspecialty Training Seminar / Workshop Series

Contents

The Rehabilitation Seminar and Workshop will be run in a cycle of 2 years.

One to two 3-hour sessions will be held on Saturday morning every month.

1. Amputee rehabilitation (2 sessions)
2. Electrodiagnosis (3 sessions)
3. Geriatric orthopaedics and fragility fracture management (3 sessions)
4. Hand/ Burns rehabilitation (2 sessions)
5. Musculoskeletal ultrasound and therapeutic procedure (2 sessions)
6. Pain management (2 sessions)
7. Polytrauma (1 session)
8. Spinal cord injury (2 sessions)
9. Sport injury (3 sessions)
10. Adult joint reconstruction (1 session)
11. Work rehabilitation (1 session)

1. Amputee Rehabilitation

6 hours (2 sessions)

1. Discussion: Functional point of view versus Surgeon's point of view (1-hour lecture and group discussion)
 - a. Considerations in the decision of level of amputation
 - b. Pros and Cons of each level of amputation
 - c. Different types of Flap design
 - d. Healing
 - e. Scar
 - f. Prosthesis fitting
 - g. Methods of muscle reconstruction in amputation

2. Amputee rehabilitation (1- hour lecture)
 - a. Elective versus emergency
 - b. Pre-operative preparation
 - c. Postoperative rehabilitation
 - i. Acute phase
 - ii. Sub-acute phase
 - d. Long term care of amputees
 - e. Outcome assessment of amputees

3. Prosthetic Components, Design and Prescription Principles (2-hour workshop in Prosthetics &Orthotics Department)
 - a. Endoskeleton and Exoskeleton
 - b. Socket design
 - c. Suspension of prosthesis
 - d. knee joint design
 - e. Prosthetic foot design
 - f. Myoelectric prosthesis
 - g. Computer-aided design and manufacture

4. Gait assessment (1-hour lecture & discussions)
 - a. Basic principles of visual and video gait analysis
 - b. Indications
 - c. Basic Interpretation of results

5. Management of complications of amputation (1-hour lecture)
 - a. Poor gait balance
 - b. Muscle weakness/ contractures
 - c. Neuroma
 - d. Pain management in amputees
 - e. Skin and scar problems

2. Application of Electrodiagnosis in Orthopaedic Rehabilitation

9 hours, 3 sessions

1. Basic neurophysiology and anatomy (1-hour lecture)
 - a. Anatomy of peripheral nerves
 - b. Physiology of peripheral nerves
 - c. Pathological changes of peripheral nerves

2. Basic principles of electrodiagnosis (2-hour lecture)
 - a. Nerve conduction test
 - b. Late response
 - c. Electromyography
 - d. Indications for electrodiagnosis
 - e. Limitations of electrodiagnosis
 - f. Technical problems that may be encountered
 - g. Interpretation of results

3. Electrodiagnosis in different clinical conditions (3- hour seminar with cases discussion)
 - a. Common entrapment neuropathy in upper limbs
 - b. Common entrapment neuropathy in lower limbs/ Footdrop
 - c. Neurological diseases which may present to Orthopaedic Department

4. Workshop Session (3-hour demonstration and hand-on session)
 - a. The NCT/EMG machine
 - b. Settings for different examinations
 - c. Basic nerve conduction studies in upper limbs
 - d. Basic nerve conduction studies in lower limbs
 - e. Basic electromyography

3. Geriatric Orthopaedics and Fragility Fracture Management

9 hours, 3 sessions

1. Geriatric patients in orthopaedic wards (3-hour seminar)
 - a. The process of ageing
 - b. Common medical comorbidities
 - c. Pre-operative optimization
 - d. Anaesthesia and pain management in geriatric patients
 - e. Nutrition / wound problem
 - f. Prescription in geriatric patients and pitfalls
 - g. Fall and fall prevention
 - h. Delirium

2. Fragility Fractures (3-hour seminar)
 - a. Overview – the burden on healthcare system
 - b. Primary and secondary osteoporosis
 - c. Medications for osteoporosis
 - d. Calcium and Vitamin D supplements
 - e. Secondary prevention of fragility fracture
 - f. Fracture liaison service
 - g. Community care

3. Rehabilitation of geriatric orthopaedic patient (3-hour seminar)
 - a. Geriatric hip fracture acute care pathway
 - b. Operative management of geriatric hip fractures
 - c. Geriatric hip fracture rehabilitation pathway
 - d. Patients with movement disorder
 - e. Patients with dementia
 - f. Patients with compromised cardiac function
 - g. Patients with compromised respiratory function
 - h. The model of Ortho-Geriatric collaboration

4. Hand surgery/ Burns

6 hours, 2 sessions

1. Functional assessment of hand (1-hour)
 - a. Sensory assessment
 - b. Power
 - c. Dexterity
 - d. Intrinsic and Extrinsic hand

2. Principle of Hand Splints (1-hour)
 - a. Dynamic splints
 - b. Functional splints
 - c. Static splints
 - d. Protective splints

3. Principle of Tendon Rehabilitation (2-hour)
 - a. Tendon healing mechanism
 - i. Extrinsic and Intrinsic
 - ii. Blood supply
 - b. Suturing technique and tendon strength
 - c. Flexor tendon and Extensor tendon
 - d. Principle of tendon rehabilitation programs
 - e. Rehabilitation program for tendon graft
 - f. Rehabilitation program for tendon transfer

4. Management of stiff hand and chronic pain

5. Burn Rehabilitation (2-hour)
 - a. Acute management of burn patients
 - b. Different types of dressing and wound management
 - c. Nutritional support for burn patient
 - d. Splintage for optimal joint position
 - e. Wound resurfacing options
 - f. Surgical management of Scar contractures
 - g. Physiotherapy for burn patients
 - h. Pressure therapy and scar management

5. Musculoskeletal Ultrasound and therapeutic procedure

6 hours, 2 sessions

1. Basic principles of ultrasonography (1-hour)
 - a. Instruments
 - b. Ultrasonography of normal structures
 - i. Bone
 - ii. Muscle
 - iii. Tendon
 - iv. Ligament
 - v. Nerve
 - vi. Cartilage
 - vii. Bursa
 - c. Pathological conditions
 - i. Muscle tear
 - ii. Tendon tear
 - iii. Ligament tear
 - iv. Nerve entrapment
 - v. Joint effusion

2. Ultrasonography of Specific Anatomic Areas (2-hour)
 - a. Shoulder
 - b. Elbow
 - c. Wrist and Hand
 - d. Hip
 - e. Knee
 - f. Ankle and Foot

3. Injection under ultrasound guidance (hand-on workshop 3-hour)
 - a. Injection techniques
 - b. Different types of therapeutic agents
 - c. Injection of different anatomical areas
 - i. Shoulder
 - ii. Elbow
 - iii. Wrist and Hand
 - iv. Hip
 - v. Knee
 - vi. Ankle and Foot

6. Pain management

6 hours, 2 sessions

1. Basic science of pain (1-hour)
 - a. Anatomy of pain pathways
 - b. Physiology
 - c. Different types of pain
 - i. Nociceptive
 - ii. Neuropathic
 - iii. Acute
 - iv. Chronic

2. Evaluation and management of the pain patients (2-hour)
 - a. Assessment of pain
 - b. Instruments for assessment
 - c. Pharmacological management
 - d. Non-pharmacological management
 - e. Interventional procedures
 - f. Psychosocial intervention

3. Tutorial and case discussion (3-hour)
 - a. Pain in special groups of orthopaedic patients
 - i. Chronic back pain
 - ii. Work injury
 - iii. Spinal cord injury
 - iv. Amputee
 - b. Pitfalls in pain management

7. Polytrauma

3 hours, 1 session

1. Initial management of polytrauma patients (1-hour)
 - a. ATLS principles
 - b. Pathological changes in polytrauma patients
 - i. Haemorrhage
 - ii. Hypothermia
 - iii. Inflammation

2. Principles of rehabilitation of polytrauma patients (2-hour)
 - a. Choice of the optimal surgical strategies
 - b. Peri-operative management
 - c. Early mobilization of major joints
 - d. Non-orthopaedic injury – head injury, chest trauma
 - e. Nutritional management
 - f. Pain management
 - g. Prevention and management of complications
 - i. wound management
 - ii. pressure sore prevention
 - iii. contractures
 - iv. Infection
 - h. Psychosocial aspect
 - i. Depression
 - ii. Pain
 - iii. post-traumatic stress disorder

8. Spinal Cord Injury

6 hours, 2 sessions

1. Neurological and Functional classification of spinal cord injury (SCI) (1-hour)
 - a. International Standards for Neurological Classification of Spinal Cord Injury (ISNCSI)
 - b. Motor and sensory examination for SCI patients
 - c. Prognostication of Neurological and functional recovery

2. Rehabilitation program according to level of injury (2-hour)
 - a. Prevention of deformities
 - b. Prevention and Management of pressure sores
 - c. Cardiovascular management
 - d. Respiratory management
 - e. Neurogenic bladder management
 - f. Neurogenic bowel management

3. Functional Rehabilitation (2-hour)
 - a. Physiotherapy for SCI
 - b. Special consideration in mobility aids
 - c. Orthotics
 - d. Assistive technology, ADL aids and environmental modification
 - e. Use of robotics in SCI rehabilitation
 - f. Management of common complication in SCI
 - i. Thromboembolism
 - ii. Neuropathic Pain
 - iii. Spasticity
 - iv. Autonomic dysreflexia
 - g. Secondary surgery
 - i. Upper limb reconstruction
 - ii. Function electrical stimulation
 - iii. Implantable devices

4. Multi-disciplinary approach (1-hour)
 - a. Psychosocial aspects
 - b. Depression
 - c. Sexuality Issues
 - d. Work and Home modification
 - e. Long-term follow-up care of SCI

9. Sport Injury

9 hours, 3 sessions

1. Principle and practice of rehabilitation in sports injury (3-hour)
 - a. Sport Physiology, Physiological adaptation to aerobic exercise
 - b. Muscle Conditioning – Strength, Power, Endurance training strategies
 - c. Flexibility – Joint & Musculotendinous flexibility training
 - d. Proprioception and Functional Exercise
 - e. Stages and Progression of Rehabilitation Program
 - f. Monitoring, Assessment and Return to Sport
 - g. Principles of Injury Prevention – warm up, taping, brace and other orthoses

2. Rehabilitation strategies of acute, overuse and repetitive injuries (2-hour)
 - a. Muscle strain
 - b. Ligament sprain
 - c. Tendinopathy - exercise program, physical modalities, and biological agents
 - d. Stress Fracture – biomechanics consideration, exercise and training program modification
 - e. Joint instability (uni- & multi-directional)
 - f. Muscle conditioning, proprioception and functional exercise program

3. Rehabilitation Principles after Reconstructive Surgery in Sport Injuries (4-hour)
 - a. Shoulder
 - i. Stabilization procedures
 - ii. Rotator cuff repair and tendon transfer surgery
 - b. Knee
 - i. Major knee ligament reconstruction surgery
 - ii. Patella stabilization procedures
 - iii. Meniscal surgery
 - c. Foot and Ankle
 - i. Achilles tendon repair and reconstruction surgery
 - ii. Ankle ligament reconstruction procedures
 - d. Elbow
 - i. Surgery for instability
 - e. Rehabilitation of Common Painful Conditions in Athletes
 - i. Shoulder Impingement syndrome
 - ii. Groin pain
 - iii. Iliotibial band syndrome, patellofemoral joint pain
 - iv. Achilles tendon conditions

10. Adult Joint Reconstruction

3 hours, 1 session

1. Basic principles of adult joint reconstruction
 - a. Indications for adult joint reconstruction procedures
 - b. Options of adult joint reconstruction procedures
 - i. Arthroplasty
 - ii. Arthrodesis
 - iii. Osteotomy
 - c. Design of joint prosthesis
 - i. Constrained and Non-constrained types
 - ii. Cemented and cementless designs
 - iii. Influence of design on range of motion
 - d. Multidisciplinary team assessment of patient
 - i. Pre-operative assessment
 - ii. Pre-operative optimization of comorbidities
 - iii. Pre-operative exercise program

2. In-patient rehabilitation of total hip replacement and total knee replacement
 - a. Pain control
 - b. Bowel and Bladder Management
 - c. Prevention of Thromboembolism
 - d. Restrictions on weight bearing and exercise
 - e. Management of Medical Comorbidities
 - f. Integrated Clinical Pathways for rehabilitation of total hip replacement and total knee replacement

3. Community rehabilitation

4. Post-discharge support

11. Work Rehabilitation

3 hours, 1 session

1. Work-related injury in orthopaedic practice
 - a. Prevention of work-related injury
 - b. Chronic pain in work-related injury
 - c. Pain management of work-related injury

2. International Classification of Functioning, Disability and Health
 - a. the biopsychosocial model of disability
 - b. Assessment for impairment and activity limitation
 - c. Functional Capacity Evaluation

3. Ergonomic assessment of work tasks and workplace

4. Disability management and return-to-work issues