Intraneural nodular fasciitis of the radial nerve with rapidly progressive motor symptoms

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Abstract

Background: Nodular fasciitis is a benign mesenchymal tumor arising from fascia that typically presents as a rapidly growing, subcutaneous mass. Intraneural cases are very rare and can present with neurological symptoms, requiring surgical resection.

Case Description: A 31-year-old woman presented to us with painful paresthesias in her elbow and progressive motor deficits, for which she underwent surgery.

Conclusion: The authors report the first case of intraneural nodular fasciitis occurring in the radial nerve and highlight the possibility of rapidly progressive motor deficit in patients presenting with this rare clinical entity.

Key Words: Fasciitis/diagnosis, fasciitis/surgery, peripheral nervous system neoplasms, radial nerve, radial neuropathy

INTRODUCTION

Nodular fasciitis is a rapidly growing, benign proliferation of myofibroblasts that arises from fascia, often presenting as a subcutaneous mass, and commonly found in the upper extremity.[1,3,11] It is characterized by a self-limiting course that has been observed to spontaneously regress; however, symptomatic presentations have been treated successfully with surgical resection and recurrence occurs in <2% of patients.[6,12] Intraneural nodular fasciitis is very rare and has only been reported in seven cases.[2,4,5,7,9,10,13] We report a case involving the radial nerve presenting with painful paresthesias and progressive motor symptoms. Only one other case in the literature has described rapidly progressive motor weakness; we present the second instance of such, accentuating the potential surgical nature of intraneural nodular fasciitis.

CASE HISTORY

History and examination

A 31-year-old female with no history of trauma presented with a 6-month history of electrical, shooting pain and occasional numbness in her left elbow and hand. Prior treatment with nonsteroidal anti-inflammatory drugs and a short course of corticosteroids did not help. Her painful paresthesias worsened, and electromyography revealed radial nerve sensory neuropathy; however, the motor examination was normal. Upon initial evaluation in July 2013, she noted new left-hand weakness. Examination revealed an irregular, tender, immobile lesion roughly 2 cm in diameter in the antebrachial fossa, with severe paresthesias in a radial distribution. Motor examination was significant for left-sided wrist drop (2/5), and similar weakness in finger extension. Magnetic resonance imaging and ultrasound revealed a lesion measuring approximately...
33 mm × 16 mm × 28 mm with ill-defined margins surrounding the radial neurovascular bundle at the distal humerus [Figures 1 and 2]. Needle biopsy revealed a low-grade spindle cell lesion. The patient was taken to surgery in July.

Treatment course
In surgery, a red, fragile mass encasing the radial nerve was observed medial to the brachioradialis [Figure 3]. Distally, the radial nerve was swollen near its division to the superficial and deep branches. There was intramuscular invasion of the brachioradialis and extensor carpi radialis. Nerve dissection revealed the mass extensively invaded the epineurium, perineurium and endoneurium. Microsurgical techniques were used to dissect each fascicle from the lesion.

Three months after surgery, the patient showed dramatic recovery and reported no pain. Her motor function showed improvement – wrist extension was 4+/5 and finger extension was 4−/5. Sensory examination revealed minor residual hypesthesia in the radial distribution. One year after the surgery the motor examination of the radial nerve was normal and the sensor exam was back to normal. There was no evidence of recurrence 20 months after the surgery.

DISCUSSION
Nodular fasciitis is a benign mesenchymal tumor that typically presents as a rapidly growing mass. The etiology of nodular fasciitis is not known, but the current theory is that local trauma or inflammatory processes can trigger proliferation of myofibroblasts.[1,3] Intraneural nodular fasciitis is rare, and there are only seven cases that have been reported in the literature [Table 1]; three in the ulnar nerve, two in the sciatic nerve, one in the median nerve, and one in the obturator nerve.[2,4,5,7,9,10,13]

Our patient’s initial complaints were sensory and only in the final month prior to surgery did motor symptoms appear and progress rapidly. There is only one other intraneural case to describe motor symptoms that progressively worsened, and it occurred in the median nerve of a 79-year-old female.[13] Of the six nontraumatic cases [Table 1], two were incidental findings that did not present with neurological deficits,[2,10] one presented with only sensory deficits,[13] and the remaining three presented with both sensory and motor deficits that remained stable until the lesion was surgically removed. [4,5,9] Only one case involved trauma, where the patient fell and had acute progression of motor weakness. However, the severity of symptoms plateaued and remained stable until surgery.[13] From April to July 2013, our patient’s motor symptoms progressed from subjective weakness to wrist drop on physical examination.

Intraneural nodular fasciitis is an unusual lesion that can present as a rapidly growing mass with neurological symptoms. We report the first case occurring in the radial nerve and highlight the possibility of rapidly progressive motor deficit in patients presenting with this rare clinical entity.
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Conflicts of interest
There are no conflicts of interest.

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