



Rare Giant Dumbbell Shaped Palmar Lipoma Presenting As A Thenar Eminence Swelling: A Case Report

¹Randeep Singh Lamba, ²Harendra Jeet Singh Lamba, ³Ghatdeep Kaur Lamba, ⁴Raaghvi Kohli
¹Assistant Professor 0000-0002-8531-8653, ²Associate Professor 0000-0001-6394-252X, ³Fellow 0000-0001-6513-0269, ⁴Junior Resident 0000-0001-8535-821X,
^{1,4}Department Of Surgery, ³Department of Head & Neck Surgical Oncology, ²Department Of Pathology,
^{1,2,4}Punjab Institute Of Medical Sciences, Jalandhar, Punjab, India 144006
³Max Super Speciality Hospital, Vaishali, Ghaziabad, Uttar Pradesh, India 201012

*Corresponding Author:

Randeep Singh Lamba

Assistant Professor, Department Of Surgery,
Punjab Institute Of Medical Sciences, Jalandhar, Punjab, India
<https://orcid.org/0000-0002-8531-8653>

Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Introduction:

Lipoma is a benign tumor which originates from mature adipocytes. It is the commonest benign soft tissue tumor and can occur anywhere in the body where adipocytes are present. If it attains a huge size it can lead to cosmetic deformity. A longstanding lipoma may undergo some secondary changes.

Case Report:

A 50-year-old gentleman presented with a chief complaint of a swelling in his left hand for the last 5 months, with history of mild pain on palpation. On clinical examination, there was a swelling in the left thenar eminence approximately 4x3 cm in size, and another swelling on the dorsum of left hand medial to the anatomical snuff box approximately 2x1 cm in size. There was no sensory or motor loss in the left hand. Ultrasonography (USG) of hand revealed a well-defined echogenic mass measuring 5x2.5 cm in the left thenar eminence suggestive of lipoma. Surgical excision was done under regional anesthesia as a day case surgery. Follow-up course was uneventful.

2013 CARE checklist was duly followed and thoroughly accomplished.

Conclusion:

Surgical excision of lipoma should be considered for symptomatic or large lesions that compromise musculoskeletal function. Excision of the lipomas of hand can be done under regional anesthesia as a day case surgery. The procedure demands meticulous dissection avoiding any inadvertent damage to the adjacent neurovascular tissues. Prior USG hand should be the first radiological investigation of choice. A dumbbell shaped lipoma in hand is a rare clinical finding the shape of which can arise due to the compressions and pressures of surrounding structures.

Keywords: Lipoma, Dumbbell shaped Lipoma, Palmar Lipoma, Thenar Eminence Swelling, USG hand, Day Case Surgery

Introduction

Lipoma is a benign tumor which originates from subcutaneous neoplasm and can seldom have a mature adipocytes. It is the most common malignant potential. [1] It can occur anywhere in the

body where adipocytes are present. It can also lead to cosmetic deformity if it attains a huge size. Protrusion above normal skin margins can make the swelling develop local tenderness as it brushes against outside materials like clothes, other household articles, etc. Painful symptoms arising in lipoma of hand or wrist indicate its close approximation to neighboring neurovascular tissues or even a malignant transformation. [2] Rarely a longstanding lipoma may undergo some secondary changes like malignant transformation forming liposarcoma, myxomatous degeneration, infection, hemorrhage or saponification and calcification. Lipomas in the thigh, shoulder and retroperitoneal regions more commonly undergo malignant changes than other sites. [3] Asymptomatic lipomas can be neglected. If lipoma is symptomatic or comprise of large lesions that compromise musculoskeletal function, surgical excision should be advised. A patient can also present with multiple lipomas at non-contiguous sites. Pressure and compression from adjacent tissues can attribute to the modification in gross anatomy and shape of the tumor.

Patient Information

A 50-year-old gentleman presented with a chief complaint of a swelling in his left hand for the past 5 months. It was an incidental finding which he observed while tying turban. Afterwards he felt mild

Operative Findings [Figure 4]

Excision of the swelling was advised to the patient and planned as a day case surgery procedure. Informed consent was duly obtained from the patient in his vernacular language. The nature of investigations and the details of the procedure were satisfactorily informed to the patient in a manner and language that he understood.

Surgery was performed under regional anesthesia. A linear palmar skin incision approximately 4 cm in length was given over the most prominent part of the swelling in left thenar eminence. A well encapsulated yellowish orange swelling was localized in the subcutaneous plane. It was followed by meticulous and blunt dissection circumferentially around the swelling avoiding any injury to the adjacent structures. The swelling was seen extending to the dorsal aspect of left hand. It was completely exteriorized. It had a single feeding vessel which was ligated and divided. A dumbbell shaped swelling was

pain around the swelling while carrying out his daily activities. There was no history of trauma, increase in size of swelling, restricted hand movements, alteration in sensation, or any significant weight loss.

Clinical Findings [Figure 1] [Figure 2]

On clinical examination, there was a swelling in the left thenar eminence approximately 4x3 cm in size, and another swelling on the dorsum of left hand medial to the anatomical snuff box approximately 2x1 cm in size. Both the swellings were non-pulsatile, mobile, soft in consistency, with mild tenderness on deep palpation. Fluctuation and transillumination test were negative. The hand movements were normal. There were no signs of any sensory or motor loss. There was no associated lymphadenopathy or features of any metastatic disease. Patient underwent radiological investigations to accomplish diagnosis.

USG hand revealed a well-defined echogenic mass with linear strands measuring 5x2.5 cm in the thenar eminence of the left hand suggestive of lipoma.

X-ray assessment revealed no calcification in the swelling or any bony deformity. [Figure 3]

Magnetic resonance imaging (MRI) had to be avoided because of patient's personal financial restraints.

retrieved and excised in toto and sent for histopathological examination (HPE). [Figure 5] Hemostasis was achieved and skin was closed with interrupted skin sutures. [Figure 6] A compressive dressing was applied.

Post-Operative Course

The patient was discharged on the very same day. Follow-up was done at 1 week, 2 weeks and 4 weeks interval post-operatively. Sutures were removed on follow-up at 2nd week. No restriction and/or alteration in hand movement and sensation was noted. The follow-up course was uneventful.

HPE report revealed the findings to be consistent with benign lipomatous lesion (lipoma).

2013 CARE checklist was duly followed and thoroughly accomplished.

Diagnostic Assessment

USG revealed a well-defined echogenic mass with linear strands measuring 5x2.5 cm in the thenar eminence of the left hand suggestive of lipoma.

X-ray assessment revealed no calcification in the swelling or any bone deformity. [Figure 3]

HPE revealed findings to be consistent with benign lipomatous lesion (lipoma).

Discussion

Lipoma is a benign tumor arising from mature adipocytes. Lipoma is the most common subcutaneous neoplasm with rare malignant potential. [1]

Lipoma of the hand and wrist can occur at various anatomic locations; subcutaneous tissues, thenar or hypothenar muscles, carpal tunnel or Guyon's canal, and rarely even in bone or nerve. It typically presents as a painless, soft and mobile mass that can grow slowly over a period of months or even years. Painful findings suggest close approximation to adjacent neurovascular structures or, less commonly, even a malignant transformation. Lipoma does not transilluminate. On HPE, it reveals mature fat cells. X-rays are mostly inconclusive and typically reveal no abnormality. [2]

USG hand in our case was used as the first radiological investigation to confirm the diagnosis. Singh K (2017) reported USG as the radiological investigation of choice for majority of the pathologies of the wrist. It provides detailed depiction of superficial structures. It is less expensive, and allows dynamic examinations of the wrist. MRI can help in confirming diagnosis of the complex lesions. [4]

Though excision under regional anesthesia can be performed with meticulous dissection for asymptomatic lipoma yet marginal excision should be considered for symptomatic or enlarging lipomas causing motor or sensory dysfunction of hand. MRI can aid in evaluation of proximity to and involvement of other neighboring structures, followed by marginal excision if MRI findings are consistent with diagnosis of a lipoma. In inconsistent MRI findings, incisional biopsy must be performed. Recurrence after marginal excision is rare. [2] Malignant transformation to liposarcoma is exceedingly rare but has been reported. [5]

In MRI, lipoma appears as a bright T1 lesion and dark T2 lesion making MRI the most helpful imaging modality in complete evaluation of a lipoma. [6]

USG and MRI are important in the characterization of wrist pathologies. USG provides a reliable diagnosis regarding cystic or solid nature of lesions and can help in diagnosis based on their imaging patterns. [7]

Lipoma can have rare local complications. Malignant transformation should be suspected if there is rapid increase in size, enhanced tenderness, symptoms of distant metastasis, inflammatory changes, local rise in temperature, dilated veins over swelling, or fixity to deeper structures or skin. [3]

Dumbbell shape of lipoma has been attributed to compression and pressure from the surrounding structures.

Dumbbell shaped lipoma has been reported at different anatomical locations, e.g. sole, zygomatic arch, thigh, and chest. [8,9,10,11]

A dumbbell shaped lipoma of hand is rare and has not yet been reported.

Conclusion

Lipoma of hand and wrist can occur in multiple anatomical locations. A dumbbell shaped lipoma in hand is a rare clinical finding which can arise due to the compressions and pressures of surrounding structures. Surgical excision should be considered for symptomatic lipomas. Excision of the lipoma of hand can be done under regional anesthesia as a day case surgery. The procedure demands meticulous dissection avoiding any damage to the adjacent neurovascular tissues. Radiological investigations before surgery can help in selection of appropriate surgery. Prior USG hand provides detailed depiction of superficial structures, and allows dynamic examinations of the hand. USG should be the first choice of radiological investigation and also for majority of the pathologies of the hand. Along with MRI, USG can aid in making a specific diagnosis of few of the lesions when there is uncertainty in confirming the diagnosis.

Ethical Approval

Being a standard surgical procedure not demanding any experimental study or research, no ethical approval was warranted in this case report.

References

1. Mentzel T. Cutaneous lipomatous neoplasms. *Semin Diagn Pathol.* 2001;18:250-7.
2. Lifchez SD, Kelamis JA. Surgery of the Hand and Wrist. In: Brunnicardi FC, Andersen DK, Billiar TR, et al., editors. *Schwartz's principles of Surgery.* 10th ed. New Delhi, New Delhi: McGraw-Hill Education; 2015. p. 1816-.
3. Saha ML. Skin and Subcutaneous Tissue. In: *Bedside Clinics in Surgery.* 2nd ed. New Delhi, New Delhi: Jaypee Brothers Medical Publishers Private Limited; 2014. p. 333-6.
4. Singh K, Thukral CL, Gupta K. Tendo-ligamentous pathologies of the wrist joint: Can ultrasonography replace Magnetic Resonance Imaging? *The Egyptian Journal of Radiology and Nuclear Medicine.* 2017Sep1;48(3):653-60.
5. Lee Y-J, Jeong YJ, Lee JH, Jun Y-J, Kim Y-J. Liposarcoma in the axilla developed from a longstanding lipoma. *Archives of Plastic Surgery.* 2014Sep15;41(05):600-2.
6. Calandruccio JH, Jobe MT. Tumors and tumorous conditions of the hand. In: Canale ST, Campbell WC, eds. *Campbell's Operative Orthopaedics.* 9th ed. St. Louis: Mosby; 1998:3703-33.
7. Orman G, Yeşiladalı G, Olcay E, Duymuş M. Comparison of ultrasonography and magnetic resonance imaging for diagnosis of soft tissue masses of the hand and wrist. *Electronic Journal of General Medicine.* 2015;12(1).
8. Satish C. A rare case of dumb-bell lipoma of the sole. *Journal of Plastic, Reconstructive & Aesthetic Surgery.* 2011Jul18;64(12).
9. Kakudo N, Kusumoto K, Takemoto T, Tanaka Y, Kurokawa I, Ogawa Y. Dumbbell-formed lipomas under the Zygomatic Arch. *Journal of Plastic, Reconstructive & Aesthetic Surgery.* 2006Sep5;61(1):107-10.
10. Kimura K, Ikeda M, Futani H, Hamanaka M, Kataoka K, Beppu N, et al. Laparoscopic resection of a dumbbell-shaped lipoma extending through the obturator foramen: A case report. *Asian Journal of Endoscopic Surgery.* 2019Mar19;13(1):114-6.
11. Çakmak H, Bayram FC. A giant intrathoracic and extrathoracic dumbbell-shaped lipoma. *European Journal of Cardio-Thoracic Surgery.* 2010Mar1;37(3):735-.

Figure 1 Palmar Swelling Left hand



Figure 2 Dorsum of Left Hand



Figure 3 X-ray Left Hand



Figure 4 Intra-operative



Figure 5 Specimen



Figure 6 Skin Closure

