

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
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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)
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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)
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Surgeries

- ▶ 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)
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Outcomes

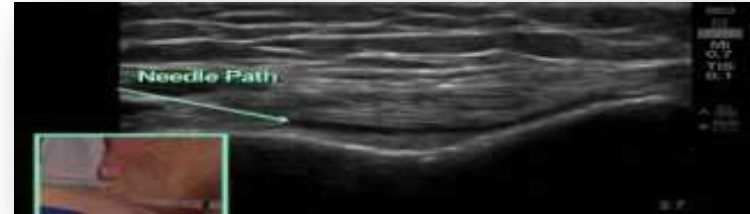
- ▶ 1. Relief of pain (how much and for how long ?)
 - ▶ 2. Improved range of motion (if possible)
 - ▶ 3. Improved **functionality**
 - ▶ 4. **Maintenance** of pain control and function
 - ▶ 5. Resumption of employment and improvement of life quality and extension of lifespan
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Injections

- ▶ 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)
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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
- ▶ For more information visit:

www.sonosite.com/education/learning

