Treatment of the large joint pain with ultrasound guidance assistance

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Epidemiology

1. Injuries (industrial, car accidents and recreational/professional sports injuries)
2. Aging population
3. Frequent joint surgeries (ORIF’s and arthroscopies)

Raise in degenerative joint disease (especially large joints)
What do we see in real life?

1. Pain complaint
2. Stiffness
3. Pain and stiffness
4. Instability?
5. Weakness
Rapid diagnosis

1. Physical examination (pain, range of motion, stability, joint fluid/inflammation)
2. X-rays (pathologic alignments, degree of degenerative changes)
3. MRI’s (tendon/ligament or muscle injury, cartilage damage)
4. Ultrasound examination (primary vs. secondary test)
Rapid treatment

1. Medications (NSAID’s, topicals and narcotics, antidepressants)
2. Physical therapy (targeted)
3. Aspirations and injections (steroids, viscosupplementation, PRP?)
4. Surgery
5. More physical therapy (restorative)
1. ORIF’s of the fractures (precise reconstruction of the joint surfaces)
2. Arthroscopies (ligamental, meniscal, labrum, muscle/tendon repairs and debridements, bone and cartilage modifications)
3. Total/partial joint replacements (definitive treatment)
Outcomes

1. Relief of pain (how much and for how long?)
2. Improved range of motion (if possible)
3. Improved functionality
4. Maintenance of pain control and function
5. Resumption of employment and improvement of life quality and extension of lifespan
Injections

1. Blind (based on palpation of anatomic landmarks)
2. X-ray guided (bony landmarks, radiation and use of dye)
3. Ultrasound guided (portability, soft tissue visualization, live needle and medications placement, no radiation/dye)
Ultrasound guided injections

- Knee joint:
  - 1. Needle insertion: Medial, lateral and suprapatella pouch approaches
  - 2. Navigation: In and out of plane needle advancement
  - 3. Confirmation: Hydrodissection and intraarticular fluid expansion
Ultrasound guided injections (cont.)

- Shoulder injections
- 1. Anatomic structures: subacromial space, glenohumeral joint, acromioclavicular joint, bicipital tendon sheath
- 2. Approaches: anterior, lateral, posterior and superior
- 3. Navigation: needle length and marking joint and tendon/muscle spaces
- 4. Confirmation: fluid expansion and pain blockade
Ultrasound guided injections (cont.)

- Hip joint:
  1. Anterior approach, intracapsular
  2. In-plane needle guidance
  3. Intraarticular fluid expansion for confirmation
Now start practicing

- Steps to successful scanning:
  1. Understanding principles of imaging
  2. View sonoanatomy
  3. Learn technique
  4. Practice cases

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