

Abstract

Lipomatosis of nerve is a benign lesion with increased fibrofatty tissue infiltrating and surrounding nerves, usually occurring in children and young adults as a slowly progressive swelling or mass, which can clinically mimic a tumor or malignancy. Here we report a 59-year-old man who presented with pain in his right foot and a mass that has been mostly stable for years, but which seems to have grown slightly of late, and is clinically suspicious for ganglion cyst. The MRI revealed a fatty mass concerning for lipoma or atypical lipomatous tumor. Consequently, the patient underwent excisional biopsy. The H&E sections showed mature adipose and fibrous tissue infiltrating the nerve, consistent with lipomatosis of nerve. Lipomatosis of the nerve, though most common in upper extremities, can occur in a variety of locations, and providers should be aware of potentially rare presentations like this one to prevent unnecessary surgery and prevent potential nerve damage.

Introduction

Lipomatosis of the nerve is an uncommon slow growing benign tumor where there is proliferation of mature fibroadipose tissue in the outer dense connective tissue layer of peripheral nerves, or epineurium. [1,2,5] This overgrowth can lead to a notable bulge in the affected area as well compression of the nerve which can lead to loss of sensation and paresthesia in the affected area. [4] Lipomatosis of the nerve is equally prevalent in males and females and is found more often in the nerves of the arm including the median nerve and ulnar nerve, in which cases macrodactyly is a commonly observed sign, often treated as nearly synonymous with lipomatosis of the nerve. [3] Lipomatosis of the nerve also rarely occurs in the nerves of the distal lower extremities, such as those of the ankle and foot. [5] Although there are known mutations that contribute to the etiology of this condition [3], it is not mechanistically clear why the growths are distributed preferentially where they are, although some research suggests that the condition may have broader anatomical reach than it was previously thought to have. [7]

Lipomatosis of Nerve can occur in unusual locations. Its symptoms in these locations may differ.

Figures

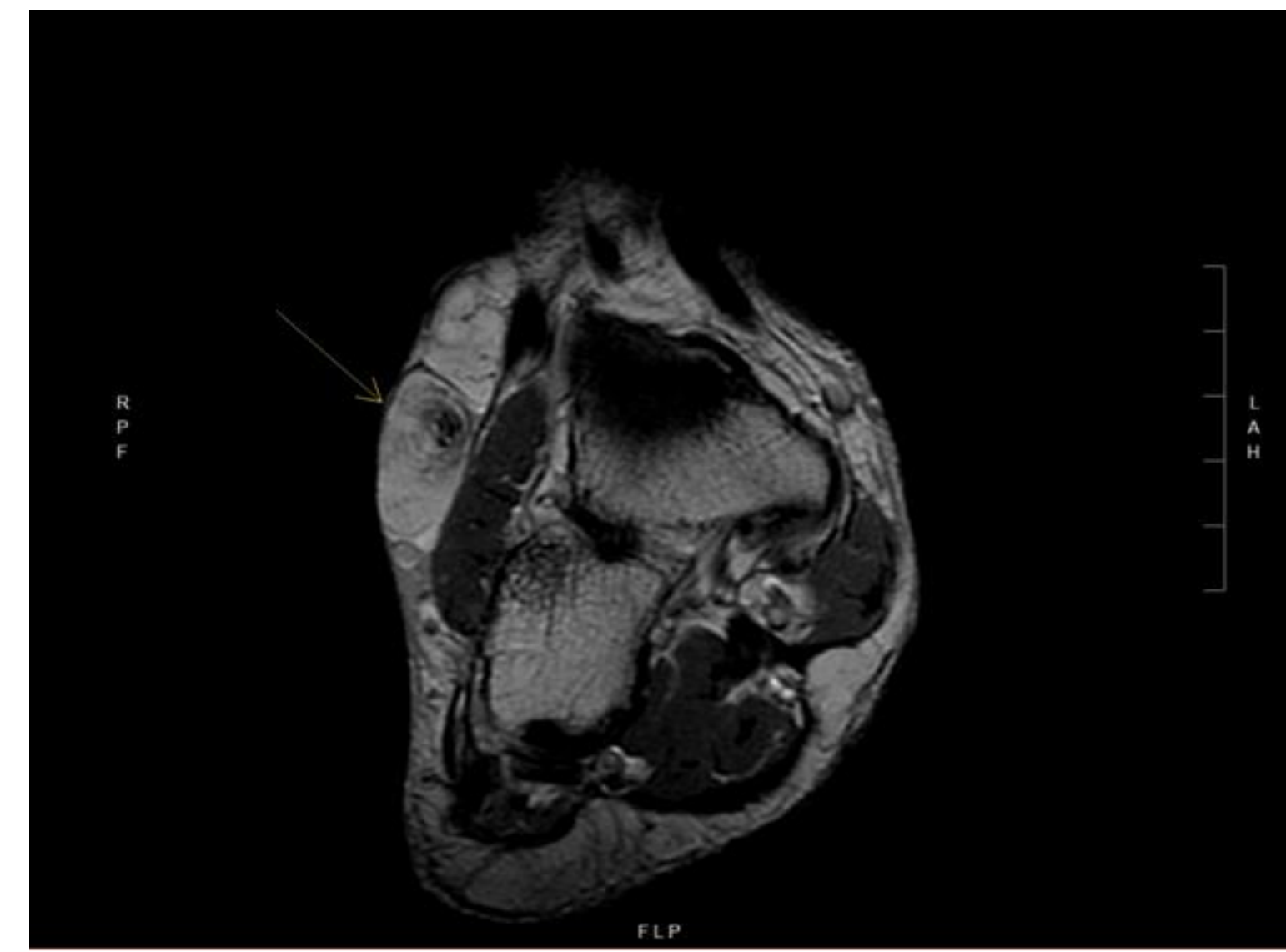


Figure 1. MRI showing a well circumscribed partially encapsulated T1 hyperintense multilobulated mass on the dorsolateral foot.

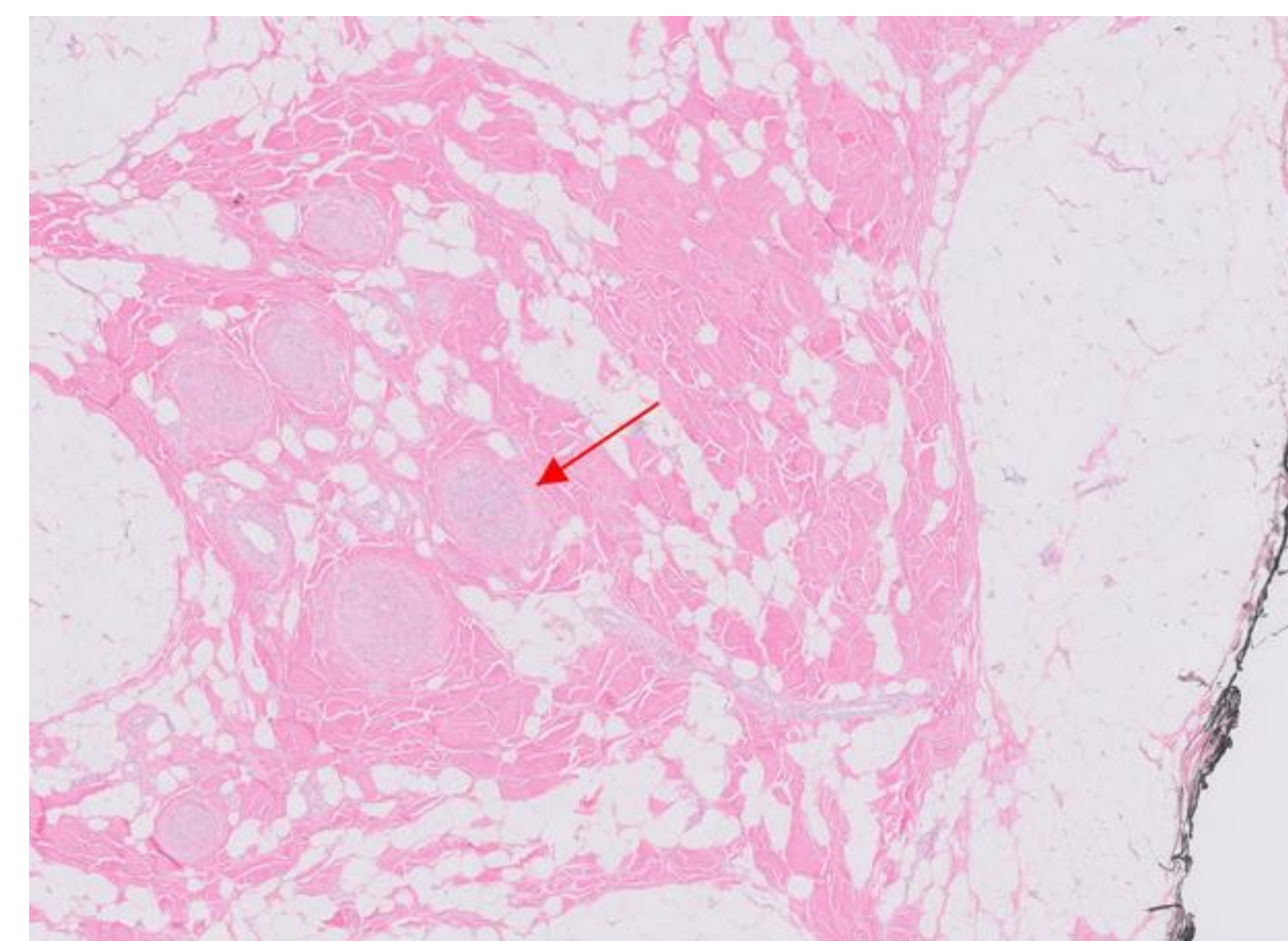


Figure 2. The hematoxylin and eosin stain of the excisional mass show peripheral nerves with epineurium markedly expanded by mature adipose tissue and fibrous tissue, consistent with lipomatosis of nerve.

References

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Introduction continued

Lipomatosis of the nerve is described on physical examination as a mobile, nontender, non-firm mass. [4] Biopsy is typically unnecessary for diagnosis of lipomatosis of the nerve as magnetic resonance imaging can offer precise diagnosis in some cases. [4] In fact, diagnostic biopsies may present more risk than benefit. [6] In addition to the lipomas, osseous enlargement and osteochondromatous proliferations may be present. [3]

Treatment for this condition is widely variable. Complete excision usually contraindicated because of potential nerve damage, but surgical decompression (e.g., carpal tunnel release) or debulking may reduce symptoms. [6]

Case Report

59-year-old man who presented with a foot pain as well as a large mass around the anterolateral ankle which has been mostly stable for years but seems to have grown slightly of late. The clinical setting was suggestive of a benign cyst (such as a ganglion cyst). MRI revealed a dorsolateral foot, multilobulated, predominantly fat signal, ill-defined, not entirely encapsulated soft tissue mass which may reflect a lipoma or atypical lipomatous tumor. (Fig 02) H&E sections of the mass show bundles of peripheral nerves with mature adipose and fibrous tissue infiltrating the nerve and expanding the epineurium without any cytological atypia, mitosis, or necrosis. (Fig 01 and Fig 02) The clinical and morphological features along with the MRI findings are consistent with lipomatosis of nerve. Complete excision of mass was performed.

Discussion

Because of the unusual location of the lipomatosis in this patient, lipomatosis of the nerve was not the most obvious diagnosis for this patient. However, in light of evidence suggesting that the anatomical reach of these masses might be greater than previously thought, [7] lipomatosis of the nerve should be considered as a potential diagnosis when signs present in unusual anatomical locations. More research needs to be done to determine if some lipomatosis diagnoses are missed when masses are found in other areas of the body, and to determine if fatty masses in other areas of the body are misdiagnosed as other types of growths.