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November 2011 (Vol. 60, No.11)

November 2011 · Vol. 60, No. 11 Suppl: S48-S49

Intra-Articular Injections of the Knee: A Step-by-Step Guide

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Although some training is required, intra-articular injections are no longer considered an orthopedic subspecialty procedure, and there are a number of benefits to incorporating these injections into your practice. Many patients appreciate their primary care clinician making available services that traditionally required a referral to a specialist. Patients also avoid treatment delays.

Here is a step-by-step guide to familiarize you with the technique.

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STEP 1: SELECTING AN INJECTION APPROACH

Common approaches for injecting the knee include the

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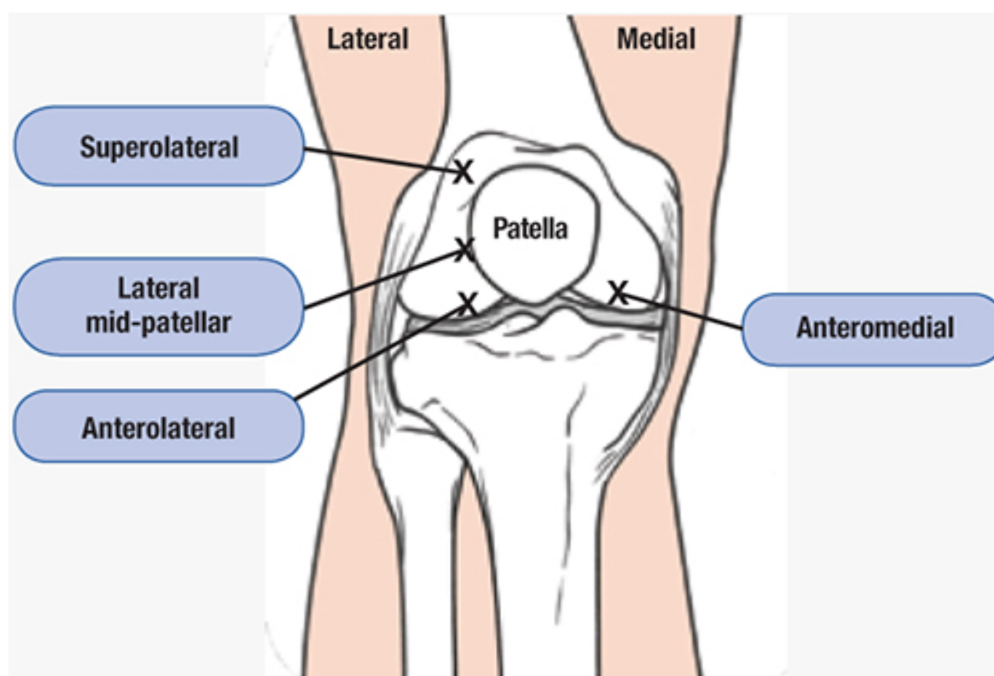
following[1]:

- Anterolateral (flexed knee)
- Anteromedial (flexed knee)
- Superolateral/lateral suprapatellar (straight knee)
- Superomedial/medial suprapatellar (straight knee)
- Lateral mid-patellar
- Medial mid-patellar.

One study found that the accuracy of the first attempt at needle placement was highest for lateral mid-patellar (93%) compared with anteromedial (75%) and anterolateral (71%) approaches (superolateral approach not done).

IMAGE COURTESY OF XME, LLC



STEP 2: IDENTIFY AND MARK THE INJECTION SITE[2]

For superolateral approach:

- Palpate superolateral and lateral edges of patella with patient supine and leg straight
- Mark where lines intersect as in diagram.

If the patient cannot completely extend the knee, placement of a rolled towel to support the knee will help provide the patient comfort and minimize muscle spasm, improving the likelihood of a successful and comfortable injection.

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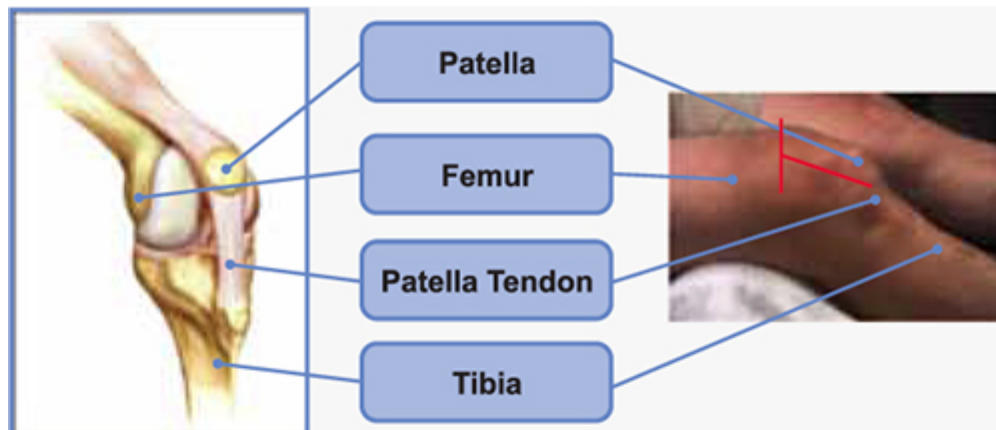


STEP 3: PREPARING THE INJECTION SITE[2]

- Aseptic technique

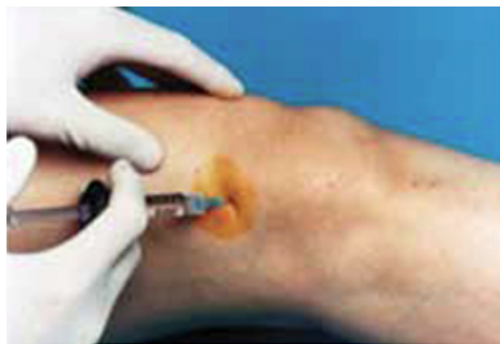
  – Swab area 3 times with a povidone iodine preparation (Beta-dine) and let dry.

- Local anesthetic options

  – Lidocaine

  – Vapocoolant spray

PHOTO COURTESY OF WEN DY. *AM FAM PHYSICIAN.* 2000[3]



STEP 4: ASPIRATION (SKIP TO STEP 5 IF NO EFFUSION IS PRESENT)

If effusion is present, aspiration of the effusion can relieve patient discomfort, be of diagnostic benefit, and avoid dilution of a visco-supplement to be injected.[2]

- Insert 1 ½” 18-gauge needle for aspiration[3]
- If needle is accurately placed, the syringe should fill with fluid[1]

- Compression of the opposite side of the joint or the patella may aid in arthrocentesis.[3]

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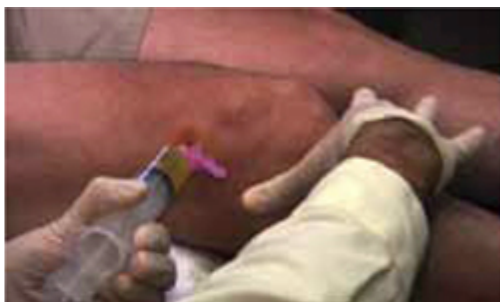

STEP 5: INJECTION

If aspiration was required, the same needle can be used for aspiration and injection by changing the syringe.

- Insert needle (1 ½", 21-gauge for corticosteroids; 1 ½", 20- or 22-gauge for viscosupplementation) ¾" to 1 ¼" for injection
- Remove needle, wipe off povidone iodine solution, and apply bandage.

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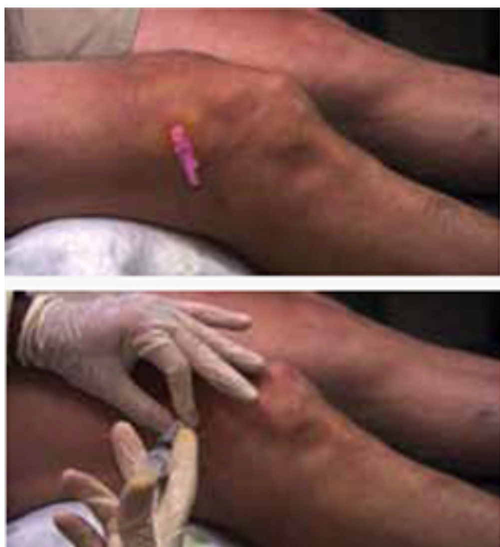

Post-injection care: Setting patient expectations and managing adverse effects

- Patient should avoid strenuous activity for 1 to 2 days after injection and apply ice to injection site
- Mild pain or swelling at the injection site can occur, but is rare

– If mild pain or swelling occurs, recommend ice, nonsteroidal anti-inflammatory drug (NSAID), rest, and elevation

– If significant pain or swelling occurs:

- Joint aspiration
- Send aspirate to lab to rule out joint infection
- Crystal analysis
- May provide intra-articular corticosteroid to decrease pain and inflammation after viscosupplementation if infection has been excluded.

References

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3. Wen DY. Intra-articular hyaluronic acid injections for knee osteoarthritis. *Am Fam Physician.* 2000;62(3):565–570, 572.

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