Neural fibrolipoma of the digital nerve: a case report

Hakan Gundes, Tugrul Alici, Mustafa Sahin
Department of Orthopedic Surgery, School of Medicine, Maltepe University, Istanbul, Turkey

ABSTRACT

A 32-year-old woman underwent microsurgical resection of a neural fibrolipoma of the digital nerve of the ring finger. At the 6-month follow-up, the patient had good recovery, no recurrence, and preservation of neural function. Caution should be exercised while planning microsurgical dissection on soft-tissue masses of fingers and hands. Total resection of the lesion and nerve grafting should be avoided.

Key words: fingers; hamartoma; nerve tissue

INTRODUCTION

Most soft-tissue lesions of the hand are benign, and about 5% originate from peripheral nerves.1,2 Neural fibrolipoma or lipofibromatous hamartoma is a rare, benign, nerve-related tumour that most commonly originates from the median nerve.3-6 This report is of a neural fibrolipoma of the digital nerve of the ring finger treated with microsurgical resection.

CASE REPORT

In November 2009, a 32-year-old woman presented with a mass (30x15 mm) on the radial side of the ring finger that had slowly developed for one year. The mass was fusiform in shape, mobile, and painless, and was situated close to the web space (Fig. 1). There was a tingling sensation with gentle tapping attributed to the mass. Radiography yielded normal findings. An initial diagnosis of lipoma was made based on findings of magnetic resonance imaging (Fig. 2). Under axillary block anaesthesia and loop magnification, the mass was exposed with Brunner incision. The mass was fatty in consistency and infiltrated the digital nerve for about 40 mm (Fig. 1). Digital nerve fibres were identified at the proximal and distal ends of the mass (Fig. 1). Under microscopic magnification, microsurgical intraneural dissection was carried out. The mass was removed from the digital nerve, and the nerve fibres were preserved (Fig. 1). The mass was confirmed to be a neural fibrolipoma. There was numbness around the finger postoperatively. At the 6-month follow-up, the numbness had resolved and the 2-point discrimination was 8 mm. There was no recurrence.
DISCUSSION

The 3 most common soft-tissue lesions of the hand are ganglion cysts, giant cell tumours of the tendon sheath, and hemangiomas. Peripheral nerve tumours account for <5% of all tumours of the hand. The most common peripheral nerve tumours of the hand are schwannomas (neurilemmomas) and neurofibromas. Neural fibrolipoma or lipofibromatous hamartoma of the nerve is a rare benign tumour of unknown origin. This tumour has a predilection for the median nerve, but involvement of various nerves has been reported. Macrodactyly has been associated in one third of patients with median nerve involvement.

Neural fibrolipomas are most frequently seen during the first 3 decades of life and may sometimes be considered as congenital lesions. T1- and T2-weighted spin echo magnetic resonance imaging sequences reveal serpiginous structures with low signal intensity. The mass in our patient was initially misdiagnosed as a lipoma as no serpiginous structures were noted, probably because of its small size. On histological examination, neural fibrolipoma is characterised by fibrofatty tissue proliferation with infiltration of the epineurium and perineurium. This tumour may cause thickening of the perineurium and perivascular fibrous tissues. Complete excision of the fibrofatty growth is contraindicated because it may cause severe sensory or motor disturbances.

Neural fibrolipoma involving a digital nerve has been reported. Caution should be exercised while planning microsurgical dissection on soft-tissue masses of fingers and hands. If there is any doubt about the diagnosis, a frozen section examination of the mass should be performed before carrying out any reconstructive surgery such as total resection and nerve grafting. The treatment goal should be careful microsurgical intrafascicular excision of the lesion with preservation of nerve continuity to avoid severe sensory disturbance. Based on our experience, microsurgical dissection is associated with good recovery, low recurrence, and preservation of neural function. Total resection of the lesion and nerve grafting should be avoided. Using a routine axillary block technique and microscope are simple but important measures that might prevent unwanted complications such as incomplete removal, neural sequelae, and inability to check hemostasis.

Figure 1 (a) The mass is located on the radial side of the ring finger (*), and is fatty in consistency and infiltrated the digital nerve for about 40 mm (arrow). The radial digital nerve is identified at the proximal end of the lesion (arrow). (b) The excised mass.

Figure 2 Magnetic resonance image showing a homogenous mass on the radial side of the ring finger.
REFERENCES