ABSTRACT

Bunions, feet and battling nerve damage: is the sentinel vein a reliable landmark to locate the dorsomedial cutaneous nerve of the hallux?

Presentations from the 7th Scalpel Undergraduate Surgical Conference, 24 October 2015

J. Lindsay
Manchester Medical School, University of Manchester
jennifer.lindsay@student.manchester.ac.uk

Background Hallux valgus is a common condition in which the phalanges of the hallux deviate laterally and the first metatarsal deviates medially. The deformity is attributed to the long-term wear of tightly fitting footwear; however, a genetic predisposition may contribute to developing the condition. Surgical treatment of hallux valgus includes an osteotomy and rebalancing of the soft tissues. The sensory branch of the dorsomedial cutaneous nerve (DMCN) lies close to the surgical incision site and is at risk of iatrogenic damage. Sensory nerve damage following the procedure has been reported in up to 45% of patients.

Objectives A previous study described a transverse vessel, named the sentinel vein, located immediately superficial to the DMCN. It was therefore suggested that the sentinel vein could act as a landmark for the DMCN. The objective of the current study was to recreate the work from this previous study as far as possible, and determine if the sentinel vein is a reliable landmark for the DMCN.

Methods Cadaveric specimens were carefully dissected to observe both the appearance and position of the sentinel vein. Non-dimensional measurements were then taken to report the anatomical location of the vein.

Results A preserved sentinel vein was observed in 18 out of 31 specimens. In all cases the DMCN was found to either lie immediately deep to the overlying

Manchester Medical Journal, 2016 © The Authors.
Published by Manchester University Press, The University of Manchester Library and the Manchester Medical School
http://dx.doi.org/10.7227/MMJ.0012

MANCHESTER 1824
Manchester University Press

sentinel vein or just distal at the point where the vein joined the plantar venous network. Subjectively, the appearance and position of the vein was seen to vary greatly between different specimens. Non-dimensional measurements placed the sentinel vein at a mean of 30.17% of the total metatarsal length. However intra- and inter-observer repeatability analysis of the results suggested that the measurements may not be reliable in accurately describing the location of the vein.

Conclusion The variation in appearance of the sentinel vein between the specimens, along with the inability to reliably measure the position of the vein, indicates that the sentinel vein may not be a reliable landmark for the dorsomedial cutaneous nerve, and therefore the use of this structure as an anatomical landmark should be cautioned.