Joint Aspiration and Injection
(and soft tissue)

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Objectives

• Joint Aspiration (Arthrocentesis) & Injection
  • Indications
  • Contraindications
  • Method

• Soft tissue injection
  • Indications
Joint Aspiration

Indications:

1. Diagnostic:
   - Evaluate an acutely swollen and inflamed ‘hot’ joint
   - Rule out Infection (most important)
   - Analyze synovial fluid
     - Characterize mono - or polyarthritis
       - Inflammatory
       - Degenerative
       - Crystalline (Gout, pseudo gout)
Joint Aspiration

Indications:

2. Therapeutic:
   • Drain large effusions / haemarthrosis
     • Symptomatic relief
     • Improves function
Joint Aspiration

- **Contraindications:**
  - Prosthetic joint
  - Overlying cellulitis
  - Active skin disease (e.g. psoriatic lesions at the site of injection)
  - Flare in the joint post-injection when performed previously
  - Bleeding diathesis
    - anticoagulation, hemophilia, thrombocytopenia
    - not an absolute contraindication, but be careful
  - Two weeks before planned Arthroplasty
Joint Aspiration

- Complications:
  - Infection
    - very rare if good sterile technique (<1:10000)
  - Bleeding / Haemarthrosis
  - Vasovagal syncope
  - Pain
  - Cartilage injury
    - Poor technique
What to do with Aspirate?

• Check yourself
  • Clear colorless: normal
  • Clear yellow:
    • can read through:
      • non-inflammatory
  • Turbid: Inflammatory
  • Pus
  • Blood

Images from Alan N. Brown (http://clinicaldepartments.musc.edu/medicine/divisions/rheumatology/student_lectures/joint%20aspiration.pdf)
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What to do with Aspirate?

- Send for
  - Cell count with differential
    - in purple-top tube
  - Gram stain / Culture and sensitivity
    - in sterile container or red-top tube
  - Crystals
    - In red-top tube
  - Glucose, Total Protein
Joint Injection

Medications:

• Steroids
• Local anesthetics +/-
• Other material:
  • Hyaluronic acid ?
  • Glucosamine ???
  • Chondroitin ???
Joint Injection

Indications:

1. Inflammatory arthritis
   - (e.g. rheumatoid arthritis, spondyloarthropathies)
   - Up to six months improvement from a single joint injection
Joint Injection

Indications:

2. Osteoarthritis (OA)
   - A weaker indication for steroid injection
Soft Tissue Injection

Treatment of localized inflammation:

- Bursitis
  - Trochanteric, subacromial, prepatellar, olecranon)
- Flexor tenosynovitis (Trigger finger / thumb)
- Tenosynovitis (DeQuervain’s)
- Lateral epicondylitis (Tennis elbow)
- Medial epicondylitis (Golfer’s elbow)
- Plantar faciitis
- Adhesive capsulitis – Frozen shoulder
- Carpal tunnel syndrome