



Department of Radiology
UNIVERSITY OF WISCONSIN
SCHOOL OF MEDICINE AND PUBLIC HEALTH

Musculoskeletal Imaging and Intervention Section Procedures
Tarsometatarsal Corticosteroid Joint Injection

INDICATION

Most frequently performed as a therapeutic or diagnostic injection to treat or rule out tarsometatarsal osteoarthritis as a pain generator.

RISKS

- Bleeding
- Infection
- Pain

MODALITY

- Fluoroscopy

PRE-OPERATIVE WORKUP

- Informed consent

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MATERIALS

- Alcohol, Chloraprep applicator, sterile drape
- 10 mL syringes for skin anesthetic and steroid/anesthetic mixture
- 5 mL syringe for Omnipaque 300
- 1% lidocaine (for skin numbing); buffered with 8.4% sodium bicarbonate
- 1 mL triamcinolone acetonide (Kenalog 40 mg/mL) or 1 mL dexamethasone sodium phosphate (10 mg/mL)
- Ropivacaine HCL 0.5% (Naropin 5 mg/mL)
- 1% preservative-free lidocaine HCL (10 mg/mL)
- 30G 0.5", 25G 1.5" or 22G 1.5" needles

TECHNIQUE

1. There is normal communication between the 2nd and 3rd tarsometatarsal (TMT) joints and frequently the naviculocuneiform. The most technically accessible/least degenerated joint should be targeted. Similar patient positioning can be used for either injection.
 - a. Place the patient supine with the targeted leg bent at the knee; padding can be used for support. It may be easier to keep the tube in an unchanged AP position, and make slight variations to the position of the foot to center the targeted joint and have it correctly profiled. The bull's-eye technique will be used. Mark your skin entry site accordingly. Be sure to palpate and avoid the dorsalis pedis artery.
2. Prep and drape as per usual and perform local anesthesia.
3. It may be easiest to use the 25G 1.5" needle for both local anesthesia and steroid injection. After the skin is anesthetized, pass the needle down using the bull's-eye technique until you feel it 'fall' into the joint space.
4. Confirm intra-articular needle placement with a small injection of Omnipaque 300. Save the image.
5. If performing a therapeutic injection, inject 1-2 mL of a mixture containing 1 mL 1% preservative-free lidocaine, 1 mL ropivacaine HCL 0.5%, and 1 mL dexamethasone/Kenalog.



Fig 1. AP fluoroscopic view demonstrating needle tip placement within the third left TMT joint with a small amount of intraarticular contrast present. There is extra-articular contrast overlying the joint space from a prior attempt.



Fig 2. AP fluoroscopic view demonstrating passage of contrast within the second TMT joint.



Fig 3. AP fluoroscopic view demonstrating further extension of contrast within the naviculocuneiform joint space through the medial and middle intercuneiform joint.



Fig 4. Final AP fluoroscopic view demonstrating intra-articular contrast within the naviculocuneiform, intercuneiform, and second and third TMT joints.



Fig 5. AP fluoroscopic view demonstrating the needle tip within the right second/third TMT joint.



Fig 6. AP fluoroscopic view demonstrating contrast within the second and third TMT joints, extending into the naviculocuneiform joint through the intercuneiform joint space.



Fig 7. Final AP fluoroscopic view demonstrating contrast within the naviculocuneiform, intercuneiform, and second and third TMT joints.

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