Clinical Orthopaedic Rehabilitation | Hand and Wrist Injuries

COURSE DESCRIPTION

This program is a practical, clinical guide that provides guidance on the evaluation, differential diagnosis, treatment and rehabilitation of patients with orthopaedic problems. The focus of this volume is on Hand and Wrist Injuries.

In an easy to use format, it covers all orthopaedic conditions and procedures from initial examination through the postoperative or post-injury period, including arthroplasty, fractures, and sports injuries. Each chapter is written jointly by an orthopaedic surgeon and a physical therapist.

LEARNING OBJECTIVES

Hand and Wrist Injuries | Module 1

Flexor Tendon Injuries
- The student will identify important points for rehabilitation protocol following flexor tendon repair
- Identify tensile strength of the flexor tendons
- Describe the strength of the tendon following repair in the acute and subacute phases of healing
- Describe factors that influence the formation of adhesions near repaired flexor tendons
- Discuss the timing of flexor tendon repairs and the influence this has on functional outcome
- Discuss the requirements for secondary repair of flexor tendons
- Understand the anatomy of the flexor tendons and how an injury in specific zones affect functional outcome following surgical intervention
- Describe both intrinsic and extrinsic tendon healing
- Describe the factors that affect tendon healing
- Be able to describe, in detail, the treatment options for surgical repair of lacerated tendons including teno-fix repair
- Develop a rehabilitation protocol following surgical intervention of lacerated tendons

Trigger Finger (Stenosing Flexor Tenosynovitis)
- Explain the underlying physiology of trigger finger
- Clinical findings of trigger finger
- Describe various treatment modalities for trigger finger
- Age group affected by pediatric trigger thumb and need for surgical intervention

Flexor Digitorum Profundus Avulsion (“Jersey Finger”)
- Discuss the etiology of jersey finger
- Describe the three separate classifications of jersey finger with respect to the specific anatomy
- Discuss treatment options for each classification and the functional outcome following the various surgical interventions

Extensor Tendon Injuries
- Describe the eight anatomic zones of extensor tendon injury
- Discuss the unique concerns of extensor tendon injuries in children
- Detail the functional outcome of extensor tendon injuries in zones 4 – 8
• Give the indications for extensor tenolysis
• List the signs, symptoms, and classifications of mallet finger
• Discuss treatment options for mallet finger with respect to age, restrictions to range of motion, and splinting options

Hand and Wrist Injuries | Module 2

Fractures and Dislocations of the Hand
• List the fractures that require surgical intervention
• Describe the principles of metacarpal and phalangeal fractures
• Understand the principles of REDUCE when splinting
• Be aware of poor outcomes following metacarpal fractures, and how to prevent/treat such outcomes

Fifth Metacarpal Neck Fracture (Boxer’s Fracture)
• Summarize the clinical findings of boxer’s fracture
• Discuss treatment options and criteria
• Illustrate mobilization criteria and reasons for early inclusion into rehabilitation program
• Be aware of poor outcomes following phalangeal fractures, and how to prevent/treat such outcomes
• Describe the differences between stable and unstable PIP joint injuries
• Discuss the various types of PIP joint injuries including relevant anatomical structures affected, clinical findings and treatment options

Hand and Wrist Injuries | Module 3

Injuries to the Ulnar Collateral Ligament of the Thumb Metacarpophalangeal Joint (Gamekeeper’s Thumb)
• Describe the anatomy of the MCP joint of the thumb and the mechanisms of injury for this joint
• Detail the clinical findings of gamekeeper’s thumb
• Detail the treatment protocol for gamekeeper’s thumb

Nerve Compression Syndromes
• Describe the etiology and clinical findings of carpal tunnel syndrome (CTS), including degree of CTS and the special tests used to diagnosis the condition
• List the differential diagnoses of CTS, including causes for each condition
• Prepare a non-operative rehabilitation protocol for CTS
• Describe the goals of operative CTS treatment, and the possible complications following surgical intervention
• Describe etiology, clinical findings, and treatment options for bowler’s thumb

Hand and Wrist Injuries | Module 4

Wrist Disorders
• Describe the anatomy of the scaphoid and how this can affect fracture healing
• Detail the clinical findings, including radiographic evidence for scaphoid fracture
• Discuss the treatment options, including splinting, for both displaced and non-displaced scaphoid fractures
Fracture of the Distal Radius
- Describe the goals of the treatment of a distal radius fracture
- Be aware of how swelling can affect functional outcome
- Discuss the etiology and clinical findings following a fracture to the distal radius
- Discuss how displacement and angulation of wrist structures affects outcome
- List, and describe, the classifications of distal radius fractures
- Identify treatment protocols based on the classification of fracture to the distal radius
- Describe the indications for surgical intervention following fracture of the distal radius

Hand and Wrist Injuries | Module 5

Triangular Fibrocartilage Complex Injury
- Discuss how the anatomy affects outcome following injury
- Discuss the classifications of triangular fibrocartilage complex (TFCC) injury and the clinical findings for each
- Discuss diagnostic criteria for the injury and the special tests used to detect damage to the TFCC
- Discuss the accuracy of imaging techniques in the diagnosis of TFCC injuries
- Discuss the surgical intervention techniques for TFCC repair and the anatomy affected for each

de Quervain Tenosynovitis
- Describe the clinical findings for De Quervain tenosynovitis including radiographic evidence
- Discuss the various treatment options including functional outcomes for each and any relevant concerns

Intersection Syndrome of the Wrist
- Discuss the mechanism of injury, underlying pathophysiology and relevant clinical findings
- Discuss relevant clinical findings for intersection syndrome, de Quervain’s tenosynovitis, sixth dorsal compartment tenosynovitis, flexor carpi radialis tunnel syndrome, and trigger finger including differential diagnoses
- Describe the conservative treatment model for intersection syndrome of the wrist

Dorsal and Volar Carpal Ganglion Cysts
- Describe the etiology of dorsal and volar carpal ganglion cysts
- Discuss the clinical findings and treatment options

Rehabilitation
- Develop rehabilitation protocols for all conditions listed above with the following in mind: stage of injury; type of surgical intervention