



Anatomy and Portal Locations

In order to provide complete access to the joint, as well as flexibility of approach during examination and surgery, three portals are routinely established, the anterolateral, the anteromedial, and the posterolateral. To avoid injury, portal placement must be based on a thorough understanding of the ankle and foot extra-articular anatomy. The risk of injury to neurovascular structures is the greatest concern, but it is also important to avoid damaging the tendons that traverse the joint.

Identify and outline the key anterior landmarks – dorsalis pedis artery, saphenous vein and anterior tibial, peroneus tertius, extensor digitorum communis, and Achilles tendons. Marking the superficial peroneal nerve branches is particularly important; this is done with the foot held in plantar flexion and inversion. At least one branch of the superficial peroneal nerve can be easily identified, except in some patients who have large amounts of adipose tissue. Use palpation during dorsiflexion and plantar flexion of the foot and ankle to locate the anterior joint line.

The recommended anterior portals show key ankle structures and three possible anterior portal sites. Since the anterocentral portal requires extraordinary care to avoid damaging the dorsalis pedis artery and the deep branch of the peroneal nerve, it is not recommended. Identify and mark the portal sites. The recommended anterior portals are the anteromedial portal, just medial to the anterior tibial tendon and parallel to the joint line, and the anterolateral portal, just lateral to the peroneus tertius tendon and parallel to the joint line. The lateral portal varies depending on the location of the pathology.

Identify and mark the posterior landmarks and portals. Posterior portals are also used in ankle arthroscopy. The recommended portals are the posterolateral portal, just lateral to the Achilles tendon and about one-half inch (1.2 cm) proximal to the distal tip of the lateral malleolus, and the posteromedial portal, in a similar location, using the posterolateral portal and cannula for orientation.

As shown, the posterior portals may be established medial or lateral to the Achilles tendon or a trans-Achilles puncture can be made just below the joint line. Only the posterolateral portal is recommended for standard arthroscopic procedures to minimize the risk of injury to the neurovascular structures.

Recently the posteromedial portal has become more popular for posterior hindfoot arthroscopy, and should be made with great caution. Sometimes hindfoot arthroscopy is done in the prone position to make access to the posterolateral and posteromedial portals easier. The posterolateral portal is more frequently used than the posteromedial. The trans-Achilles portal is not recommended.