

A Rare Case of Giant Hypothenar Lipoma with Intermuscular Extension Causing Ulnar Nerve Irritation

Nikhil B¹, Vivek Gautam², Sapna Goyal¹, Swati Mishra¹, Naresh Kumar Jain¹

¹Department of Radiology, Mata Chanan Devi Hospital, New Delhi, India. ²Department of General Surgery, Mata Chanan Devi Hospital, New Delhi, India

Abstract

Background: Lipomas are the most common benign mesenchymal tumors of soft tissue but are rare in the hand and exceptionally uncommon in the hypothenar region. We report a 45-year-old female with a gradually progressive swelling in the right hypothenar eminence over three years, accompanied by occasional tingling along the ulnar side of the hand. Clinical examination revealed a firm, mildly mobile mass with reduced grip strength and positive Tinel's sign. MRI demonstrated a well-defined, fat-signal lesion extending into intermuscular plane consistent with lipoma. Fine-needle aspiration cytology was inconclusive, suggesting granulomatous inflammation, highlighting the diagnostic limitations of FNAC in deep-seated lipomas. The patient underwent complete surgical excision, revealing a well-encapsulated lipoma displacing but not infiltrating the digital branch of the ulnar nerve. Histopathology confirmed benign lipoma without granulomatous features. Postoperative recovery was uneventful with full functional restoration. This case underscores keeping lipoma as an important differential diagnosis in hand swellings and highlights the importance of clinico-radiological correlation when FNAC findings do not align with imaging and clinical impressions.

Keywords: ulnar nerve entrapment, benign hand swelling, peripheral nerve tumor, mri of lipoma, benign soft tissue tumor, hand tumor case report, ulnar tunnel syndrome, giant palmar lipoma, intermuscular lipoma, hypothenar lipoma.

Received: 10 August 2026

Revised: 30 August 2026

Accepted: 19 September 2026

Published: 24 September 2026

INTRODUCTION

Lipomas are the most common benign mesenchymal tumors of soft tissue, but they are rarely found in the hand, accounting for less than 1% of all hand tumors.^[1] Even more rarely, they are found in the hypothenar region, where their deep location may cause diagnostic confusion and potential neurovascular compromise due to proximity to the ulnar nerve and its branches.^[2,3] Though typically asymptomatic, larger lipomas or those with intermuscular extension may cause nerve compression symptoms such as paresthesia, weakness, or pain.^[4]

Magnetic resonance imaging (MRI) plays a pivotal role in characterizing such soft tissue masses, particularly in distinguishing lipomas from liposarcomas and assessing extension into adjacent muscular planes.^[5]

Histopathological examination remains the gold standard for diagnosis, especially when imaging and cytology are incongruent.^[6]

This case highlights a unique presentation of a hypothenar lipoma causing mild neurological symptoms and explores the diagnostic challenge posed by a misleading FNAC result.

Case Presentation

Presenting history: A 45-year-old female presented with a gradually progressive swelling over the hypothenar region of her right palm for 3 years. The swelling was painless but occasionally associated with tingling sensations radiating along the ulnar side of the hand. No history of trauma, fever,

or systemic symptoms was noted.

Clinical Examination: On inspection, a swelling was noted over the hypothenar eminence. It was oval in shape with irregular contours, and the overlying skin appeared normal. The right hand was symmetrical to the left hand except for the swelling [Figure 1].

On palpation, a soft to firm, non-tender mass measuring approximately 5.5 × 3 × 6 cm was palpated. It had limited mobility and partially well-defined margins. There was no fluctuation or compressibility. The temperature over the swelling was not raised.

Neurological examination revealed a normal sensory exam in the ulnar distribution. Motor testing showed normal abduction and adduction of the fingers. Flexion at the DIP joints of the fourth and fifth digits was normal; however, PIP and MCP joint flexion was slightly restricted. Grip strength was reduced. Tinel's sign was positive, while Froment's sign was negative. No muscle weakness or ulnar clawing was observed.

On vascular examination, both radial and ulnar pulses were

Address for correspondence: Dr. Nikhil B,
Department of Radiology, Mata Chanan Devi Hospital, New Delhi, India.
Email Id: nikhilnikib66@gmail.com

DOI:
10.21276/amit.2026.v13.i3.1067

How to cite this article: Nikhil B, Gautam V, Goyal S, Mishra S, Jain NK. A Rare Case of Giant Hypothenar Lipoma with Intermuscular Extension Causing Ulnar Nerve Irritation. *Acta Med Int.* 2026;13(3):337-340.

palpable, and capillary refill was normal. Allen's test was negative.

Functional assessment revealed that the patient reported mild difficulty in daily activities and had issues with fine motor tasks.

Imaging Findings: Magnetic Resonance Imaging (MRI) of the right hand was performed using a dedicated extremity coil. The study revealed a well-defined, lobulated lesion in the palmar aspect of the hand, localized to the hypothenar region. The lesion measured approximately $5.3 \times 3.6 \times 5.7$ cm (transverse $\times$ anteroposterior $\times$ craniocaudal). It was hyperintense on both T1- and T2-weighted sequences and showed signal suppression on fat suppressed images consistent with a lipomatous mass. The lesion extended from the level of the carpal bones proximally to the metacarpal heads distally and extended into the intermuscular plane without evidence of infiltration into tendons or bones [Figure 2].



Figure 1: Pre-operative photograph showing a swelling over the hypothenar eminence of the right palm.

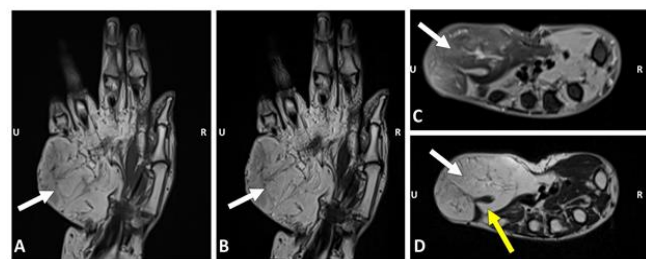


Figure: MRI of the right hand. (A) T1-weighted coronal image showing a well-defined hyperintense mass in the hypothenar region. (B) T2-weighted coronal image also showing a well-defined hyperintense mass. (C) Fat-saturated axial T1 image confirms fat signal suppression, consistent with lipoma. (D) T2-weighted axial image showing high signal and intermuscular extension. White arrow - shows lesion of interest in figures A to D. Yellow arrow - shows intermuscular extension of the lesion in figure D. MRI - Magnetic Resonance Imaging. R - Radial side. U - Ulnar side.

Correlative high-resolution ultrasonography (USG) of the right palm revealed a hyperechoic mass consistent with lipoma [Figure 3].

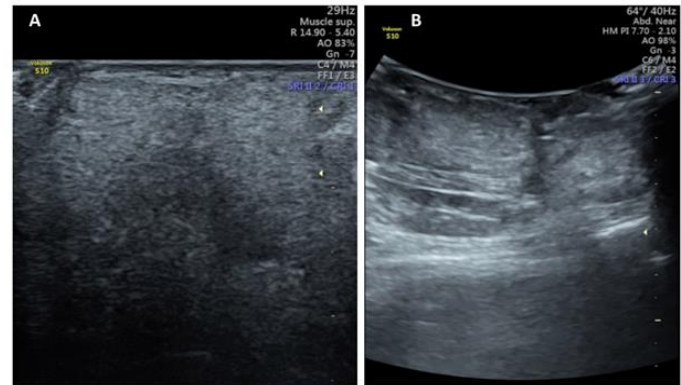


Figure 3: USG of the swelling. (A) High-frequency linear probe image showing a well-defined, homogeneously hyperechoic lesion in the hypothenar region, consistent with a lipomatous mass. (B) Convex probe image depicting the overall contour and boundaries of the lesion. USG - Ultrasonogram.

Fine-Needle Aspiration Cytology (FNAC) findings revealed a hemorrhagic background with inflammatory cells and occasional granulomatous features, including epithelioid histiocytes. These findings raised suspicion of granulomatous inflammation, needing an excisional biopsy for definitive diagnosis.

Surgical Management: The patient underwent total excision of the mass under regional anesthesia. Intraoperatively, a wellencapsulated, yellow, lobulated soft tissue mass was identified consistent with a subcutaneous lipoma which was seen extending between hypothenar muscles into the intermuscular plane, mildly displacing the digital branch of the ulnar nerve [Figure 4].

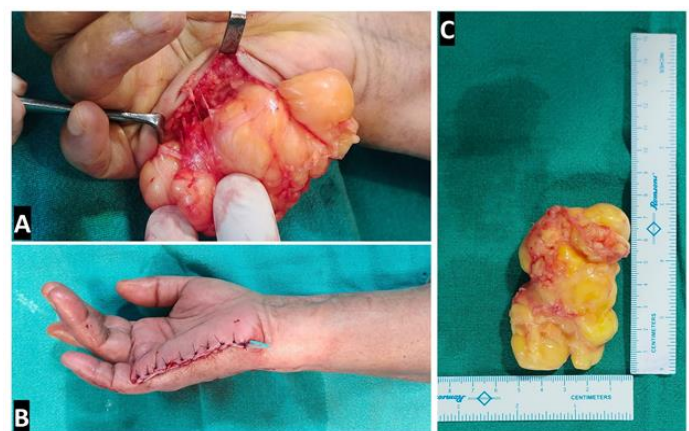


Figure 4: Intraoperative and Post-excision Findings. (A) Intraoperative view of the lesion in situ, with adjacent soft tissue retracted for visualization. (B) Post-excision image showing the sutured wound over the hypothenar region with a drain in situ. (C) Gross specimen of the excised lipoma showing a yellow, lobulated fatty mass measuring approximately 7.5×5.5 cm.

Histopathology: Confirmed mature adipocytes without any atypia, mitosis or necrosis, consistent with benign lipoma. No

granulomatous inflammation was observed histologically, explaining the FNAC discrepancy [Figure 5].

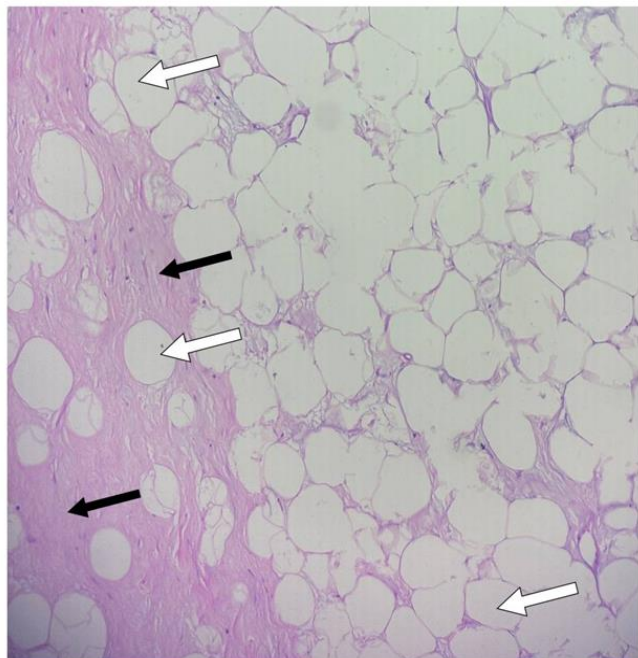


Figure 5: Histopathological Examination of the Excised Lesion: shows mature adipocytes arranged in lobules, separated by thin fibrous septae without atypia, consistent with a benign lipoma. Low-power view (H&E stain, 10× magnification). White arrow - shows mature adipocytes without any atypia. Black arrow - Fibrous septae separating the adipocyte lobules.

Follow-up and Outcomes: The postoperative course was uneventful. The wound healed well, and the patient regained full range of motion of the fingers, including improved flexion of the fifth digit on clinical follow up. The patient expressed satisfaction with both functional and cosmetic outcomes.

DISCUSSION

Lipomas are common benign tumors composed of mature adipocytes and are most commonly found in the trunk, neck, and proximal extremities. Their occurrence in the hand, especially in the hypothenar region account for less than 1% of all hand tumors making them extremely rare in hypothenar region.^[1] Due to the crowding of neurovascular structures and the limited soft tissue envelope in the hand, even small masses can become symptomatic or cause functional impairment.^[7] In our case, a giant lipoma of the hypothenar eminence was associated with mild neurological symptoms, likely due to mass effect on the digital branches of the ulnar nerve.

While most lipomas are asymptomatic, larger lesions may produce compressive symptoms such as paresthesia, weakness, or restricted range of motion.^[8] In our patient, there was mild tingling sensation along the ulnar side of the hand along with reduced grip raised concerns for ulnar nerve irritation. These symptoms were likely due to the mild compression of the digital branch of the ulnar nerve.

Imaging plays a vital role in evaluating soft tissue masses of the hand. Magnetic resonance imaging (MRI) remains the modality of choice due to its superior soft tissue contrast. Classically lipomas show well-defined margins without any local invasion and appear hyperintense on T1- and T2-weighted sequences and show loss of signal on fat-saturated images.^[1] Our case had these characteristic features on MRI leading to a confident diagnosis of lipoma. MRI also helped delineate the lesion, especially its relationship with the surrounding neurovascular structures essential for surgical planning. Ultrasound can also be used as an adjunctive because of its non-invasive and cost-effective nature, particularly in superficial lesions. Lipoma typically shows hyperechogenicity on ultrasound and was observed in our case as well.^[9] However, ultrasound is limited in assessing deeper extensions and lesion extension, where MRI becomes paramount.^[10,11]

Fine-Needle Aspiration Cytology (FNAC) is widely used for preliminary evaluation of soft tissue masses but has variable sensitivity in diagnosing lipomas.^[12] In our case, FNAC was done due to the large size of the lesion to exclude other possible lesions and showed a hemorrhagic background with inflammatory cells and granulomatous features, raising suspicion for alternative diagnoses including granulomatous inflammation or lipogranuloma. Such findings can lead to diagnostic confusion leading to surgical excision and histopathological examination for confirmation.^[12,13] This highlights the limitation of FNAC in cases where lipomas are large, deep-seated, or heterogeneous in appearance.

Surgical excision is the mainstay of treatment for symptomatic or growing lipomas, especially in those causing functional impairment or neurological signs.^[14] The goal is complete excision of the lesion while preserving adjacent neurovascular structures. Intraoperatively, our case revealed a well-encapsulated lipoma with intermuscular extension which caused mild displacement of the digital branch of the ulnar nerve without infiltration. This explains the clinical symptoms and supports the importance of detailed preoperative imaging.

Histopathological analysis showed mature adipocytes without cellular atypia, mitosis, or necrosis which confirmed the diagnosis of a benign lipoma. The absence of granulomatous inflammation on histology underscored the discrepancy with FNAC findings and emphasized the necessity for excisional biopsy in inconclusive or suspicious cases.

Outcomes following complete surgical excision of lipomas are generally excellent. The recurrence rates are very low when complete excision is done. Our patient had an uneventful recovery with complete resolution of neurological symptoms. This case emphasizes the importance of considering deep-seated lipomas in the differential diagnosis of palmar swellings and the need for a multidisciplinary approach involving clinical evaluation, imaging, cytology, and histopathology for accurate diagnosis and management.

CONCLUSION

Giant lipomas of the hypothenar region are exceedingly rare and may present with subtle neurological symptoms due to their proximity to the ulnar nerve and its digital branches. This case highlights the importance of maintaining a high index of

suspicion for deep-seated lipomas in all cases of palmar swellings, especially when atypical clinical or cytological findings are present. Magnetic Resonance Imaging (MRI) remains the most valuable imaging modality for diagnosis and surgical planning, particularly in delineating the lesion's size, extent, and neurovascular relationship. Although FNAC is a useful investigation, it may yield inconclusive or misleading results, as seen in our patient. Complete surgical excision while preserving important neurovascular structures remains the definitive treatment and provides excellent functional and cosmetic outcomes. Histopathological examination is essential for confirmation, especially when FNAC and imaging findings are discordant. A multidisciplinary diagnostic approach ensures accurate diagnosis, effective management, and prevention of long-term complications.

Additional Information

Disclosures: Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. Institutional Ethics Committee, Mata Chanan Devi Hospital, New Delhi issued approval not applicable. This case report was reviewed in accordance with the guidelines of the Institutional Ethics Committee, Mata Chanan Devi Hospital, New Delhi. As per institutional policy, ethics committee approval was not required for a single-patient case report. Written informed consent for publication was obtained from the patient. Conflicts of interest: In compliance with the ICMJE uniform disclosure form, all authors declare the following: Payment/services info: All authors have declared that no financial support was received from any organization for the submitted work. Financial relationships: All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. Other relationships: All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

Acknowledgements:

The authors thank Dr. Sonal Singhal, Consultant Radiologist, for sharing her knowledge and providing guidance in interpreting the imaging findings. We are also grateful to Dr. Kushal Monga and Dr. A J S Gulati for performing the surgical excision of the lesion, and to our fellow surgery residents, Dr. Pranav Wahi and Dr. Utkarsh Raj Pathak, for their help in patient assessment and follow-up. The authors also acknowledge the use of AI-based tools to assist in language editing and drafting of this manuscript. Data are available on reasonable request. The data are stored as de-identified participant data which are available on request to Dr. Nikhil B (nikhilnikib66@gmail.com)

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Murphey MD, Carroll JF, Flemming DJ, et al.: From the archives of the AFIP: benign musculoskeletal lipomatous lesions.. RadioGraphics. 2004, 24(5):1433-1466. 10.1148/rg.245045120
2. Tiruneh MB, Alemayehu D, Yeshaneh D, et al.: Lipoma in thenar and hypothenar eminence of the hand, a rare presentation; case report. International Journal of Surgery Case Reports. 2025, 126:110835. 10.1016/j.ijscr.2025.110835
3. Rohilla S, Yadav RK, Dhaukhandi DB: Lipoma of Guyon's canal causing ulnar neuropathy . J Orthopaed Traumatol. 2009, 10:101-103. 10.1007/s10195-009-0051-9
4. Gomez D, Samarathunga D, Dissanayake D, et al.: A giant multi-compartment lipoma of the hand causing median nerve compression: A case report and review of literature.. International journal of surgery case reports. 2024, 117:109527. 10.1016/j.ijscr.2024.109527
5. Bancroft LW, Kransdorf MJ, Peterson JJ, et al.: Benign fatty tumors: classification, clinical course, imaging appearance, and treatment. Skeletal Radiol. 35:719-733. 10.1007/s00256-006-0189-y
6. Beg S, Vasenwala SM, Haider N, et al.: A comparison of cytological and histopathological findings and role of immunostains in the diagnosis of soft tissue tumors.. Journal of cytology. 2012, 29(2):125-130. 10.4103/0970-9371.97154
7. Kim DW, Yoon JS, Eo SR, et al.: A rare case of nerve compression caused by a connected lipoma of the wrist. . Arch Hand Microsurg. 2023, 28(1):52-56. 10.12790/ahm.22.0059
8. Nadar MM, Bartoli CR, Kasdan ML: Lipomas of the hand: a review and 13 patient case series . Eplasty. 2010, 10:e66.
9. Rahmani G, McCarthy P, Bergin D: The diagnostic accuracy of ultrasonography for soft tissue lipomas: a systematic review. Acta Radiol Open. 2017, 6(6):2058460117716704. 10.1177/2058460117716704
10. Garner HW, Wessell DE, Lenchik L, et al.: ACR Appropriateness Criteria Soft Tissue Masses: 2022 Update . Journal of the American College of Radiology. 2023, 20(5S):S234-S245. 10.1016/j.jacr.2023.02.009
11. Rai N, Ranjan RK, Xalxo AR, et al.: Comparative Study of MRI and Ultrasound in Diagnosing Musculoskeletal Soft Tissue Tumours. Journal of Pharmacy & Bioallied Sciences. 2024, 16 (Suppl 4):S3806- S3808. 10.4103/jpbs.jpbs_1113_24
12. Einarsdóttir H, Skoog L, Söderlund V, et al.: Accuracy of cytology for diagnosis of lipomatous tumors: comparison with magnetic resonance and computed tomography findings in 175 cases. Acta Radiol. 2004, 45(8):840-846. 10.1080/02841850410008180
13. Gaikwad VP, Sisodiya S, Naik L: Spectrum of soft tissue lesions in upper and lower extremities on fine needle aspiration cytology: a three years' experience from Western Indian population. IP J Diagn Pathol Oncol. 2021, 6(4):301-306. 10.18231/j.jdpo.2021.064
14. Yavari M, Afshar A, Shahrokh Shahraki S, Tabrizi A, Doorandish N: Management of Symptomatic Lipoma of the Hand: A Case Series and Review of Literature. Archives of Bone and Joint Surgery. 2022, 10:530-535. 10.22038/ABJS.2021.57846.2864