

Knee Arthrocentesis/Injection

Before the Procedure

1. Comprehensive Knee Exam

- Assess intra vs extra-articular fluid collections
- Assess skin over insertion site
- Assessing for an acceptable target
 - Palpate the “soft spot” between the border of the patellar tendon, the tibial plateau, and the femoral condyle.
 - 1cm lateral and 1 cm inferior to the infero-lateral aspect of the patella

2. Indications

- Diagnostic: infectious, rheumatic, traumatic, crystal induced.
- Therapeutic: fluid removal for pain relief, symptom control with steroid injection
- Localized pain persists weeks after trial of NSAIDs
- Risks of NSAIDs outweighs risk of local corticosteroids.

3. Contraindications

- Cellulitis or broken skin over entry site
- Uncontrolled Anticoagulant/Diabetes
- Severe primary coagulopathy
- Infected effusion, bursa, or peri-articular structure (injection)
- Do not perform injection on suspected septic arthropathy
- Allergies to injected meds
- Do not inject TKA – refer to ortho

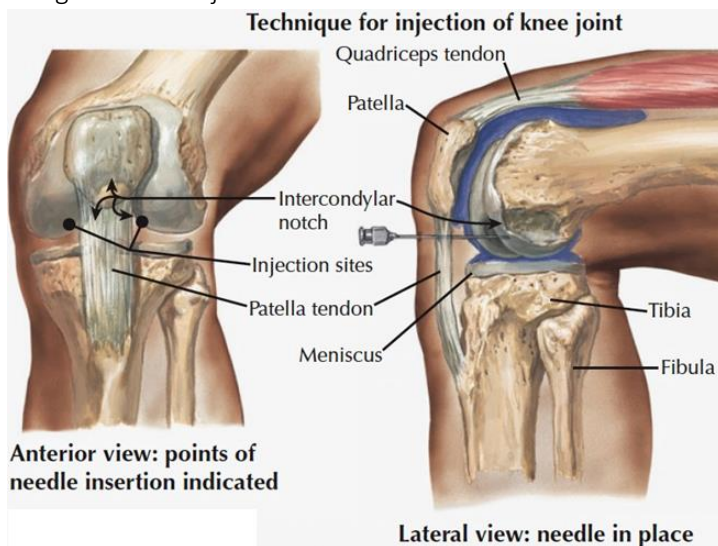
- ≥3 previous injection in preceding 12 month period

4. Obtain Verbal or Written Consent

- Risks, benefits, alternatives.

5. Equipment

- General Supplies
 - Non-sterile gloves
 - Povidone-iodine stick
 - Alcohol prep pad
 - Band-Aid
- Injection
 - 1% Lidocaine without epi vial Multi-use (2-5ml)
 - 40 mg Kenalog
 - 5 ml syringe
 - 22 gauge, 1.5” needle
 - Band-Aid
- Arthrocentesis **STERILE INJECTION SITE**
 - Povidone-iodine stick
 - 60 ml sterile syringe
 - 18-21 gauge, 1.5” needle
 - Band-Aid
 - Testing supplies (purple and red top tubes)



Scan QR code with smart phone camera to access McMaster procedural video on knee injection.

During The Procedure

1. **“Time-out”** protocol to verify patient, side, and site of arthrocentesis/injection.
2. **Attending present** during the procedure.
3. **Prepare Equipment**
 - a. Put your gloves on
 - b. Draw up 2 ml Lidocaine, then 1ml Kenalog.
SHAKE WELL
 - c. Have specimen tubes available.
 - d. Bandage opened and ready
4. **Patient Positioning**
 - a. Injection:
 - i. Patient sitting on exam table or reclined
 - ii. Flex knee between 70-90°
 1. Provider positioned in front of patient.
 2. You can use your legs to immobilize/support the patient’s leg
 - b. Aspiration:
 - i. Patient supine with straight leg. Rolled towel under popliteal fossa
 - ii. Provider positioned on the same side of affected joint.
5. **Marking entry site** with marker or pen cap.
 - a. Palpate the “soft spot” between the border of the patellar tendon, the tibial plateau, and the femoral condyle.
 - b. 1cm lateral and 1 cm inferior to infero-lateral aspect of patella
 - c. Can be mirrored for medial approach
6. **Prep Knee**
 - vi. With Povidone-iodine stick –use circular motions from target outward.
 - vii. Repeat process with alcohol pad
7. **Approach**
 - i. Tell the patient when you will begin
 - ii. Advance needle from the point of entry parallel with tibial plain at 30-45 degrees towards midline approximately 1-1.5 inches.
 1. Don’t need to “hub” the needle
 - iii. Go slow so not to hit bone/cartilage.
- b. Injection:
 - i. May feel “pop” of entering joint space
 - ii. Aspirate to verify you are not in a blood vessel
 - iii. Inject medication – if difficult, stop and confirm position
 1. May need to advance a little further
 2. If on bone, pull back slowly.
 - iv. Remove needle and place bandage.
- c. Arthrocentesis: ****STERILE INJECTION SITE****
 - i. Aspirate as you advance, stop advancing after synovial fluid collecting.
 - ii. Aspirate as much fluid as possible, massage effusion with opposite hand.

After the Procedure

1. **Aftercare Instructions for Patient**
 - a. Injections: Wrap up→Patient instructions:
Corticosteroid Joint Injection
 - i. .IMCINJECTIONPTINSTRUCTIONS
 - b. Arthrocentesis: Wrap up→Patient instructions: Arthrocentesis
2. **Place Order in EPIC**
 - a. Wrap up→Charge Capture: PR arthrocentesis aspir&inj major jt/bursa w/o US (aka injection)
 - i. PR 20610
3. **Document Procedure in EPIC**
 - a. .IMCINJECTION
 - b. .IMCASPIRATION
4. **Synovial fluid analysis** – (Consider your differential when ordering workup)
 - a. Appearance (should be pale straw color), viscosity (should have stringing effect when expressing fluid 1 drop at a time from syringe).
 - i. Inflammatory fluid will not have stringing (lower viscosity)
 - b. body fluid cell count with differential -Purple
 - c. Body fluid crystal -Purple
 - d. gonococcus culture -Red
 - e. Aerobic and anaerobic culture with stain – Red
Clean the top before transferring fluid
 - f. Serum ESR/CRP
 - g. Serum uric acid
 - h. Do not order: synovial glucose, protein, LDH, LA, autoantibodies.

Sources:

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- Thompson, J. C., Netter, F. H., G., M. C. A., & Craig, J. A. (2016). Netter's concise orthopaedic anatomy. Saunders Elsevier.

