

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

Rajan T. M. Sheeja¹ Thomas Bestin¹ D. S. Aabha¹

¹Department of Plastic Surgery, Government Medical College, Kozhikode, Kerala, India

Address for correspondence Rajan T. M. Sheeja, MS, MCh, DNB,, Department of Plastic Surgery, Government Medical College, Kozhikode, Mavoor Road, Kerala 673008, India (e-mail: sheejarajantm@gmail.com).

J Hand Microsurg

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). Parosseous 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.³ 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

DOI <https://doi.org/10.1055/s-0040-1721879>
 ISSN 0974-3227.

© 2020. Society of Indian Hand & Microsurgeons. All rights reserved. This is an open access article published by Thieme under the terms of the Creative Commons Attribution-NonDerivative-NonCommercial-License, permitting copying and reproduction so long as the original work is given appropriate credit. Contents may not be used for commercial purposes, or adapted, remixed, transformed or built upon. (<https://creativecommons.org/licenses/by-nc-nd/4.0/>)
 Thieme Medical and Scientific Publishers Pvt. Ltd., A-12, 2nd Floor, Sector 2, Noida-201301 UP, India



Fig. 1 (A, B) A 62-year-old female presenting with a Giant Spindle cell lipoma (11 cm X 7 cm) of the left middle finger. Both dorsal and volar aspects of the finger are involved.

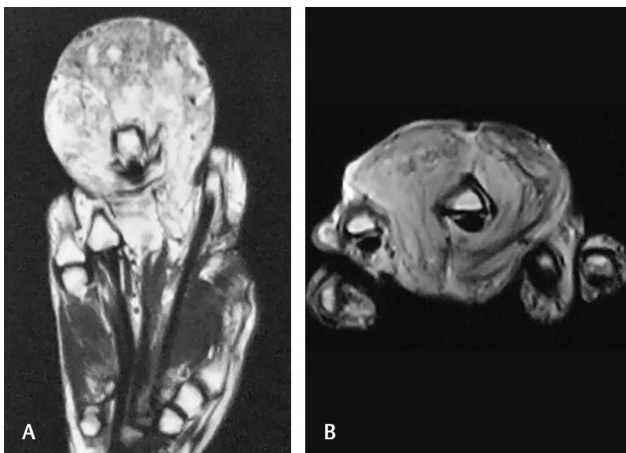


Fig. 2 (A, B) Coronal and axial views of MRI demonstrating bright T1-weighted signal and fat-suppression sequence images. No enhancement was noted following intravenous contrast administration. Normal bone marrow signal is seen. Paraosseal and tendinous planes are preserved. Features were consistent with a benign lipoma.



Fig. 3 (A) Operative photograph after the dorsal lazy S incision, showing a gross appearance of the multi-lobulated giant lipoma of yellow-orange color, entwining the digital neurovascular bundle with no fixity to the deeper structures. **(B)** Operative photograph, showing a gross appearance of the multilobulated giant lipoma (11 cm × 7 cm × 4.2 cm) after excision. The excess skin was also removed. **(C, D)** Dorsal and volar views of the left hand after excision of giant lipoma of middle finger; wound closed after redraping and trimming of excess skin.

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 (► **Fig. 4**). The WHO classification for soft-tissue tumors divides adipocytic tumors into the following: lipoma, lipomatosis, lipomatosis of nerve, lipoblastoma/lipoblastomatosis, angioliipoma, myolipoma, chondroid lipoma, extrarenal angiomyolipoma, extra-adrenal myelolipoma, spindle cell, pleomorphic lipoma, and hibernoma variants.⁴ They may have unknown genetic, traumatic, and metabolic triggers. Lipomas are associated with hyperlipidemia, MEN 1, Cushing’s syndrome, Dercum’s disease, Gardner’s syndrome, Cowden’s syndrome, Bannayan–Ridley syndrome, and Proteus syndrome.¹ Our patient did not have any of these associations.

Spindle cell lipomas (SCL) show a heterogeneous mixture of lipomatous tissue with mature adipocytes interspersed

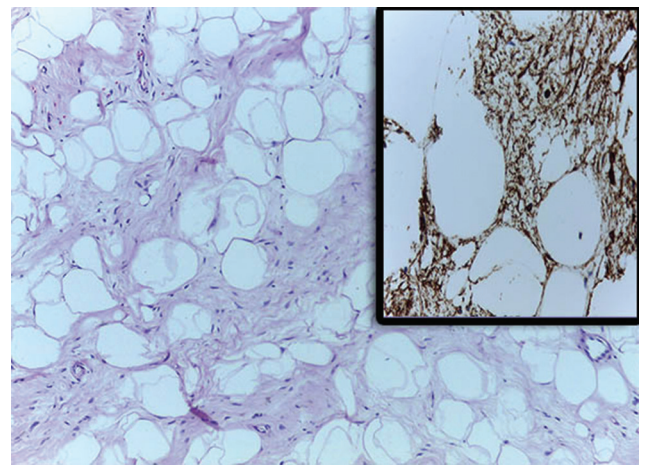


Fig. 4 Microscopically, the tumor is composed of mature adipocytes of normal size and shape interspersed with collagenous fibrous tissue (hematoxylin and eosin stain) magnified X200. A recognizable non-adipose component consists of spindle-shaped cells without atypia in a sclerotic collagenous stroma. **Inset:** Immunohistochemical (IHC) marker CD34 was positive.

with spindle-shaped cells, without atypia in a sclerotic collagenous stroma.⁵ There were no significant areas of myxoid 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.⁶ 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.⁷ The classical sites of involvement are the back, neck, and shoulder region, but rarer sites like tongue, cheek, and oral cavity have also been reported.⁸ 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.⁹ Ud Din et al noted that the SCL occurring in nonclassical locations has equal sex distribution, but the same morphologic, immunophenotypic, and molecular findings as SCL in classic locations.¹⁰ Most SCLs in their series showed strong and diffuse CD34, absence of Desmin, and lack of Rb expression, which is concordant 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 palmar space.⁴ Larger lipomas of the palm are known to cause compression neuropathies, impairment of grasp mechanism, tendon triggering, and muscle atrophy.^{1,3} However, in Leffert's series of 141 cases of lipomas of hand, only 32 were symptomatic.¹ Lipomas in the finger was first reported by Stein in 1959.¹ In addition to the restriction of joint movement, they can cause paresthesia, trophic changes in the nail, or other cosmetic concerns.^{1,3} Ciloglu et al reported a case of SCL along the radial digital nerve with hypoesthesia.¹¹ SCL of thumb have been reported, with and without functional impairment.^{12,13}

The diagnosis of giant lipomas of fingers is by clinical examination supplemented by radiologic and histopathologic 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.³ 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.¹ Rydholm and Berg in their retrospective study of 428 lipomas have found that there is a 20/1 risk of sarcomatous changes in giant lipomas of more than 5 cm.¹⁴ 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

- Nadar MM, Bartoli CR, Kasdan ML. Lipomas of the hand: a review and 13 patient case series. *Eplasty* 2010;10:e66
- Cribb GL, Cool WP, Ford DJ, Mangham DC. Giant lipomatous tumours of the hand and forearm. *J Hand Surg [Br]* 2005; 30(5):509–512
- Ramirez-Montañón L, Lopez RP, Ortiz NS. Giant lipoma of the third finger of the hand. *Springerplus* 2013;2(1):164
- Christopher D, Unni K, Mertens F. *Adipocytic Tumors. WHO Classification of Tumors. Pathology and Genetics: Tumors of Soft Tissue and Bone.* Lyon, France: IARC; 2002:19–46
- Nishio J, Ideta S, Aoki M, et al. Fibrolipoma of the ring finger: MR imaging and histological correlation. *In Vivo* 2013; 27(4):541–544
- Machol JA IV, Cusic JG, O'Connor EA, Sanger JR, Matloub HS. Spindle cell lipoma of the neck: review of the literature and case report. *Plast Reconstr Surg Glob Open* 2015;3(11):e550
- Kumar P, Mahajan N, Jain R, Khatri A. Spindle cell lipoma, dorsum of hand in a 4 year old child: A rare entity. *Indian J Pathol Microbiol* 2020;63(2):301–304
- Al-Qattan MM, Al-Lazzam AM, Al Thunayan A, et al. Classification of benign fatty tumours of the upper limb. *Hand Surg* 2005;10(1):43–59
- Sakhadeo U, Mundhe R, DeSouza MA, Chinoy RF. Pleomorphic lipoma: a gentle giant of pathology. *J Cytol* 2015;32(3):201–203
- Ud Din N, Zhang P, Sukov WR, et al. Spindle cell lipomas arising at atypical locations. *Am J Clin Pathol* 2016;146(4):487–495
- Ciloglu NS, Duran A, Buyukdogan H. Spindle cell lipoma adherent to the digital nerve in the palm. *J Hand Microsurg* 2014; 6(2):108–109
- Ebisudani S, Osugi I, Inagawa K, Suzuki Y, Kimura T. Spindle cell lipoma of the thumb. *Plast Reconstr Surg Glob Open* 2018; 6(2):e1671
- El Rayes J, Sader RB, Saliba E. Lipoma of the thumb: spindle cell subtype. *Case Rep Orthoped* 2016;2016:9537175
- Rydholm A, Berg NO. Size, site and clinical incidence of lipoma. Factors in the differential diagnosis of lipoma and sarcoma. *Acta Orthop Scand* 1983;54(6):929–934