Intraneural lipoma of the ulnar nerve: A case report and review of literature

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Intraneural lipomas of the peripheral nerve or its cutaneous branches are rare benign tumours. These slow-growing tumours present as asymptomatic swelling, and diagnosis is usually made at the time of exploration. In most cases, these tumours can be enucleated without damage to the nerve fibres.

Key Words: *Intraneural lipoma; Ulnar nerve*

Intraneural lipomas and lipofibromas are rare soft tissue tumours presenting as asymptomatic swelling. If the lesions are large enough, they may cause progressive compression neuropathy. Significant differences are present between the well-encapsulated intraneural lipomas and the diffusely infiltrative lipofibromatous hamartoma type of intraneural lipomas. The encapsulated type tend to occur in the fourth and fifth decades, with a predominance in women. The diffusely infiltrative type arise in a younger age group, with no sexual predominance and are commonly seen in the median nerve. Due to its rare occurrence, we report a patient with intraneural lipoma of the ulnar nerve distal to Guyon's canal.

CASE PRESENTATION

A 42-year-old woman presented with a progressive swelling of her palm over a two-year period. She worked as an operating room technician and found that the glove on that hand was getting tighter. There was no history of trauma. She had no motor symptoms but had recently noted decreased feeling in her small finger. On examination, there was diffuse swelling of the hypothenar area of the palm measuring 4 cm × 3 cm (Figure 1). There was no tenderness or bruit over the swelling. Electromyogram and nerve conduction studies showed slowing of conduction with normal muscle function. Magnetic resonance imaging revealed diffuse swelling of the ulnar nerve distal to Guyon's canal. On exploration (Figure 2), there was a well-encapsulated lipoma with the superficial branch of the ulnar nerve adherent to it. The lipoma was enucleated without damage to the ulnar nerve. The patient had full sensory and motor function postoperatively.

DISCUSSION

Tumours arising within the peripheral nerves are rare. Most nerve tumours do not arise from nerve per se, but from supporting cells.

Un lipome intraneural du nerf cubital : Rapport de cas et analyse bibliographique

Les lipomes intraneuraux du nerf périphérique ou de ses rameaux cutanés sont des tumeurs bénignes rares. Ces tumeurs à croissance lente se manifestent sous forme d'œdème asymptomatique, et le diagnostic est généralement posé pendant l'exploration. Dans la plupart des cas, ces tumeurs peuvent être énucléées sans endommager les fibres nerveuses.

Figure 1) Swelling of the hypothenar region

These tumours usually grow slowly and are minimally symptomatic, making differentiation from other soft tissue neoplasm difficult. If the lesions are large enough, they may cause symptoms of compression neuropathy. Pathological lesions

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Figure 2) *Intraneural lipoma at exploration*

REFERENCES

1. Chiao HC, Marks KE, Bauer TW, Pflanze W. Intraneural lipoma of the sciatic nerve. *Clin Orthop Relat Res* 1987;(221):267-71.
2. Abu Jamra FN, Rebeiz JJ. Lipofibroma of the median nerve. *J Hand Surg [Am]* 1979;4:160-3.
3. Camilleri IG, Milner RH. Intraneural lipofibroma of the median nerve. *J Hand Surg [Br]* 1998;23:120-2.
4. Choi ML, Wey PD, Borah GL. Pediatric peripheral neuropathy in proteus syndrome. *Ann Plast Surg* 1998;40:528-32.
5. Phelan GS, Kendrick JI, Rodriguez JM. Lipomas of the upper extremity. A series of fifteen tumors in the hand and wrist and six tumors causing nerve compression. *Am J Surg* 1971;121:298-306.
6. Galeano M, Colonna M, Ristango G. Ulnar tunnel syndrome secondary to lipoma of the hypothenar region. *Ann Plast Surg* 2001;46:83-4.
7. Zahrawi F. Acute compression ulnar neuropathy at Guyon's canal resulting from lipoma. *J Hand Surg [Am]* 1984;9:238-9.
8. McFarland GB Jr, Hoffer MM. Paralysis of the intrinsic muscles of the hand secondary to lipoma in Guyon's tunnel. *J Bone Joint Surg Am* 1971;53:375-6.
9. Strickland JW, Steichen JB. Nerve tumors of the hand and forearm. *J Hand Surg [Am]* 1977;2:285-91.
10. Rusko RA, Larsen RD. Intraneural lipoma of the median nerve – case report and literature review. *J Hand Surg [Am]* 1981;6:388-91.
11. Terzis JK, Daniel RK, Williams HB, Spencer PS. Benign fatty tumors of the peripheral nerves. *Ann Plast Surg* 1978;1:193-216.

include neurilemmoma arising from the neural sheath and neurofibroma that is centrally placed with nerve fibres traversing the tumour mass. Nerve tumours, which are intraneural in location but non-neural in origin, include fibrofatty infiltrate, intraneural lipomas, hemangioma and ganglion cysts. Tumours arising from within the median nerve in the region of the distal forearm, wrist and palm are rare. Although well-encapsulated, intraneural lipomas have been reported within the sciatic nerve (1); most lesions are lipofibromatous hamartomas. The most common site for lipofibromatous hamartoma is the median nerve (2,3). Lipofibromatous hamartoma may be associated with rare congenital disorders, such as Proteus syndrome or Klippel-Trenaunay-Weber syndrome (4). Lipomas of the hypothenar region and Guyon's canal presenting as compression neuropathy of the ulnar nerve have been reported (5-7). These may present as paralysis of the intrinsic muscles of the hand (8). Symptomatic lesions may be treated by excision or decompression (9,10).

A fatty tumour of the peripheral nerves, although rare, occurs with sufficient frequency to pose problems in diagnosis and treatment. The nomenclature of these tumours has suffered from controversy over their morphological description. A rational surgical approach has been suggested to avoid unnecessary radical nerve excision with resultant total nerve and sensory deficit (11).

This patient presented with a slow-growing tumour of the hypothenar area with symptoms of sensory neuropathy of the ulnar nerve. The intraneural lipoma was confined to the superficial branch of the ulnar nerve. Surgical enucleation of the lipoma resulted in full recovery.