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Case Presentation

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Sural Nerve Entrapment by a Lipoma: A Case Report

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Abstract

Neurogenic pain in foot and ankle can originate from compression in the spine or peripheral nerves. Foot and ankle nerve entrapments are rare. Lipoma in most cases it is painless. However, it can be a cause of nerve compression resulting with a neurogenic pain. We are presenting a rare case of Sural nerve (SN) compression by a lipoma. Only one case of SN compression by lipoma has been reported.

Keywords: Lipoma; Foot and ankle nerve entrapment; Peripheral nerve tumours; Sural nerve; Foot and ankle neurogenic pain

Introduction

In foot and ankle, the common nerve to entrapped is the tibial nerve causing tarsal tunnel syndrome. SN is a sensory nerve that supply the lateral aspect of the foot. Entrapment of SN will result in decreased sensation of the posterolateral side of the distal third of the leg and lateral aspect of the foot [1]. Only one case report of SN entrapment by lipoma has been documented [2]. Other causes of SN entrapment include post-surgical Achilles tendon repair, os peroneum, some shoes, walking with inverted foot, ganglion, fracture of the base of 5th metatarsal and process of talus, repetitive ankle sprains and gastrocnemius muscle injury [2-4]. Cadaveric case report found that SN was entrapped in a fibrous fascial tunnel [2]. We are present a rare case of SN entrapment by a lipoma that resulted with good outcomes after surgical removal.

Case Presentation

We report a case of 68-year-old female who present with right lateral foot neurogenic pain for the past 2

years. She reported that her pain was burning and the skin was sensitive to touch. She alluded that she could feel amass above her ankle. She had seen two other orthopaedic surgeons before. However, her pain did not improve. Clinical examination revealed a soft, palpable mass above the lateral malleolus with normal skin. Sensation was intact. Tinel's test was positive for the distribution of the sural nerve. Her x-rays were found to be normal. Magnetic Resolution Image (MRI) showed a benign lobulated tumour (**Figure 1** blue arrow). She was then given pregabalin (lyrica) 75 mg po nocte and etoricoxib (arcoxia) 90 mg po daily for six weeks. After six weeks she still reports no change regarding her neurogenic pain. She then consented for tumour removal. A 5.3 X 4 cm mass was identified **(Figure 2).** A longitudinal incision was made over the mass. SN was found to be entrapped within the tumour. Neurolysis was done and SN was found to showing signs of compression proximally (**Figure 3** blue arrow). Histology results revealed a lipoma. At two weeks her wound had healed and she reported no neurogenic pain after. Six weeks after surgery she still reported no pains and she was then discharged.

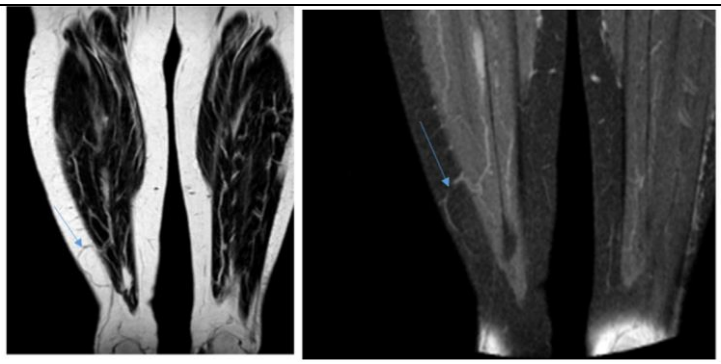

Figure 1: MRI showing a well capsulated and lobulated lesion.

Figure 2: Measuring of a palpable mass.

Figure 3: Picture showing an area where the SN was compressed.

Discussion

Anatomically the SN formed by anastomosis of the branches from tibial and common peroneal nerves [5]. Entrapment of the SN is rare. Toy has reported bilateral SN entrapment in a hockey player that was managed conservatively by adjusting ice skate's laces [4]. Cadaveric case report has found that compression can be due to fascial thickening in the fibrous facial tunnel [5]. Lipoma is a common soft tissue beginning tumour. It is formed by accumulation of fat cells. In most cases the tumour does not caused pain. Cases of pressure symptoms by lipoma have been reported that can result with neurogenic pain [6]. We could only find one case report of lipoma compressing SN in foot and ankle [2].

Positive Tinel's sign may assist with a diagnosis of nerve entrapment, but it may be unclear [3]. Injection of local anaesthetic to an affected area and disappearance of symptoms can be of value. Imaging involves x rays, ultrasonography, Magnetic Resonance Imaging (MRI) and nerve conduction studies. Extrinsic causes can be visualised by ultrasound or MRI [3,5,7]. MRI can also assist with differentiating lipoma from their malignant differentials (e.g liposarcoma) as well as for surgical planning [8,9]. Nerve entrapment can be managed with analgesia, antidepressants, anticonvulsants, local infiltration of the nerve or shoe modification [1,4,7]. Gozdemir et al. managed their patient with local lignocaine followed by pulse radiofrequency generator with good outcomes [7]. Surgical removal of lipoma causing nerve SN entrapment has good outcomes [2,6].

Conclusion

The entrapment of the SN is rare, one should think of intrinsic and extrinsic causes. Lipoma should also be considered as a one of causes of entrapment. Surgical removal of the lipoma compressing SN has good outcomes.

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