Lecture 1: Boutonniere-Swan Neck and the Intrinsics

1) OITE 2008 Question 238.
Which of the following examination findings suggests intrinsic tightness?
1 The patient is unable to fully extend the metacarpophalangeal (MCP), proximal interphalangeal (PIP), and distal interphalangeal (DIP) joints of the fingers.
2 The PIP joints flex fully with the MCP joints flexed but not when the MCP joints are extended.
3 The patient is unable to fully flex the MCP, PIP, and DIP joints into a fist.
4 The PIP joints flex fully with the MCP joints extended but not when the MCP joints are flexed.
5 Active motion of the PIP joints is limited, but passive motion of the PIP joints is full.

2) OITE 2006 Question 92
A 25 year old professional boxer reports pain and persistent swelling over the metacarpophalangeal (MCP) joint of his middle finger. Radiographs, including Brewerton views, are normal. Nonsurgical management, consisting of a 3-month course of activity modification, extension splinting, and anti-inflammatory drugs, has failed to provide relief. Management should now consist of:
1. reassurance and continued nonsurgical care
2. debridement of the MCP joint
3. cortisone injection into the flexor sheath
4. curettage and bone grafting of the third metacarpal head
5. repair of the extensor hood


3) OITE 2004 Question 71
A 40-year-old woman has a chronic boutonniere deformity of the proximal interphalangeal (PIP) joint of her middle finger with a preserved joint space. She lacks 45 degrees of active extension but has full passive extension of the PIP joint. Treatment should consist of
1. central slip tenotomy
2. volar plate release
3. lateral band relocation
4. arthrodesis of the PIP joint
5. arthroplasty of the PIP joint
4) OITE 2005 Question 164.
An otherwise healthy 60 year old man reports the sudden inability to extend his middle finger. Examination reveals that the metacarpophalangeal joint of the finger will not actively or passively extend beyond 45 degrees of flexion. Proximal interphalangeal joint motion is unrestricted, and composite finger flexion is to the distal palmar crease. Radiographs are normal. Treatment of this condition should consist of

1) release of A1 pulley
2) relocation of the common extensor tendon
3) reconstruction of the radial sagittal band
4) Exploration of the metacarpophalangeal joint radial collateral ligament
5) Radical flexor tenosynovectomy


5) OITE 2001 Question 15
The occurrence of restricted passive flexion of the proximal interphalangeal joint during extension but not flexion of the metacarpophalangeal joint is most indicative of

1- flexor tendon adhesions.
2- extensor tendon adhesions.
3- intrinsic contracture.
4- quadrigia effect.
5- a lumbrical plus finger.


6) OITE 2001 Question 39
A basketball player sustained blunt trauma to his long finger. Examination reveals swelling and tenderness at the proximal interphalangeal (PIP) joint. He is able to extend the digit and flex the PIP and distal interphalangeal (DIP) joints. When the PIP joint is bent 90 degrees over the edge of the table and middle phalanx extension is manually blocked, the DIP joint goes into rigid extension when the patient attempts to extend his finger. Management should consist of:

1- surgical repair of the oblique retinacular ligament.
2- surgical repair of the central slip.
3- a dynamic extension outrigger splint.
4- buddy taping and early active motion.
5- extension splinting of PIP joint

7) OITE 2000 Question 72
Formation of a boutonniere deformity requires injury to not only the central tendon insertion at the level of the proximal interphalangeal joint, but also injury of the

1- sagittal bands.
2- lateral bands.
3- conjoined lateral bands.
4- **triangular ligament.**
5- oblique retinacular ligament.


**Lecture 2: Flexor Tendon Injuries**

1) OITE 2008 Question 227. The nutritional supply of the tendon region shown in Figure 97 primarily comes from the

1- paratenon.
2- **synovial sheath and fluid.**
3- mesotenon/vinculae.
4- periosteum.
5- myotendinous junction.

Figure 97: Item 227
2) OITE 2007 Question 34
During repair of an avulsed flexor digitorum tendon to the ring finger, excessive advancement must be avoided to prevent the occurrence of

1. lumbrical plus syndrome
2. lumbrical minus syndrome
3. **quadrigia syndrome**
4. boutonniere deformity
5. swan-neck deformity


3) OITE 2006 Question 274
The strength of flexor tendon repair can be increased by all of the following techniques EXCEPT

1. **Repair of the flexor tendon sheath**
2. Increasing the size of the core suture
3. Increasing the number of core suture strands that cross the repair site
4. Adding epitendinous suture
5. Adding locking loops to the core suture


4) OITE 2006 Question 14
A 25-year-old woman sustains an injury to the tip of her ring finger in a meat slicing machine. Examination reveals volar tissue loss only, with the insertion site of the flexor digitorum profundus tendon exposed. Coverage of the wound is best achieved with what type of flap?

1- V-Y advancement
2- Thenar
3- Neurovascular island
4- **Cross-finger**
5- Axial flap

5) OITE 2005 Question 21
The ideal flexor tendon rehabilitation protocol that minimizes peritendonous adhesions includes

1- Casting for 6 weeks.
2- **A synergistic wrist and digit motion rehabilitation protocol.**
3- Dorsal block splint with unrestricted active finger flexion.
4- Dynamic extension outrigger splinting.
5- Early aggressive active motion and a strengthening program.

Ref: CORR, 2003:253-259

6) OITE 2005 Question 246.
A 21 year old left handed college student was playing rugby 3 days ago and felt the sudden onset of pain in his right ring finger when another player pulled away from him. A clinical photograph is shown in Figure 86. What is the most likely diagnosis?
   1- Volar plate avulsion of the proximal interphalangeal joint
   2- **Avulsion of the distal flexor digitorum profundus tendon**
   3- Musculotendinous rupture in the forearm
   4- Stretch injury to the ulnar nerve at the wrist
   5- Ulnar artery thrombosis

7) OITE 2004 Question 10
A partial laceration of the flexor tendon should be repaired when the percentage of tendon lacerated is more than
   1- 10%
   2- 20%
   3- **40%**
   4- 60%
   5- 80%

Ref: Al-Qattan, FRCSC. J Hand Surg 2000;25A:1118-1121

8) OITE 2003 Question 10
Active mobilization following flexor tendon repair is best accomplished with the wrist in

   1) Flexion and the metacarpophalangeal joints in flexion
   2) Flexion and the metacarpophalangeal joints in extension
   3) Neutral and the metacarpophalangeal joints in extension
   4) Neutral and the metacarpophalangeal joints in flexion
   5) **Extension and the metacarpophalangeal joints in flexion**


9) OITE 2003 Question 126
What is the major advantage of allowing early active motion of a repaired zone II flexor tendon injury?

   1- **Increased tendon excursion**
   2- Greater repair strength
   3- Less postoperative pain
   4- Better patient compliance
5- Faster tendon healing


10) OITE 2002 Question 70
A 4-year-old girl undergoes repair of both flexor tendons in zone II. Initial postoperative physical therapy should consist of

1- passive mobilization only.
2- active extension and passive flexion mobilization.
3- active place and mold mobilization.
4- immobilization.
5- unrestricted active mobilization.


Lecture 3: Tenosynovitis

1) OITE 2008 Question
A 28 year old woman who is recently postpartum has radial sided wrist pain. The treatment that will most likely resolve her symptoms is injection of corticosteroids in which of the following locations?
1. Intersection of the EPB and radial wrist extensors
2. 1st extensor compartment
3. 1st carpometacarpal joint
4. Scaphotrapezial joint
5. Superficial radial nerve as it exits from beneath the brachioradialis

Lecture 4: Benign Tumors of the Hand and Wrist

1) OITE 2007 Question 50
A 63-year-old woman has a mass over the dorsal aspect of her distal phalanx. She denies any history of trauma, but she reports occasional discomfort. Examination reveals a well-preserved range of motion. The mass appears to be stretching the skin. A clinical photograph is shown in Figure 16. Treatment should consist of

1- observation.
2- liquid nitrogen application.
3- aspiration.
4- distal interphalangeal joint arthrodesis.
5- excision of the cyst and underlying bone spur.
2) OITE 2006 Question 52
An active 23yo man injured his ring finger playing football 3m ago. Exam reveals a palmar mass at the base of the ring finger, and he has absent active distal interphalangeal joint flexion but full passive motion. Radiographs are shown in Fig 16a and 16b. What treatment option will best restore full finger function?
1. direct repair of the flexor digitorum profundus tendon
2. insertion of an active silicone tendon rod implant
3. one stage flexor tendon grafting
4. two stage flexor tendon grafting
5. excision of the palmar mass and distal interphalangeal joint fusion


3) OITE 2001 Question 155
Figure 50 shows the radiograph of a 24-year-old patient who has a slightly painful swollen distal finger. What is the most likely diagnosis?
1- Glomus tumor
2- Giant cell tumor
3- Intraosseous ganglion
4- Foreign body granuloma
5- Inclusion cyst

4) OITE 2001 Question 221
A 25 yo construction worker reports a mass on the dorsum of his hand that is painful with strenuous use. Examination reveals a 4x2x1 cm soft mass that overlies the proximal portions of the index and middle metacarpals. It moves with flexion and extension of the digits, becomes firmer with forceful grasp, and does not transluminate. What is the most likely dx?

1- Dorsal wrist ganglion
2- extensor tenosynovitis
3- giant cell tumor of the tendon sheath
4- carpal boss
5- anomalous extensor muscle

Lecture 5: Osteoarthritis of the Hand

1) OITE 2007 Question 92
Successful surgical management of symptomatic carpometacarpal arthritis of the thumb should always include

1. excision of the trapezium
2. interposition arthroplasty of the CMC joint
3. suspensionplasty of the first metacarpal
4. resection of the base of the first metacarpal
5. stabilization of the MCP metacarpophalangeal joint


2) OITE 2003 Question 61
A patient with carpometacarpal joint arthritis of the thumb undergoes trapezium excision and interposition arthroplasty. One year after treatment, radiographs reveal that there has been a 25% subsidence of the thumb metacarpal compared with its preoperative height. This degree of subsidence will have what effect on the surgical outcome?

1. Will not affect functional outcome
2. Will result in diminished thumb motion
3. Will result in diminished pinch strength
4. Will result in diminished grip strength
5. Will result in moderate activity-related pain

3) OITE 1998 Question 206
A 34-year-old woman has pain at the base of the thumb that worsens with pinching activities. Nonsurgical treatment has failed to provide relief. Examination reveals that the basilar joint is hypermobile, tender, and painful when stressed. A radiograph of the trapeziometacarpal joint shows normal contour with widening when compared to the opposite side. Management should consist of

1- trapeziometacarpal arthrodesis.
2- osteotomy of the thumb metacarpal.
3- arthrotomy and joint debridement.
4- **ligament reconstruction using one half of the flexor carpi radialis.**
5- trapezium resection, tendon interposition, and reconstruction of the ligament.


**Lecture 6: Distal Radius Fractures**

1) OITE 2008 Question 111: Examination of a 17-year-old girl who fell on her outstretched wrist reveals snuffbox tenderness. Radiographs are shown in Figure 45. Which of the following treatment options will allow an early return to activities and is most cost effective?
1- Short arm thumb spica cast immobilization
2- Long arm thumb spica cast immobilization
3- Percutaneous Kirschner wire fixation
4- **Percutaneous screw fixation**
5- Open reduction and internal fixation with autogenous bone graft
2) OITE 2008 Question 128. During an anterior approach to the biceps tubercle and neck of the radius, which of the following structures must be directly identified and protected?
1) musculocutaneous nerve
2) cephalic vein
3) radial recurrent artery
4) posterior interosseous nerve
5) lateral antebrachial cutaneous nerve

3) OITE 2008 Question 179. 52yo F sustained a nondisplaced distal radius fracture 6mo ago and was treated w/ short arm casting. She now reports acute inability to extend her thumb. What is the treatment of choice?
1) observation and reassurance
2) primary repair of EPB
3) primary repair of EPL
4) transfer of brachioradialis to the EPB
5) transfer of the EIP to the EPL

4) OITE 2007 Question 8
Internal fixation of distal radius fractures with volar locking plates is most commonly associated with rupture of what tendon?
1- Extensor indicis proprius
2- Extensor pollicis longus
3- Flexor digitorum profundus to the little finger
4- Flexor pollicis longus
5- Flexor carpi radialis

       Douthit, Am J Orthop, 34: 2005

5) OITE 2007 Question 226. A 45 year old laborer sustains an extra-articular fracture of
the distal radius with 30 degrees of dorsal tilt and some dorsal comminution. Closed
reduction and splinting using finger traps and local anesthesia yields an anatomic
reduction with normal volar tilt and radial length. At 1 week follow up, dorsal tilt is now
neutral (0 degrees). At 2 weeks follow up, dorsal tilt is now at 5 degrees with some loss
of radial length. Management should consist of

1. continued observation in the current splint
2. repeat closed reduction and recasting
3. conversion to a removable splint and range of motion exercises
4. surgical stabilization in situ with external fixation
5. surgical reduction and stabilization with internal or external fixation

Trumble TE (ed): Hand Surgery Update 3: Hand, Elbow, & Shoulder. Rosemont, IL,

6) OITE 2006 Question 16
A 22-year-old woman has wrist pain after falling on her outstretched hand 2 weeks ago.
Examination reveals tenderness in the anatomic snuffbox. A radiograph is shown in
Figure 5. Treatments should consist of

a. Open reduction and internal fixation using the Russe bone graft technique
   via a volar approach
b. Open reduction and internal fixation with a compression screw via a
   volar approach.
c. Open reduction and internal fixation with vascularized bone graft via a
   volar approach.
d. Open reduction and internal fixation with vascularized bone graft via a
   dorsal approach.
e. A cast brace for 6 weeks.
7) OITE 2006 Question 60
When comparing a formal course of physiotherapy to a regimen of home exercises following an uncomplicated fracture of the distal radius, formal therapy offers which of the following results?

1- No significant benefits
2- Less wrist pain at 1 year
3- Better grip strength at 1 year
4- Better patient satisfaction at 1 year
5- Better hand function at 1 year


8) OITE 2006 Question 102
A 42 year old woman who was treated with cast immobilization for a non-displaced distal radius fracture now reports the sudden inability to extend her thumb. What is the most likely cause of this problem?

1- Entrapment of the FPL
2- Entrapment of the EPL
3- Rupture of the EPL
4- PIN Palsy
5- C7 disc herniation

9) OITE 2006 Question 136
Figures (see below) show the radiographs of a 22 yo man who sustained a wrist fracture. CT scan obtained after closed reduction and splinting are shown in subsequent figures (see figures). Treatment now should include.

1. repeat closed reduction and casting for 6 wks
2. closed reduction and percutaneous pin insertion
3. closed reduction and application of external fixation
4. **open reduction and internal fixation through a dorsal approach**
5. open reduction and internal fixation through a volar approach
A 40-year-old man reports unremitting ulnar-sided wrist pain after undergoing closed treatment of a distal radius fracture 3 years ago. Radiographs are shown in Figures 12a and 12b. What is the next most appropriate step in treatment?

1. distal radius corrective osteotomy
2. ulnar shortening osteotomy
3. wafer procedure
4. **hemiresection arthroplasty**
5. repair of the ulnar styloid nonunion


11) OITE 2004 Question 233
A 32 year old carpenter who underwent casting of a distal radial fracture 8 months ago now reports wrist pain and diminished grip strength. Current radiographs are shown in Figures 75a and 75b. Management should now consist of

1. Proximal row carpectomy
2. Total wrist arthrodesis
3. Physical therapy
4. Ulnar shortening osteotomy
5. **Distal radius corrective osteotomy**
12) OITE 2003 Question 49
A patient with neutral ulnar variance sustains an extra-articular fracture of the distal radius that heals with normal palmar tilt but with loss of radial height. Resultant ulnar variance is measured at +3mm. What percentage of load transmission across the wrist will now be borne by the ulna?

1) 10%
2) 25%
3) 40%
4) 75%
5) 90%

Ref: CORR 1984;187:26-35

Lecture 7: Wrist Instability

1) OITE 2007 Question 78. A 22-year-old man who is right-hand dominant reports a recent increase in right wrist pain. Radiographs are shown in figures 23a through 23c. What joint is the next most likely to be involved in the degenerative progression?

1. Proximal radioscaphoid
2. Mid carpal
3. Radiolunate
4. Scaphotrapezial trapezoid
5. Distal radioulnar
2) OITE 2007 Question 235
A 25yo competitive rower has had dorsal wrist pain for the past 4 wks. Management consisting of oral nonsteroidal antiinflammatory drugs and a volar wrist spint has failed to provide relief. Clinical exam reveals tenderness over the dorsum of the wrist 4cm proximal to the radial styloid and crepitus with wrist motion. Radiographs are normal. The next most appropriate step in management is a cortisone injection into the

1- radiocarpal joint
2- midcarpel joint
3- first dorsal extensor compartment
4- second dorsal extensor compartment
5- fourth dorsal extensor compartment

3) OITE 2007 Question 244
A 39-year-old woman has a 1-year history of increasing left wrist pain. The pain is worse with activity and at night. The patient denies any history of trauma, systemic symptoms, or weight loss. Radiographs of the left wrist and a comparison PA view of the right wrist are shown in Figures 93a through 93c. What is the most appropriate diagnostic test for identifying the cause of her pain?

1- CBC count and basic metabolic profile
2- CT
3- MRI of the wrist
4- Labeled WBC scan
5- Three-phase bone scan
A 32 year-old woman fell onto her outstretched hand 4 weeks ago. Initial radiographs revealed no evidence of fracture; therefore, management consisted of a wrist splint. She now reports increased swelling of the entire hand, intense burning pain, increased sensitivity to touch and a mottled skin color appearance. Repeat radiographs are normal. What is the most likely diagnosis?

1 – compartment syndrome of the forearm
2 – carpal tunnel syndrome
3 – complex regional pain syndrome – type I
4 – allergic reaction to the splint material
5 – rupture of the extensor pollicis longus tendon

5) OITE 2004 Question 38
Figure 9 shows the AP radiograph of a 56-year-old man who has had increasing wrist pain for the past 6 months. He denies any specific trauma to the wrist. What is the most likely diagnosis?
1- Osteonecrosis of the scaphoid
2- Gout
3- Rheumatoid arthritis
4- Scapholunate ligament disruption
5- Radial styloid malunion
Lecture 8: Hand Infections

1) OITE 2006 Question 231
A 35-year-old man has pain, limited motion, and swelling of his middle finger after sustaining a volar puncture wound 3 days ago. Examination reveals a flexed resting posture, pain with passive stretching, and tenderness along the flexor tendon sheath. Appropriate management should consist of

1. outpatient management with oral antibiotics.
2. IV antibiotics alone.
3. surgical drainage over the entire length of the finger.
4. **surgical drainage via small incisions and intraoperative sheath irrigation with a catheter.**
5. needle aspiration of the flexor tendon sheath with continuous irrigation and oral antibiotics.


2) OITE 2003 Question 73
What is the most common infection occurring in a toddler’s and preschooler’s hand?

1. paronychia
2. felon (pulp infection)
3. thenar space abscess
4. **herpetic whitlow**
5. septic flexor tenosynovitis


3) OITE 2002 Question 121
A 22-year-old man is involved in an altercation in a bar 2 hours prior to presenting in the emergency wound. Examination reveals a 1 cm laceration over the MCP joint of the middle finger and an Xray reveals a metacarpal head fracture. He has full active extension of all fingers and can make a fist with minimal pain. Management should consist of

1- IV antibiotics, splinting, and observation.
2- **IV antibiotics and immediate debridement in the operating room.**
3- local wound care and delayed fixation of the metacarpal fracture.
4- irrigation of the wound in the ED, oral antibiotics, and immediate active range-of-motion exercises.
5- insertion of an indwelling joint catheter with serial infusion of antibiotic fluids.


4) OITE 2000 Question 45
A 23-year-old house painter has mild pain and is unable to fully flex his finger after accidentally discharging a high-pressure paint sprayer into the tip of his left nondominant index finger 30 minutes ago. Examination reveals a 3-mm puncture wound over the finger pulp, volar swelling of the digit, mildly restricted motion, and intact neurovascular function. In addition to broad-spectrum antibiotics, management should consist of

1- surgical exploration and chemical debridement.
2- extended surgical exploration and mechanical debridement.
3- hospital admission, elevation, and observation.
4- debridement and irrigation of the puncture wound and observation.
5- distal and proximal flexor sheath decompression and catheter irrigation of the flexor sheath.


Lecture 9: Soft Tissue Coverage

1) OITE 2005 Question 91
A 35-year-old meat cutter sustains a fingertip injury to his ring finger in a meat slicing machine. Examination reveals an oblique wound beginning at the distal interphalangeal joint flexion crease with loss of volar tissue only. There is no exposed bone or tendon. Primary coverage is best achieved with a

1- V-Y advancement flap
2- thenar flap
3- axial flag flap
4- cross-finger flap
5- split thickness skin graft

2) OITE 2004 Question 65
A carpenter sustains an avulsion injury to the dorsal aspect of the proximal phalanx of the thumb. Examination reveals a 2 cm x 2 cm defect with an exposed extensor tendon that is without its paratenon. Coverage should be accomplished by a

1- full thickness skin graft.
2- split thickness skin graft.
3- cross finger flap.
4- **first dorsal metacarpal artery flap.**
5- moberg advancement flap.

3) OITE 2004 Question 48
What is the preferred type of graft for skin loss on the palmar aspect of the hand?

1. Unmeshed split-thickness
2. Meshed split-thickness
3. Multiple pinch
4. **Full-thickness**
5. Full-thickness with attached subcutaneous fat.


4) OITE 2003 Question 95
A 27-year-old chef sustains a traumatic injury to the index finger in an electric mixing machine. Examination reveals an isolated 2cm x 2cm loss of palmar skin over the proximal phalanx with exposure of the flexor tendon. Coverage of this defect is best accomplished with

1. an axial flag flap from the long finger
2. split-thickness skin grafting
3. full-thickness skin grafting
4. a moberg advancement flap
5. a thenar flap


5) OITE 2003 Question 262
An 18-year-old female musician cuts off the tip of her nondominant index finger, transversely removing about 25% of the distal nail bed and the distal tuft of the distal phalanx. The patient brings along the tip. Management should consist of:

1. defatting the tip and suturing it in place as a composite graft
2. a cross finger flap to the tip
3. **a volar V-Y advancement flap**
4. microvascular replantation
5. bone shortening and primary closure
Lecture 10: Rheumatoid Arthritis

1) OITE 2005 Question 151
A 45-year-old man with a history of rheumatoid arthritis reports that he is unable to extend his ring finger. Examination reveals that with active extension, he has a 60 degree extensor lag at the MP joint, but when the finger is passively extended he can maintain it in a fully extended position. Treatment should consist of

1 – sagittal band reconstruction
2 – exploration of the posterior interosseous nerve
3 – flexor tenosynovectomy and resection of one slip of the flexor digitorum sublimis tendon
4 – extensor tenodesis to the EDC tendon of the middle finger
5 – crossed intrinsic transfer


2) OITE 2004 Question 137
Which of the following changes typically occurs in the inflamed synovium in patients with rheumatoid arthritis?

1- Abundant neutrophils
2- Intimal lining hypoplasia
3- Blood vessel proliferation
4- Thickening of the basement membrane
5- Reduction of CD4-positive T cells

3) OITE 1999 Question 79
A 51-year-old woman with rheumatoid arthritis is suddenly unable to actively extend her ring and little fingers on her dominant hand. What is the most likely diagnosis?

1- Volar subluxation of the extensor tendons at the level of the metacarpal heads
2- Posterior interosseous nerve compression at the elbow
3- Intrinsic contractures preventing active extension
4- Attritional ruptures of the extensor tendons at the wrist
5- Cervical radiculopathy


4) OITE 1999 Question 97
A 35 year old woman with rheumatoid arthritis is unable to extend her middle finger. She also reports pain, swelling, and mild restriction of motion of the wrist and finger metacarpophalangeal joints. Examination reveals that the middle finger MCP joint is held in 60 degrees of flexion. When the finger is passively extended, the patient can then actively hold the finger in full extension. Appropriate surgical treatment should consist
of:

1- intrinsic releases  
2- side-to-side extensor tenodesis  
3- **extensor hood reconstruction**  
4- flexor sheath tenosynovectomy  
5- radial nerve decompression

Ref: Green’s *Operative Hand Surgery, 3rd edition* 1993

**Lecture 11: Ulnar Sided Wrist Pain**

1) OITE 2007 Question 102
   
   A 35-year-old man has had ulnar-sided wrist pain after a fall 4 months ago. Radiographs are shown in Figures 32a through 32c, and a CT scan is shown in Figure 32d. Management at this time should consist of

   1. cast immobilization  
   2. open reduction and internal fixation of the hamate  
   3. excision of the hook of the hamate  
   4. **excision of the pisiform**  
   5. pisotriquetral arthrodesis
2) OITE 2004 Question 266
A 28-year-old woman has atraumatic ulnar-sided wrist pain. Management consisting of 6 months of splinting and oral anti-inflammatory drugs has failed to provide relief. A current radiograph is shown if Figure 85.
Treatment should now consist of
1- complete ulnar head excision (Darrach procedure).
2- Limited ulnar head resection (Wafer procedure).
3- Distal radioulnar joint fusion with creation of proximal pseudoarthrosis (Suave-Kapandji procedure).
4- **Ulnar shortening osteotomy** (Milch procedure).
5- Hemisection-interposition arthroplasty of the distal radioulnar joint (Bower’s procedure)


3) OITE 2002 Question 30
What is the most common problem following a Darrach procedure (distal ulna resection)?

1- **Proximal ulna stump instability**
2- Extensor carpi ulnaris subluxation
3- Injury to the dorsal branch of the ulnar nerve
4- Decreased forearm rotation arc
5- Ulnar translation of the carpus


4) OITE 2002 Question 111
A 32-year-old professional baseball player notes an episode of sharp dorsal ulnar wrist pain after swinging at a bad pitch. Examination reveals that extension and ulnar deviation of the wrist elicit a painful snap. What is the most likely diagnosis?

1- Triangular fibrocartilage complex tear
2- Distal radioulnar joint capsule tear
3- **Extensor carpi ulnaris subluxation**
4- Lunotriquetral instability
5- Pisotriquetral instability
Lecture 12: Peripheral Nerve Repair

1) OITE 2005 Question 65
In a second-degree nerve injury or axonotmesis, axon regeneration is almost always complete because which of the following structures remains intact?

1. Myelin sheath
2. Perineurium
3. **Endoneurium**
4. Internal epineurium
5. External epineurium


2) OITE 2004 Question 257
What is the primary function of the peripheral nerve epineurium?

1. provides extension of the blood-brain barrier
2. provides a connective tissue sheath around each nerve fascicle
3. participates in the formation of Schwann cell tubes
4. limits diffusion within the intraneural environment
5. **cushions fascicles against external pressure**

3) OITE 2002 Question 209
Which of the following structures is primarily responsible for the tensile strength and elasticity of a peripheral nerve?

1- Axon
2- **Perineurium**
3- Endoneurium
4- Internal epineurium
5- External epineurium

Lecture 13: Principles of Tendon Transfers

1) OITE 2004 Question 154
Examination of a 20 year-old man who sustained a complete spinal cord injury in a diving accident 6 months ago now reveals 0/5 wrist extension strength, 4/5 biceps, 0/5 triceps, 4/5 deltoid, 0/5 finger flexors, and 0/5 intrinsics. He also has a 15 degree elbow flexion contracture. Surgical treatment to help improve his level of functional independence should include which of the following procedures?

1- **Deltoid to triceps transfer**
2- Latissimus to triceps transfer
2) OITE 1999 Question 149
A 61 year old man has permanent radial nerve palsy following excision of a tumor.
Which of the following sets of transfers will provide the best function?

1- FCU to EDC, PL to EPL
2- FCU to ECRB, FCR to EDC, and FDS to ECU
3- Ring FDS to EDC, FCR to EPL, and PT to ECRB
4- PL to ECRB, PT to EPL, and Ring FDS to EDC
5- PT to ECRB, FCU to EDC, and PL to EPL

Lecture 14: Congenital Anomalies

1) OITE 2008 Question 215. A patient has the hand deformity shown in Figure 93. To achieve the goal of comparable digit length and appearance with the other fingers, what is the appropriate treatment?

1. Compression bandaging before age 3 years
2. Digital nerve stripping via a mid-lateral approach, the second side performed 6 months after the first
3. Hamartoma resection of the median nerve
4. **Epiphysiodesis when the digit reaches adult length of the same sex parent**
5. Skeletal terminalization once overgrowth is detected

2) OITE 2005 Question 256
When evaluating a child with a hypoplastic thumb, the main distinction between a thumb that can be reconstructed versus a thumb that requires ablation is the presence or absence of
1- **a stable carpometacarpal joint**
2- **a stable metacarpophalangeal joint**
3- **intrinsic thenar muscles**
4- **extrinsic thenar muscles**
5- normal cognitive function


3) OITE 2004 Question 120
Successful reconstruction of a hypoplastic thumb, excluding pollicization, is most dependent on which of the following factors?

1. Presence of an extensor pollicis longus tendon
2. Presence of the thenar muscles
3. Presence of the flexor pollicis longus tendon
4. Stability of the metacarpophalangeal joint
5. **Stability of the carpometacarpal joint**


4) OITE 2003 Question 107
What is the most common congenital hand anomaly?

1- Symbrachydactyly
2- Camptodactyly
3- **Syndactyly**
4- Polydactyly
5- Constriction ring syndrome

References: Miller 342-343; OKU 7: 329-337

5) OITE 2002 Question 157
A 9-month-old infant has a hypoplastic thumb. Examination reveals a narrow thumb-index web space, hypoplasia of the intrinsic thenar muscles, and thumb carpometacarpal (CMC) and metacarpophalangeal (MCP) instability. The thumb is radially abducted. Radiographs of the thumb show full complement of bones, but they are hypoplastic relative to the contralateral normal thumb. Reconstruction should consist of

1- ring sublimis opponensplasty, long sublimes flexorplasty, and extensor indicis proprius transfer for extension.
2- CMC and MP fusion in palmar abduction.
3- adductor digiti minimi opponensplasty, extensor indicis transfer for thumb extension, and release of anomalous abductor pollicis brevis.

4- **thumb ablation and index pollicization.**
5- vascularized second toe metatarsophalangeal joint transfer to the CMC joint and abductor digiti minimi opponensplasty.


6) OITE 2000 Question 83
Camptodactyly is most commonly caused by

1- volar skin deficiency.
2- volar plate contractures.
3- abnormalities of the palmar fascia and Landsmeer ligament.
4- articular deformity of the proximal interphalangeal joint.
5- **anomalalous lumbrical and superficialis insertions.**


**Lecture 15: Fractures of the Hand**

1) OITE 2008 Question 91. Figures 34a and 34b (below) show the radiographs of a patient who sustained and injury to his thumb. The muscles that are the deforming forces are innervated by the
1. median nerve, recurrent motor branch
2. anterior interosseous nerve
3. posterior interosseous nerve
4. **posterior interosseous and ulnar nerves**
5. ulnar nerve
2) OITE 2008 Question 100. Figures 39a-b show the radiographs of a 27-year-old man who fell on his middle finger. Which of the following factors is the most important determinant of final outcome?
1-Anatomic reduction of the middle phalanx articular surface
2-Reattachment of the volar plate to the base of the middle phalanx
3-Keeping the middle phalanx reduced on the condyles of the proximal phalanx
4-Continuous passive motion in the postoperative period
5-Stable internal fixation

3) OITE 2007 Question 24
An 18-year-old patient reports pain in the left little finger after a fall 3 weeks ago. Examination reveals swelling of the finger and no active range of motion. A clinical photograph and radiographs are shown in Figure 7a. Treatment should consist of

1. extension splinting
2. closed reduction and splinting for 5 weeks
3. open reduction and repair of the collateral ligaments
4. open reduction and extraction of the volar plate
5. open reduction and repair of the flexor tendon
4) OITE 2007 Question 218
A 19-yo man reports stiffness and pain after sustaining a jamming injury to his little finger 6 weeks ago. AP and lateral radiographs are shown in Figures 81a and 81b. Management at this time should consist of

1- immediate range-of-motion exercises
2- extension splinting of the proximal interphalangeal (PIP) joint
3- closed reduction and percutaneous pinning of the PIP joint
4- **open reduction and central slip repair**
5- open reduction and lateral band reefing

5) OITE 2005 Question 130
A 29 year-old woman injures her wrist in a fall from a ladder. Radiographs and a sagittal CT scan are shown in Figures 41a to 41c. Management should consist of:
1- Cast immobilization
2- cast immobilization with electric stimulation
3- **open reduction and internal fixation**
4- percutaneous fixation
5- vascularized bone grafting


6) OITE 2004 Question 21
A 35 year old woman who has had chronic pain in her palm after falling 6 months ago now notes persistent paresthesias in her ring and small fingers. Current radiographs are shown in figures 3a and 3b. Based of these findings treatment should consist of

1- arthrodesis of the 4th and 5th CMC joints.
2- lunotriquetral arthrodesis.
3- excision of the pisiform.
4- **excision of the hook of the hamate**.
5- neuroplasty of the ulnar nerve in Guyon’s canal.
7) OITE 2003 Question 143
A 24-year-old hockey player has persistent, deep hypothenar palm pain after falling with his arm extended behind him. Plain radiographs and special radiographic views fail to show any abnormalities. What study will provide the most cost-effective diagnosis?

1- Bone scan
2- Ultrasound
3- CT
4- Electrodiagnostic studies of the median and ulnar nerves
5- MRI of the wrist


8) OITE 2002 Question 273
A 19-year-old man has hand pain after striking a wall with a clenched fist. Examination reveals swelling and tenderness at the dorsum of the hand. AP and lateral radiographs do not show any obvious pathology. Which of the following imaging studies should be ordered next?

1- CT scan
2- 30 degree pronated view
3- 45 degree supinated view
4- Carpal tunnel view
5- Clenched fist view

Ref: Bora FS et al: JBJS-A 1974;56:1459-1463

Lecture 16: Amputations and Replantations

1) OITE 2008 Question 61. A patient undergoes index finger distal interphalangeal joint disarticulation. At clinic follow-up, the patient reports proximal interphalangeal extension when attempting to flex the finger. To correct this problem, treatment should include.

1- sectioning of the central slip
2- tenotomy of the radial lateral band
3- tenolysis of the terminal tendon
4- advancement tenodesis of the flexor digitorum profundus
5- transfer of the extensor indicis proprius to the flexor digitorum superficialis
2) OITE 2008 Question 254. Amputation at which of the following levels is a relative contraindication to replantation?
1. digit at the middle phalanx neck
2. **digit through the proximal phalanx shaft**
3. midpalmar crease
4. proximal wrist crease
5. midforearm

3) OITE 2007 Question 257
Which type of traumatic amputation is a contraindication for attempted replant?

1. Thumb metacarpophalangeal joint
2. **Index finger proximal interphalangeal joint**
3. Mid-palm of all four fingers
4. Middle finger middle phalanx
5. Index and middle finger distal interphalangeal joints


4) OITE 2006 Question 45
Following successful replantation of a finger, what is the most common secondary surgery likely to be performed?

1. Capsulotomy
2. Arthrodesis
3. **Tenolysis**
4. Neurolysis
5. Delayed amputation


5) OITE 2006 Question 71
Establishment of blood flow after replantation may lead to reperfusion injury, possibly the result of ischemia-induced hypoxanthine conversion to xanthine. What is the best adjunctive therapy agent to decrease xanthine production?

1. Heparin
2. Dextran
3. **Allopurinol**
4. Aspirin
5. Tissue plasminogen activator

6) OITE 2006 Question 265
In a healthy patient with an acute amputation of the upper extremity, all of the following are considered absolute indications for replantation EXCEPT the

1. Thumb at the level of the metacarpal neck
2. **Index finger at the level of the proximal phalanx**
3. Complete hand through the palm
4. Forearm through the radial metaphysis
5. Index, middle, and ring fingers through the proximal phalanges


7) OITE 2005 Question 193
Which of the following factors is considered most predictive of survival after digital replantation surgery:

1. Patient Age
2. Patient Gender
3. Ischemia Time
4. **Mechanism of Injury**
5. History of Smoking


8) OITE 2005 Question 239
Six hours after a successful replantation of a thumb, skin temperature of the digit has decreased from 93.1 (34 C) to 86 (30 C). What is the best course of action?

1- Administer IV urokinase immediately
2- Administer a stellate block
3- Increase the room temperature
4- **Inspect the dressing for any constriction**
5- Check the hematocrit
9) OITE 2004 Question 97
A 30-year-old construction worker sustains a traumatic amputation of his ring finger at the level of the PIP joint. Treatment the day of injury consists of primary closure after the FDP tendon is first sutured over the remaining end of the middle phalanx. What is the most likely complication?

1- Lumbrical-plus deformity to the ring finger
2- Intrinsic-plus deformity to the hand
3- Extrinsic-plus deformity to the hand
4- Extrinsic-minus deformity to the hand
5- Quadrigia effect to the hand

Lecture 17: Dupuytren’s Disease

1) OITE 2004 Question 133
What type of cell is associated with the pathogenesis of Dupuytren’s contracture?

1 – Atypical macrophage
2 – Myofibroblast
3 – Tenocyte
4 – Dermatocyte
5 – Fibroblast

2) OITE 2004 Question 267
All of the following structures may be involved in Dupuytren’s contracture EXCEPT:

1- Cleland’s ligament.
2- Grayson’s ligament.
3- The natatory ligament.
4- The lateral digital sheet.
5- The spiral band.

3) OITE 2001 Question 258
When performing palmer fasciectomy for Dupuytren’s contracture, what other procedure should not be performed at the same time?

1- trigger finger release
2- Intraoperative digital nerve laceration repair
3- Knuckle pad excision
4- PIP joint arthrodesis
5- Carpal tunnel release

Ref: Nissenbaum M, et al. JHS 1980;5A:544
4) OITE 2001 Question 271
Surgical treatment for Dupuytrens is indicated when contractures are:

1. mp >60, pip any degree
2. mp and pip >40
3. mp >30 and a PIP any degree
4. mp any degree, pip >/= 30
5. any mp or pip.

5) OITE 2000 Question 208
What structure passes beneath the neurovascular bundle and changes its normal anatomic area in the finger, putting the bundle at risk for injury during surgery for Dupuytren’s disease?

1- Pretendinous band
2- Spiral band
3- Lateral cord
4- Natatory cord
5- Central cord

Ref: McFarlane RM Plast Reconst Surg 1974;54:31-44.

Lecture 18: Compressive Neuropathy

1) OITE 2008 Question 21. A 41 yo male laborer reports the insidious onset of weakness in his dominant right arm. He cannot recall a specific traumatic event. He notes that he can no longer extend his fingers or thumb. He can extend his wrist in a radial direction, but it is weak. Biceps and triceps strength is normal. Electromyography after 3 monts of observation reveals no reinnervation potentials. What is the next step in management?

1. Continued observation
2. Decompression of the radial tunnel
3. Transfers of the flexor carpi radialis to the finger extensors and the Palmaris longus to the extensor pollicis longus
4. Four-tailed tendon transfer of the extensor carpi radialis longus to the extensor hoods of all four fingers.
5. Oberlin nerve transfer using ulnar nerve motor fascicles

2) OITE 2008 Question 34. Which of the following correctly lists the contents of the carpal tunnel?

1. flexor carpi radialis, flexor digitorum sublimis, flexor digitorum profundus, flexor pollicis longus, median nerve
2. flexor carpi radialis, flexor digitorum sublimis, flexor digitorum profundus, flexor pollicis longus, medial nerve, palmar cutaneous nerve
3. flexor digitorum sublimis, flexor digitorum profundus, median nerve, radial artery
4. *flexor digitorum sublimis, flexor digitorum profundus, flexor pollicis longus, median nerve*
5. *flexor digitorum sublimis, flexor digitorum profundus, flexor pollicis longus, median nerve, ulnar nerve*

3) OITE 2008 Question 147. A 6-year old boy has symptoms and findings consistent with carpal tunnel syndrome. He most likely has which of the following conditions?

- Hypothyroidism
- Neurilemmoma
- Type 1 diabetes mellitus
- **Pseudo-Hurler’s syndrome**
- Goldenhar syndrome

4) OITE 2007 Question 64. A 42-year-old woman has had weakness in her right hand for the past 3 weeks. There is no history of trauma and she denies tingling in her fingers. Examination reveals no weakness of thumb opposition normal two-point discrimination in all fingers, absent thumb interphalangeal joint flexion, and absent distal interphalangeal flexion of the index finger. The initial treatment should include

1. cervical fusion
2. **observation**
3. carpal tunnel release
4. ulnar nerve transposition
5. first rib resection


5) OITE 2006 Question 242
Use of cock-up wrist splints for carpal tunnel syndrome is most useful for

a. improving nerve conduction velocities
b. improving thenar muscle weakness
c. improving sensation in the median nerve distribution
d. **improving nocturnal symptoms**
e. delaying the need for surgery
f. Gerritsen et al. JAMA 2002; Omer, G. Hand Clinic 1992

6) OITE 2006 Question 248
A 45 yo woman who works as a typist report numbness and tingling in both hands by the end of the work day. In the morning, she generally feels well. Throughout the day she notes increasing fatigue and numbness in both hands that is worse in the little and ring fingers, but all fingers are affected. Specific motor and sensory testing and
electrodiagnostic tests are normal. A neck examination is normal. Radiographs of the cervical spine reveal normal alignment. What is the most likely diagnosis?

a. Central cervical disk herniation  
b. Thoracic outlet syndrome  
c. Bilateral carpal tunnel syndrome  
d. Bilateral shoulder impingement  
e. Bilateral ulnar nerve entrapment


7) OITE 2005 Question 55
An otherwise healthy 60-year-old woman has had intermittent pain, numbness and tingling in the thumb, index and middle fingers of her right hand for the past 6 months. She reports that these symptoms awaken her from sleep nightly. Two cortisone injections into the carpal tunnel temporarily resolve her symptoms for 2-4 weeks after each injection. Electrodiagnostic studies are normal. What is the best course of action?
1. Repeat electrodiagnostic studies  
2. MRI of the cervical spine  
3. Carpal tunnel release  
4. Release of the median nerve in the proximal forearm  
5. Referal to a pain clinic


8) OITE 2005 Question 195
A 65-year-old woman who has a distal radius fracture and mild parasthesias in the median nerve distribution undergoes open reduction and internal fixation through a limited Henry approach. One day after surgery, she reports dense numbness in the same distribution and worsening wrist pain. Pre- and postoperative radiographs are shown in Figures 68a through 68d. Management should now consist of:

1. immediate hardware removal and internal fixation  
2. immediate carpal tunnel release  
3. immediate nerve conduction velocity studies  
4. carpal tunnel release in 6 weeks if her symptoms remain unchanged  
5. nerve conduction velocity studies in 6 weeks if her symptoms remain unchanged

9) OITE 2004 Question 210
Following open carpal tunnel release, grip strength is expected to return to preoperative levels by how many weeks?

1- 4  
2- 6  
3- 8  
4- 12  
5- 20


10) OITE 2003 Question 208
What percentage of patients who receive a steroid injection for carpal tunnel syndrome will experience at least transient relief of their symptoms?

1- 0%  
2- 20%  
3- 50%  
4- 80%  
5- 100%

8) OITE 2002 Question 104
A 60-year-old woman who has had pain and numbness in her thumb, index, and long fingers underwent an uneventful open carpal tunnel release. Postoperatively, she reports complete resolution of her symptoms but now notes progressive thenar atrophy that was not present prior to surgery. What is the most likely cause of this finding?

1- Incomplete release of the transverse carpal ligament  
2- Cervical radiculopathy  
3- Unrecognized Martin-Gruber anastomosis  
4- Unrecognized transligamentous motor branch of the median nerve  
5- Median artery pseudoanuerysm

Lanz “Anatomical variations of the median nerve in the carpal tunnel”

11) OITE 2002 Question 172
What is the most likely cause of atraumatic entrapment of the ulnar nerve at Guyon’s canal?

1- Ulnar artery thrombosis  
2- Ganglion cyst  
3- Anomalous muscle  
4- Schwannoma  
5- Osteophyte

Lecture 19: Vascular disorders of the hand

1) OITE2006 Question 208
A 19-year-old man sustained a laceration to his palm that was repaired primarily in the emergency department 3 weeks ago. He now reports a tender pulsatile mass in his palm and intermittent tingling and numbness of his ring and little fingers. A clinical photograph of the mass is shown in Figure 83. What is the next most appropriate step in management?

1. MRI
2. Electromyography and nerve conduction velocity studies
3. Intra-arterial urokinase infusion
4. Ethanol embolization
5. Surgical Exploration


2) OITE 2004 Question 86
Which of following best describes the anatomic relationship of the digital artery and nerve?
1- Nerve ulnar to artery
2- Nerve radial to artery
3- **Nerve palmar to artery**
4- Artery palmar to nerve
5- Artery lateral to nerve


3) OITE 1997 Question 87
A 38-year-old construction worker with no history of trauma has had a painful swelling in the hypothenar eminence of his dominant hand for the past 4 weeks. He also reports numbness in the ulnar two digits and cold intolerance. Which of the following studies is most useful for diagnosis?

1- CT scan
2- Bone scan
3- **Arteriogram**
4- Doppler ultrasound
5- Electrodiagnostic study


4) OITE 2005 Question 28
A 17-year-old boy reports deformity, occasional pain, and intermittent ulceration of his middle finger. A clinical photograph and an MR angiogram are shown in Figures 8a and 8b. Treatment should consist of

1- Proximal ligation of the radial digital artery
2- Ray amputation of the middle finger
3- Disarticulation through the proximal interphalangeal joint
4- Embolization of the lesion
5- Resection of the lesion


**Lecture 20: Elbow**

1) OITE 2008 Question 83. A 38 yo male laborer has anterior elbow pain and proximal forearm pain in his dominant extremity. He denies any history of an inciting traumatic events. Nonsurgical management for the past 4 months has failed to provide relief. Examination reveals that the biceps tendon is palpably intact. He has pain with forced
pronation. MRI scans are shown in Figure 30a and 30b. What is the preferred treatment at this time?

1 Exploration, detachment, and repair of the biceps tendon
2 Arthroscopic debridement of the biceps tendon
3 Anterior exploration and decompression of the radial tunnel
4 Release of the lacertus and intramuscular lengthening of the brachialis
5 Excision of an anterior elbow capsular ganglion

2) OITE 2008 Question 194. A 45-year-old roofer reports gradually worsening pain on the lateral aspect of his right elbow for the past 6 weeks. Examination reveals pain with resisted wrist extension and pinch activities with the wrist flexed. What muscle is most commonly involved in causing this type of pain?
1- Brachioradialis
2- Extensor indicis proprius
3- Extensor carpi radialis longus
4- **Extensor carpi radialis brevis**
5- Anconeus

3) OITE 2007 Question 40
A 65-year-old woman has increasing pain in her elbow. She notes severe morning stiffness and pain throughout the day and with almost any activity. She chronically requires oral pain medication. Examination reveals an arc of motion from 30 to 100 degrees, with crepitus in both flexion and extension, as well as with pronation and supination. Radiographs are shown in Figures 12a and 12b. Treatment should consist of

1. corticosteroid injection and therapy.
2. therapy modalities.
3. **total elbow arthroplasty.**
4. arthroscopic debridement.
5. open elbow debridement and radial head excision
A 7 year old boy has had a stiff right elbow after falling off playground equipment 1 month ago. The child has some pain at the time of injury but currently has minimal pain. Examination reveals decreased active motion. Current radiographs are shown in figures 50a and 50b. Management should now consist of:

1. open reduction and casting in 65 degrees of flexion and pronation
2. **open reduction and casting in 90 degrees of flexion and supination**
3. closed reduction and casting in 90 degrees of flexion and supination
4. 3 weeks of casting, followed by repeat clinical examination and radiographs
5. physical therapy and dynamic flexion bracing
Rockwood fractures in children pages 873-878

5) OITE 2004 Question 151
A 35 year old man has pain in the antecubital fossa after lifting a couch. Examination reveals limited active flexion and supination secondary to pain. Palpation reveals significant pain over the antecubital fossa without a palpable defect. Management should consist of

1. Immobilization in a long arm cast at 90 degrees of flexion for 6 weeks
2. Immobilization in a sling for 3 weeks, followed by occupational therapy
3. Open exploration of the biceps tendon
4. Immediate active-assisted range of motion
5. MRI to evaluate the distal biceps tendon

6) OITE 2002 Question 28
A 17-year-old pitcher reports pain over the medial aspect of the elbow that occurs during the acceleration phase of throwing, and it prevents him from throwing at the velocity needed to be competitive. What structure has likely been injured?

1- Pronator teres
2- Flexor carpi ulnaris
3- Radial collateral ligament
4- Anterior bundle of the ulnar collateral ligament
5- Posterior bundle of the ulnar collateral ligament