

## Nerves:

There are 5 nerves to isolate in the transtibial amputation. *All 5 nerves should* be carefully identified, isolated, drawn down and divided in order to avoid having the nerve endings in the area of scar, pulsating vessels or closure. Nerve endings should also be positioned to be away from areas of pressure in a standard prosthesis.

1. Saphenous Nerve – find the vein, nerve is usually just lateral to the vein. Separate vein and nerve, drawn down nerve and cut, no need to suture ligate this nerve. Ligate the saphenous vein with absorbable suture.
2. Deep Peroneal Nerve – Throughout its course, it runs with the anterior tibial vessels. Most commonly missed nerve. If ligate to the vessels, may sense the cadence of the pulse and cause throbbing local pain or throbbing phantom sensation. Separate this nerve, clamp the vessels, then drawn down the nerve and ligate. No need to suture ligate this nerve. Then Double ligation of anterior tibial vessels.
3. Superficial Peroneal Nerve – In the lateral compartment, the course of the superficial peroneal nerve changes dramatically from proximal to distal. Proximally, it is found between the peroneus longus and peroneus brevis muscle. Distally, it can pierce the fascia and change from the lateral to the anterior compartment. Find the nerve, drawn down and ligate. No need to suture ligate this nerve.
4. Tibial Nerve – This nerve runs throughout its course with the posterior tibial vessels. It is the largest nerve in the lower leg. Separate from the posterior tibial vessels by opening the perineurium and physically pulling away from the vessels. Clamp the posterior tibial vessels to exclude the nerve. Draw the nerve down and divide. Ligation of this nerve to prevent bleeding from the nerve is controversial. I rarely ligate the nerve, and only do so if I visibly see small vessels that may bleed.
5. Sural nerve – This superficial nerve runs in the posterior flap, and is located between the skin and the superficial fascia. It runs just lateral to the small saphenous vein (why it is not called the sural vein I will never know). The vein is isolated and ligated. The Sural nerve needs to be shortened dramatically so as to position the nerve ending not just away from the incision, but well up posteriorly and not in the tissue covering the distal end of the amputation.

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