Sensory Mapping in Patients Following Excision of a Morton’s Neuroma
Maryam Jan, MBBS, Jayasree Ramas Ramaskandhan, MD, Paulo Torres, FRCS(Ed)

Category: Lesser Toes, Morton’s neuroma

Keywords: Morton’s neuroma, sensory mapping, outcomes, excision

Introduction/Purpose: Background:
Morton’s neuromata are a common cause of forefoot pain. Surgical excision of the neuroma is expected to result in loss of sensation, however in the author’s experience post-operative sensation can be incongruent with the expected cutaneous innervation of the excised nerve. There is a lack of literature regarding this observed discrepancy. The purpose of this study was to carry out sensory mapping in post excision patients.

Methods: Methods:
Data was collated from the consecutive case series of a single surgeon from 2013-2015 resulting in a total of 19 respondents (23 excisions). All patients were a minimum of 7 months post-excision (average=23 months). Each toe was divided into 13 anatomical segments (total 65). Sensation was assessed using a 10g monofilament and results were recorded on a sensory map.

Results: 19 excisions were done from the 3rd intermetatarsal space (group A) and 4 from the 2nd intermetatarsal space (group B). The range of patients from group A affected by complete sensory loss within any individual segment varied from 5.3%-47.4%. In the lesser toes (2, 3, 4 and 5), at least 10% of patients described decreased or absent sensation in =7/13 segments in each of all the lesser toes. Over 36.9% of patients reported decreased or absent sensation involving =7/13 segments in each the 3rd and 4th toes. The percentage of patients who reported unaltered sensation ranged from 21.1%-100% across all 65 segments. Group B followed a similar pattern but had a much smaller cohort of patients.

Conclusion: The results of the sensory mapping indicate an unexpected pattern of loss and preservation of sensation when considering the perceived knowledge of the cutaneous innervation of the forefoot. Further research is required to evaluate this intriguing pattern of innervation. A greater understanding would be useful in better informing our patients during the consent process.

Foot & Ankle Orthopaedics, 2(3)
DOI: 10.1177/2473011417S000220
©The Author(s) 2017

This open-access article is published and distributed under the Creative Commons Attribution-NonCommercial 3.0 License (http://www.creativecommons.org/licenses/by-nc/3.0/) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (https://us.sagepub.com/en-us/nam/open-access-at-sage).