The Safety of Endoscopic Tarsal Tunnel Decompression: A Systematic Review
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Four studies were identified in the literature, involving a total of 47 patients. Of these, 40 patients met our inclusion criteria. The weighted mean follow-up was 27-months. There were no documented complications relating to iatrogenic nerve injury, infection or wound healing problems despite initiating ambulation within one week of surgery. Two patients (5%) developed recurrence at more than two years post-operative and one patient (2.5%) did not show improvement.

RESULTS

A systematic review of peer-reviewed material relating to the safety of endoscopic tarsal tunnel decompression for impingement of the tibial nerve or its branches was undertaken. Based on the inclusion criteria, four studies of fair methodological design were included. As the data of our systematic review demonstrates, endoscopic tarsal tunnel decompression is a safe procedure with a low rate of recurrence or failure and also allows for near immediate ambulation without the risk of wound complications. However, additional prospective investigations comparing open and endoscopic approaches to tarsal tunnel decompression are warranted to validate these benefits.

References

PURPOSE

Open surgical decompression of the tarsal tunnel is the gold standard for impingement of the tibial nerve or its branches within the tarsal tunnel. Complications associated with this approach can be significant and prolonged periods of non-weight bearing are required. An alternative approach that allows for minimal soft tissue trauma and shorter recovery time to ambulation is therefore desirable. Endoscopic tarsal tunnel decompression may provide such an alternative.

METHODOLOGY

The authors performed a systematic review of electronic databases and relevant peer-reviewed sources including OvidSP/MEDLINE and a general search engine. The authors hand searched each identified manuscript for pertinent references. Only manuscripts that included clear information regarding the safety of endoscopic tarsal tunnel decompression with follow-up of at least 12-months were included.

The authors performed the above systematic review with no restriction on date or language, using an inclusive text word query “tarsal tunnel” AND “endoscopic” where the all upper-case word represents the Boolean operator employed. The authors hand searched each identified manuscript for pertinent references and contacted authors of potentially relevant manuscripts for clarification of data when necessary. Every manuscript was reviewed in its entirety and consensus was employed for final inclusion with the senior author (TSR) being the moderator.

*http://ovidsp.tx.ovid.com
*http://www.google.com

Figure 1: Intra-operative images.
(A) Photograph of anatomic landmarks for incision site mapping (1st: black: mid-tibia axis; 2nd: yellow: superior calcaneus to mid-first metatarsal axis; 3rd: blue: medial malleolus to Achilles tendon parallel with yellow line; 4th: light blue: medial malleolus to superior calcaneus; and 5th: dashed white: middle of blue, light blue, and yellow defines superior laciniate ligament, path of the release, and inferior aspect of laciniate ligament respectively).
(B) Endoscopic view of laciniate ligament.
(C) Endoscopic view of released laciniate ligament with adipose herniation.

Figure 1: Intra-operative images.