

Transtibial Amputation with Extended Flap and Bone Bridging

Muscles:

Dissect lateral edge of tibia:

Dissect away anterior and lateral muscles from tibia, preserve periosteum.

Transect anterior and lateral compartment muscles:

Dissect down lateral edge of tibia and along the syndesmotic membrane over to the fibula. Pass the clamp under the anterior and lateral compartment muscles. Transect the muscles.

1. Anterior compartment

1. Anterior Tibialis (AT), Extensor Hallucis Longus (EHL), and Extensor Digitorum Longus (EDL)
2. The anterior compartment muscles are transected at the level of the tibial bone cut early in the operation. The anterior tibial vessels and the deep peroneal nerve are located at the depth of the anterior compartment, just anterior to the syndesmotic membrane.

2. Lateral Compartment

1. Peroneus Longus (PL) and Peroneal Brevis (PB).
2. These muscles are transected at the same level as the anterior compartment muscles, at the level of the tibial bone cut.

Lift deep posterior compartment off soleus, preserve soleus fascia:

Deep Posterior Compartment: Posterior Tibialis (PT), Flexor Hallucis Longus (FHL), and Flexor Digitorum Longus (FDL).

After dissecting down the back of the tibia and fibula to remove the foot, the deep posterior compartment is carefully lifted off of the soleus. Care is taken to keep the muscular investing fascia with the soleus to maintain the blood supply to the deep posterior compartment.

Clamp perforating vessels to tie:

Care is also taken to find and clamp the small perforating vessels that go from the posterior tibial and peroneal vessels down into the soleus, so that these perforating vessels do not retract down below the fascia and cause bleeding that may be difficult to control.

Lift deep posterior compartment off of soleus:

Blunt dissection is used to lift the deep posterior compartment off of the fascia of the soleus.

Remove residual deep posterior compartment muscles:

After separating out the posterior tibial vessels, the tibial nerve, and the peroneal vessels, the PT, FHL, and FDL are transected at or just distal to the level of the tibial bone cut.

Remove remnants of the lateral compartment:

Dissect up off of fascia, transect at bone-cut level.