Corrective Therapies and Surgical Procedures for Hand Disorders

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Objectives

1. Understand how to treat upper extremity trauma cases

2. Understand the common hand conditions

3. Identify surgical and non-surgical options
Outline

1. Trauma cases
2. Common Hand Problems
   a. Tendon Problems
   b. Hand and Wrist Arthritis
   c. Carpal Tunnel Syndrome
   d. Ganglion Cysts
   e. Dupuytren's Contracture
   f. Base of Thumb Arthritis
Diagnosing Hand Conditions

• Complete History
  • If Trauma
    • Type of trauma
    • When and where
    • Previous injuries
    • Level of function prior to injury

• Complete Physical Examination
  • Attention to detail

• X-ray
  • occasionally more detailed imaging studies are required i.e. MRI/CT

• Non-Surgical vs. Surgical options
Trauma Case

30 year old male with SEVERE arm deformity after roll over ATV.

LETS RIDE THE ATV TOGETHER HE SAYS

ITS WILL BE FUN HE SAYS
Steps

1. Irrigation and debridement of wound, fixation of bone, wound vac

2. IV abx for 72 hrs of open fracture

3. Splint/ Ice/ Elevation **** (often forgotten)
Next Steps

1. Multiple surgeries for I&D

2. Ultimately multiple tendon repairs and skin grafting
Fingertip injuries

62 year old male with saw injury to hand
- Needs coverage of exposed tendons
- Can’t skin graft over tendons
Cross Finger Flap- Healed
EMERGENT ORTHO CONDITIONS

** Compartment Syndrome**
Signs of compartment sx (5 P’s)

1) Pain
2) Pallor (Pale skin tone)
3) Paresthesia (numb)
4) Pulseless
5) Paralysis
Common Hand Problems

Tendon Problems

- Lateral epicondylitis (Tennis elbow)
- DeQuervain's tenosynovitis
- Trigger finger/trigger thumb
- Medial epicondylitis

THE PAIN IS EXCRUCIATING

BUT MY HANDS ARE STUCK LIKE THIS BECAUSE OF THE ARTHRITIS!
Common Hand Problems

• Hand and Wrist Arthritis
  – Arthritis literally means “inflamed joint.”
  – Osteoarthritis is the most common type of arthritis in the older population
    • caused by injuries, overuse, muscle strain, or fatigue.
• Carpal Tunnel Syndrome
• Ganglion Cysts
• Dupuytren's Contracture
Lateral Epicondylitis

Signs and symptoms

– Pain is located over the outside aspect of the elbow
– Pain usually starts at the elbow and may travel down the forearm
Lateral Epicondylitis Surgery
DeQuervain's Tenosynovitis

Signs and symptoms

- Pain, tenderness and swelling of the wrist below the thumb
DeQuervain's Surgery
Trigger Finger

Symptoms

- Stiffness, a popping or clicking sensation, and tenderness in the affected finger
Trigger Finger
Ganglion Cysts

- Diagnosis is usually based on the location of the lump and its appearance.
- Symptoms: Pain at site of mass
Ganglion Cysts
Carpal Tunnel Syndrome

• Caused by the median nerve being compressed at the wrist

• Appears to be caused by a combination of genetic and environmental factors

• Some of the predisposing factors include:
  - diabetes, obesity, pregnancy, hypothyroidism, and heavy manual labor

1 out of 20 people in the US
Carpal Tunnel Syndrome

Symptoms

• **Numbness, tingling, or burning** sensations in the thumb and fingers, in particular the index, middle fingers +/- ring finger

• Usually are felt during the night

Other symptoms

– Difficulty gripping objects
– Difficulty making a fist
– Pain at the wrist
Carpal Tunnel Syndrome
Carpal Tunnel Syndrome

Treatments may include:

- Ergonomic changes
- Night Splints
- Steroid injections
- Surgery
  - Mini-open
  - Endoscopic
Carpal Tunnel Syndrome
Mini-Open
Carpal Tunnel Syndrome
Endoscopic
Carpal Tunnel Syndrome
Dupuytren’s Disease

– Abnormal thickening of the tissue just beneath the skin known as fascia
– Causes the fingers to contract
– Ring and small fingers are the most common
– People of Northern European or Scandinavian descent.
Nonsurgical Treatment
Surgery
BASE OF THUMB ARTHRITIS

SYMPTOMS AND SIGNS

- The most common symptom is pain at the base of the thumb.

- Pain can be aggravated by activities that require pinching.

- Opening jars, turning door knobs or keys, and writing

- Severity can also progress to pain at rest and pain at night.
In a normal joint, cartilage covers the end of the bones and serves as a shock absorber to allow smooth, pain-free movement.

The cartilage layer wears out, resulting in direct contact between the bones and producing pain and deformity.
Non-Surgical Treatment

- Splinting
- Steroid Injections
- NSAIDs (oral vs topical)
  - Ice