

Revisional Neuroma Excision with Epineurial Ligation: a technique for failed neuroma surgery

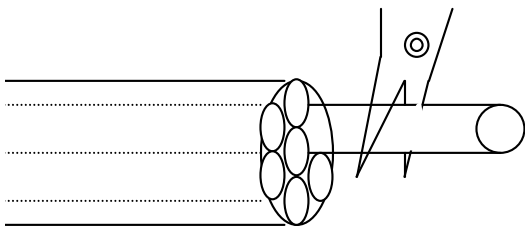
Indications: This technique is designed to revise previous nerve surgery that has failed. It was specifically developed to prevent the regrowth of the nerve. In the foot, regrowth of the nerve usually means a nerve mass under the weight bearing surface (the ball of the foot) which can produce pain with each step. This technique hermetically seals the end of the nerve with its own nerve sheath using a microscopic suturing method.

The plantar approach: To allow for better visualization and access to the nerve with the microscope, this incision is made on the bottom or '**plantar**' surface of the foot. This means:

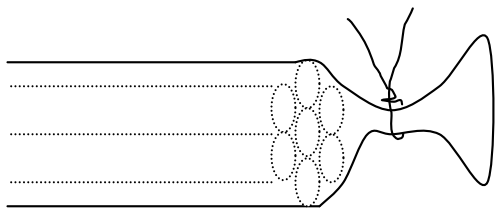
1. The patient is on their stomach for the surgery.
2. There should be 3 weeks of no weight on the foot following surgery.
3. The stitches need to be left in for three weeks. This means keeping the foot dry during this time.

Other than that, the revisional procedure is very similar to the original neuroma surgery.

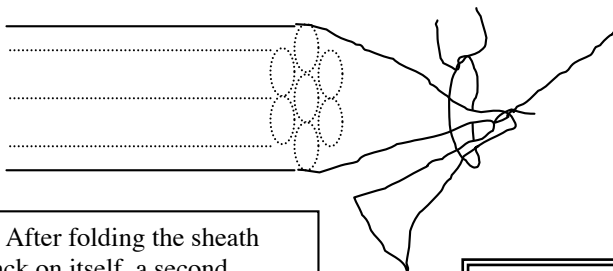
EPINEURIAL LIGATION (DOUBLE LIGATION TECHNIQUE)



1. The funiclectomy is where nerve axons are resected.



2. A first suture closes off the empty nerve sheath.



3. After folding the sheath back on itself, a second suture is added.

The procedure:

In this procedure, the regrown or 'stump neuroma' is not even taken out. This is so an incision on the weight bearing part of the foot is not needed. The nerve is found upstream and a segment removed. The nerve is cut back as far as possible before it branches of to adjacent nerves, then stained with methylene blue. At this point the microscope is utilized to close the end of the nerve sheath over the nerve ending to prevent any future regrowth. The nerve is buried into a local muscle belly to help insure regrowth will not happen.

Microscopic visualization:

During the epineurial ligation portion of the procedure an operating microscope is utilized to obtain magnified visualization of the nerve ending. This is combined with special instrumentation to allow for careful manipulation and closure of the nerve ending. The normal size of the intermetatarsal nerve in this area is like that of a *spaghetti noodle*. The suture is about the thickness of a human hair.

The Bellevue Podiatric Physicians