Giant Spindle Cell Lipoma of Middle Finger: Case Report and Review of Literature

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Abstract

We present a case of a giant Spindle cell lipoma of dimensions 11 cm × 7 cm, involving the middle finger of a 62-year-old female, without distal neurovascular deficits. Spindle cell lipoma is a rare subtype that accounts for 1.5% of all lipomatous tumors. They show a heterogeneous mixture of lipomatous tissue with mature adipocytes interspersed with spindle-shaped cells, without atypia in a sclerotic collagenous stroma. Immunohistochemical (IHC) marker CD34 was positive but negative for S100. The entire tumor was removed with recovery of full range of movements. The case is reported due to the unusual location of a rare variant of giant lipoma involving a finger.

Keywords

► finger soft tissue tumor
► giant lipoma
► spindle cell lipoma

Introduction

Although lipomas are the most common tumors in the body, only 1% of all cases are reported to occur in the hand.¹ These benign soft-tissue neoplasms are termed “giant lipomas” if they grow to more than 5 cm in diameter.² We present a case of giant spindle cell lipoma (SCL) involving the middle finger of dimensions 11 cm × 7 cm, involving a digit, without any neurovascular involvement.

Case Report

The patient was a 62-year-old female who had a slow-growing, painless swelling in her left middle finger for the last three decades (►Fig. 1A, B). The swelling had a firm but doughy feel and was encircling the entire proximal digit, causing deviation of adjacent fingers and intertrigo in the second and third web spaces. Although there was restricted flexion of interphalangeal joints, the patient appreciated no interference in activities of daily living due to the swelling. It was larger and more mobile on the dorsal aspect than volar. There were no clinical signs of inflammation or distal neurovascular deficit. Tinel’s sign was not appreciable in the vicinity of the tumor. Plain radiograph had the characteristic “water clear density” over the swelling, with no bone erosion.

MRI imaging showed a lobulated soft-tissue mass involving the subcutaneous plane, hyperintense on T1-weighted images with thin internal septation, and no contrast enhancement (►Fig. 2A, B). Paraosseous spaces and tendon sheath planes were intact.

The tumor was excised under axillary block and tourniquet control through a dorsal lazy S incision. The gross appearance was of a yellow-orange multilobulated mass (►Fig. 3A), which was entwining both the neurovascular bundles without fixity to deeper structures. The entire tumor was removed by meticulous dissection while preserving both the digital nerves and ulnar digital artery (►Fig. 3B). The excess skin was excised and redraped (►Fig. 3C, D). The patient had an uneventful recovery with a full range of movements and no neuromuscular deficits. She is on regular follow-up and physiotherapy.

Discussion

Common causes of digital swellings include epidermal inclusion cysts, ganglion cysts, nerve sheath tumors, giant cell tumors, vascular malformations, and tenosynovitis.¹ Pseudolipomas can also occur in areas of old blunt trauma due to preadipocyte differentiation, which is triggered by the extravasated blood. In contrast to all these, giant lipomas
consist of mature adipocytes indistinguishable from normal fat tissue. In our patient, histopathology confirmed the diagnosis as “spindle cell lipoma.” Immunohistochemical (IHC) marker CD34 was positive but negative for S100. The WHO classification for soft-tissue tumors divides adipocytic tumors into the following: lipoma, lipomatosis, lipomatosis of nerve, lipoblastoma/lipoblastomatosis, angiolipoma, myolipoma, chondroid lipoma, extrarenal angiomylipoma, extra-adrenal myelolipoma, spindle cell, pleomorphic lipoma, and hibernoma variants. They may have unknown genetic, traumatic, and metabolic triggers. Lipomas are associated with hyperlipidemia, MEN I, Cushing’s syndrome, Dercum’s disease, Gardner’s syndrome, Cowden’s syndrome, Bannayan–Ridley syndrome, and Proteus syndrome. Our patient did not have any of these associations.

Spindle cell lipomas (SCL) show a heterogeneous mixture of lipomatous tissue with mature adipocytes interspersed with collagenous fibrous tissue. Microscopically, the tumor is composed of mature adipocytes of normal size and shape interspersed with collagenous fibrous tissue (hematoxylin and eosin stain) magnified X200. A recognizable non-adipose component consists of spindle-shaped cells without atypia in a sclerotic collagenous stroma. Inset: Immunohistochemical (IHC) marker CD34 was positive.
with spindle-shaped cells, without atypia in a sclerotic col-
lagenous stroma. There were no significant areas of myx-
oid stroma, neural component, or sarcomatous changes in
our patient. SCL is a rare subtype that accounts for 1.5% of
all lipomatous tumors. It was first reported as a distinct
entity in 1975 by Enzinger and Harvey, usually presenting
as a solitary, slow-growing subcutaneous lesion in men of
40 to 70 years of age. Kumar et al have reported a case of
SCL in the dorsum of a hand of a 4-year-old child. Clinically,
SCL resembles a lipoma but is firmer in consistency. The
classical sites of involvement are the back, neck, and shoul-
der region, but rarer sites like tongue, cheek, and oral cavity
have also been reported. Giant pleomorphic lipomas can
occur in similar locations in older males, but apart from the
spindle-shaped cell component, they also show floret-like
giant cells with nuclear pleomorphism. Ud Din et al noted
that the SCL occurring in nonclassical locations has equal
sex distribution, but the same morphologic, immunophe-
notypic, and molecular findings as SCL in classic locations.
Most SCLs in their series showed strong and diffuse CD34,
absence of Desmin, and lack of Rb expression, which is con-
cordant with immunostaining patterns of these tumors.

Lipomas constitute 16% of all mesenchymal tumors, and
in the hand, it is commonly seen in areas of abundant fatty
tissue like the thenar and hypothenar eminence or deep pal-
mar space. Larger lipomas of the palm are known to cause
compression neuropathies, impairment of grasp mechani-
sm, tendon triggering, and muscle atrophy. However, in
Leffert’s series of 141 cases of lipomas of hand, only 32 were
symptomatic. Lipomas in the finger was first reported by
Stein in 1959. In addition to the restriction of joint move-
ment, they can cause paresthesia, trophic changes in the nail,
or other cosmetic concerns. Ciloglu et al reported a case of
SCL along the radial digital nerve with hypoesthesia. SCL
of thumb have been reported, with and without functional
impairment.

The diagnosis of giant lipomas of fingers is by clinical
examination supplemented by radiologic and histopatho-
logic confirmation, and the treatment is surgical excision.
MRI is considered to be the gold standard for imaging giant
lipomas because of its multiplanar imaging and tissue
characterization. Sarcomatous changes in a pre-existing
lipoma can be detected in an MRI from the irregularity of
septation and gadolinium enhancement and lipoblasts in
histology. Rydholm and Berg in their retrospective study of
428 lipomas have found that there is a 20/1 risk of sarcoma-
tous changes in giant lipomas of more than 5 cm. Hence, our
patient is on a regular follow-up to rule out the possibility of
recurrence or malignant transformation.

Conflict of Interest
None declared.

References