

POST - DOCTORAL FELLOWSHIP PROGRAMME IN ORTHOPAEDIC HAND AND RECONSTRUCTIVE MICROSURGERY

Injury of the Hand and Distal Upper limb History and Clinical Examination of the Upper Limb

DURATION OF THE COURSE : ONE YEAR

Skin:

Techniques of skin cover – Management of skin loss including basic plastic surgical techniques.

- a. Split skin grafts
- b. Full thickness grafts
- c. Local and distant pedicle flaps Z plasty
skin advancement and rotation
- d. Free flaps: skin, sub-cutaneous tissue, multi-tissue transfer
- e. Microsurgical techniques

Tendon

1. Flexor Tendon: Management of flexor tendon injuries
 - a. Anatomy, Physiology, bio-mechanics, healing
 - b. Techniques of primary repair
 - c. Secondary techniques: e.g., graft, pulley reconstruction, tenolysis, tenodesis
2. Extensor Tendons – management of extensor tendon injuries
 - a. Anatomy, Physiology, bio-mechanics, healing
 - b. Techniques of primary repair
 - c. Secondary techniques: e.g., graft, transfers, tenolysis

Nerve

1. Anatomy, physiology, types of injury
2. Repair mechanisms
3. Repair techniques, microsurgical techniques
4. Primary repair – major nerve, digital nerve
5. Nerve graft
6. Neurolysis
7. Neuroma management

8. brachial plexus injuries

Vessels:

1. Anatomy, Physiology, Pathology
2. Microsurgical techniques, vessel repair and anastomosis
3. Management of arterial injuries
4. Management of compartment syndromes
5. Management of ischaemic hands

Bone:

1. Anatomy, Physiology, fracture healing, bio-mechanics of fracture repair and fixation
2. Techniques of fracture fixation – closed methods
 - a. Use of splints and casts
 - b. External fixation
3. Techniques of fracture fixation – open methods e.g. K wires, mini plate and screws
4. Management of metacarpal and phalangeal fractures and fracture dislocations
 - a. Shaft
 - b. Intra-articular
5. Wrist Injuries
 - a. Carpal bone fracture (non-scaphoid)
 - b. Scaphoid fractures
 - c. Carpal dislocations and fracture dislocations
 - d. Fractures and Fracture dislocations of the distal radius
 - e. Fractures, dislocations and fracture dislocations of the distal ulna
6. Kienbocks's disease and other Carpal ischemia
Secondary management
 - a. Repair of non-unions and mal-unions
 - b. Osteotomies, arthroplasties and fusions
 - c. Management of late problems in the DRUJ
 - d. Management of late problems in the CMC Joint areas

7. Ligaments

1. Anatomy, Physiology, bio-mechanics, types of injury
2. Diagnostic techniques: standard imaging, special imaging, arthrography, arthroscopy
3. Management of dislocations and ligaments injuries – interphalangeal, MCP
 - a. Open repair of ligament injuries, fingers and thumb
 - b. Reconstruction of chronic ligaments injuries
4. Management of acute and chronic ligament injuries of the wrist
 - a. Carpal subluxations and instabilities
 - b. Management of injuries to the DRUJ and TFCC
 - c. Arthroscopic surgery of the wrist

AMPUTATIONS:

1. Techniques of treatment of finger tip injuries
2. Techniques of repair of thumb amputations
3. Management of finger, hand and forearm amputations
4. Replantation and revascularization
5. Reconstruction following amputation
 - a. Prostheses and orthoses
 - b. Thumb and digit reconstruction

Special Injuries:

1. Management of thermal Injuries
2. Management of pressure and injection injuries
3. Management of degloving injuries
4. Management of multiple tissue injuries
5. Radiation and chemical injuries
6. Vibration injuries

ELECTIVE SURGERY OF THE HAND AND UPPERLIMB

Congenital

1. Embryology of the hand and upperlimb
2. Classification of congenital hand anomalies
3. Management of congenital hand anomalies
 - a. thumb e.g., aplasia, duplication
 - b. digits e.g. syndactyly, polydactyly, clinodactyly, camptodactyly
 - c. limb e.g. radial and ulnar club hand, aplasia, cleft hand
4. Techniques used in management of congenital anomalies

- a. Pollicisation, finger transfer
- b. Flaps
- c. Toe to hand transfers
- d. Microsurgical techniques
- e. Physis manipulation
- f. External fixator manipulation

Paralysis

1. General principles of management cerebral palsy and other spastic paralysis
2. General principles of management of tetraplegia
3. Paralysis due to poliomyelitis, Hansen's Disease
4. Paralysis due to nerve injury and reconstruction for peripheral nerve lesions
5. General principles of management of muscular dystrophy and other neurological conditions
6. Tendon transfers
7. Stabilisation of joints
8. Contracture management

Arthritis

1. Patho-physiology of osteo-arthritis and rheumatoid arthritis
2. General principles of management of arthritis in hand and upperlimb
3. Management of rheumatoid arthritis including tendon and joint synovectomy, tendon and joint synovectomy, tendon transfer, arthroplasty and arthrodesis.
 - a. Interphalangeal joints
 - b. MCP joints
 - c. CMC joint of thumb
 - d. Wrist and inferior radio-ulnar joint
4. Management of osteo-arthritis including arthroplasty and arthrodesis
 - a. Digital joints
 - b. Thumb base
 - c. Inter-carpal joints
 - d. Wrist and inferior radio-ulnar joint
5. Management of Other arthritides
 - a. Psoriatic arthropathy
 - b. Systemic lupus
 - c. Scleroderma

- d. Juvenile R.A
- e. Gout
- f. Others

Nerve Compression Syndrome

- 1. Pathology, EMG techniques, nerve conduction studies
- 2. Management of compression syndromes
 - a. Median b. Ulnar c. Radial and
- d. Thoracic outlet and other proximal compartment syndromes

Tumours

- 1. Pathology of tumours affecting the hand
- 2. Principles of tumour management
- 3. Management of soft tissue tumours
 - a Ganglion
 - b. Benign soft tissue tumours including pigmented villonodular synovitis
 - c. Malignant soft tissue tumours
- 4. Management of bone tumours: Benign, Malignant, Metastatic

Infection:

- 1. General principles, prevention, use of antibiotics
- 2. Wound infection
- 3. Nail infection and disease
- 4. Infection of skin and subcutaneous tissues
- 5. Deep sepsis
 - a. Septic arthritis
 - b. Osteomyelitis
 - c. Tendon sheath infection
- 6. Esoteric infection e.g., Orf, Human and animal bites
- 7. Limb and/or life threatening conditions e.g., necrotizing fascitis etc. ,

Connective Tissue Disorders:

- 1. Anatomy, Physiology, pathology of connective tissues in the hand
- 2. Stenosing syndromes e.g. Trigger digits, deQuervain's syndrome
- 3. Dupuytren's contracture
 - a. Anatomy, Physiology, Pathology, Epidemiology
 - b. Surgical techniques
- 4. Ischaemic contractures
- 5. Other connective tissue disorders e.g. fascitis, tenosynovitis

Pain syndromes in the Upper limb

1. Occipito cervico-brachial
2. Occupational and vocational problems
3. Pain dysfunction syndromes
e.g. “cumulative trauma disorder” and “repetitive strain injury”
4. Causalgia and other types of reflex sympathetic dystrophy
5. Hysterical and psychosomatic conditions in the upperlimb

Sports Injuries in the Upperlimb

Related Disciplines

- 1. Dermatology**
 - a. Tumours of the skin as they affect the hand
 - b. Abnormalities of the nail
- 2. Neurology**
 - a. Detailed anatomy and physiology of the peripheral nervous system in the upperlimb
 - b. Knowledge of neurological conditions which cause sensory deficit and paralysis in the upperlimb
 - c. Basic knowledge in use and interpretation of electrical studies of nerves
- 3. Rheumatology**
 - a. knowledge of connective tissue disorders which may manifest themselves in the upperlimb e.g. scleroderma, lupus, psoriasis, gout etc.
 - b. Knowledge of basic principles of management of rheumatoid arthritis
- 4. General Medicine:**
 - a. A knowledge of the way in which systemic disease may manifest itself by changes in the hand-finger clubbing, acrocyanosis, diabetic cheirarthropathy
- 5. Rehabilitation:** An extensive knowledge of the techniques and principles of rehabilitation, physiotherapy and occupational therapy in the upper limb

6. Radiology: Knowledge of the various types of medical imaging which may be of value in the investigation of problems in the hand and wrist, e.g. ultrasound, CT, MRI, contrast arthrography

7. Psychiatry: understanding of the interplay of psyche and soma in injury and disease of the upperlimb e.g. hysterical hand conditions, pain magnification, malingering

8. Vascular disease: an understanding of the effects of circulatory disorder on the upper limb

9. Oncology: General knowledge of tumour behaviour, classification and management

10. Anaesthesiology: an understanding of anaesthetic techniques, particularly regional anaesthesia