

Giant Intramuscular Lipoma of Biceps Brachii – A Rare Case Report

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Abstract

Lipomas are benign mesenchymal tumors. They are the most common type of soft tissue tumors. Intramuscular lipoma is a relatively uncommon condition and accounts for about 1.8% of all primary tumors of adipose tissue and are relatively rare in upper extremity. When deep, large and unusual in location, magnetic resonance imaging (MRI) can identify and localise these tumours and is the best modality to differentiate lipoma and liposarcoma.

We report an extremely rare and interesting case of giant intramuscular biceps brachii lipoma. A 22-year male patient presented with insidious onset, firm and non-tender swelling in the left elbow without any distal neurovascular deficits. MRI and biopsy were suggestive of lipoma. Wide local excision was done and patient had an uneventful recovery. Post-operative histopathology was suggestive of lipoma. To conclude, intramuscular giant lipoma of biceps brachii is an infrequent clinical entity due to its location. Imaging is necessary to differentiate it from its malignant counterpart and to plan surgical management.

Introduction:

Lipomas are believed to arise from the primordial adipocytes and not from adult fat cells. They are usually small in size but rarely attain large sizes. Lesions more than five cm in size are called giant lipomas. Lipomas can occur anywhere in the body but occur most commonly in the subcutaneous tissue of the head, neck, shoulders and back. Intramuscular lipoma is a relatively uncommon condition and accounts for about 1.8% of all primary tumors of adipose tissue [2]. Lipomas are rarely found in the upper extremity [3]. The above case is very unique with respect to the size and location of the lipoma. Clinically, deep seated lipomas are difficult to differentiate from the list of differential diagnoses possible.

Case Presentation:

A 22-year male student presented to the surgical department with complaints of a gradually progressive painless mass in his left elbow for five years. The patient had no complaints of pain, discomfort or restricted range of motion at the left elbow joint and recalled no antecedent trauma or neurological symptoms associated with the swelling. There was no significant family or past history. On examination, there was a well-circumscribed, non-tender mass in the left-cubital fossa which was firm in consistency [Figure 1]. There were no distal neurovascular deficits. The plane of the swelling was deep to deep fascia on examination. Ultrasound showed well defined intramuscular hyperechoic lesion of size 5 x 10 x 15 cms. X-ray of the left elbow with upper arm showed soft tissue lucency in the lower part of the arm and cubital fossa.

Magnetic resonance imaging (MRI) revealed a well defined, irregular, fat signal intensity lesion measuring 5 x 10 x 16 cm in the bicipital myofascial plane without surrounding myofascial or subcutaneous edema, extending from mid-arm and reaching along the bicipital tendon to the proximal forearm suggestive of a giant lipoma [Figure 2]. Image guided core needle biopsy was suggestive of lipoma. The patient

underwent wide local excision of the lesion. Intra-operatively, a large dumbbell shaped lesion of size 15 x 15 x 10 cms, intramuscular in location within the biceps brachii was present in the cubital fossa [Figure 3]. Post-operative histology was suggestive of lipoma. The patient had an uneventful recovery in the post-operative period. At one year follow up, patient is healthy with no recurrence and normal joint movements at the left elbow joint.

Discussion:

Lipomas are the most common soft tissue tumors. Sub-cutaneous lipoma can be diagnosed with ease, but diagnosing lipomas in the deeper planes clinically is difficult. The above case report is unique with regards to the intra-muscular location of the lipoma. Due to its location deep to deep fascia, the consistency was firm as opposed to the usual soft consistency of lipoma. The very large size of the lesion further made the diagnosis difficult and hence the aid of imaging was taken.

The main concern while managing giant lipoma is the possibility of malignancy. Well differentiated liposarcoma should always be a differential diagnosis [3]. Risk factors include rapid growth, size greater than five centimeters and deep seated lesion. MRI is a very useful investigation to help differentiate benign lesion from malignancy [4]. Imaging should be performed before tissue diagnosis as biopsy may alter the tumor architecture. Well differentiated liposarcomas show increased vascularity on contrast enhanced MRI differentiating it from benign lesion [5]. High grade lesions show decreased fat content on imaging [5]. Biopsy should be preferentially done under image guidance to avoid sampling errors.

Management of these lesions is surgical excision. Normal lipomas have a pseudocapsule which makes dissection easier. However, intramuscular lipomas are often difficult to dissect and need to be dissected out with surrounding muscular fibers. Authors have faced similar difficulty while operating the above case. The lesion was close to the joint and neurovascular structures adding to the difficulty of dissection. Imaging helps to preoperatively plan the dissection and incision [6]. Surgical incision should also include the biopsy site if there are risk factors for malignancy. Recurrence rate after excision varies from 3–62.5% [7].

Conclusion:

Intramuscular giant lipoma of biceps brachii is an infrequent clinical entity. Malignancy should be ruled out always while treating large and deep seated lesions. MRI is a useful adjunctive. Biopsy is confirmative of the diagnosis. Surgical excision is the treatment of choice and the possibility of functional impairment post surgery should be discussed preoperatively with the patient in case of intramuscular lipomas.

Declarations:

Funding:

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Conflict of interests:

Authors declare that they have no conflicts of interest.

Ethics approval:

Ethical approval is not required in our institution to publish anonymous case report.

Consent for publication:

Written informed consent was obtained from the patient to publish his personal and clinical details along with identifying images.

Contributions:

Author order	Author Name (First name, Middle name initial followed by Family name)	CONTRIBUTIONS
1	Saifullah Nizam	Concept and design, Drafting the article
2	Dinesh Kardam	Concept and design, Final approval of the version to be published
3	Raghav Yelamanchi	Concept and design, Drafting the article, Final approval of the version to be published
4	Udit Khurana	Concept and design, Drafting the article

References:

1. 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. doi: 10.1016/j.jhsb.2005.05.002.
2. Fletcher CD, Martin-Bates E. Intramuscular and intermuscular lipoma: neglected diagnoses. *Histopathology.* 1988;12(3):2752-87. doi: 10.1111/j.1365-2559.1988.tb01942.x.
3. Allen B, Rader C, Babigian A. Giant lipomas of the upper extremity. *Can J Plast Surg.* 2007;15(3):141-144. doi: 10.1177/229255030701500308.
4. Silistreli OK, Durmuş EU, Ulusal BG, Oztan Y, Görgü M. What should be the treatment modality in giant cutaneous lipomas? Review of the literature and report of 4 cases. *Br J Plast Surg.* 2005;58(3):394-398. doi: 10.1016/j.bjps.2004.09.005.
5. Yang YJ, Damron TA, Cohen H, Hojnowski L. Distinction of well-differentiated liposarcoma from lipoma in two patients with multiple well-differentiated fatty masses. *Skeletal Radiol.* 2001;30(10):584-589. doi: 10.1007/s002560100395.

6. Toft F. Surgical resection of a giant intramuscular lipoma of the biceps brachii: a case report and review of the literature. Arch Orthop Trauma Surg. 2020. doi: 10.1007/s00402-020-03614-0.
7. Weiss SW. Lipomatous tumors. Monogr Pathol. 1996;38:207-239. PMID: 8744279.

Figures



Figure 1

Clinical photograph of the swelling

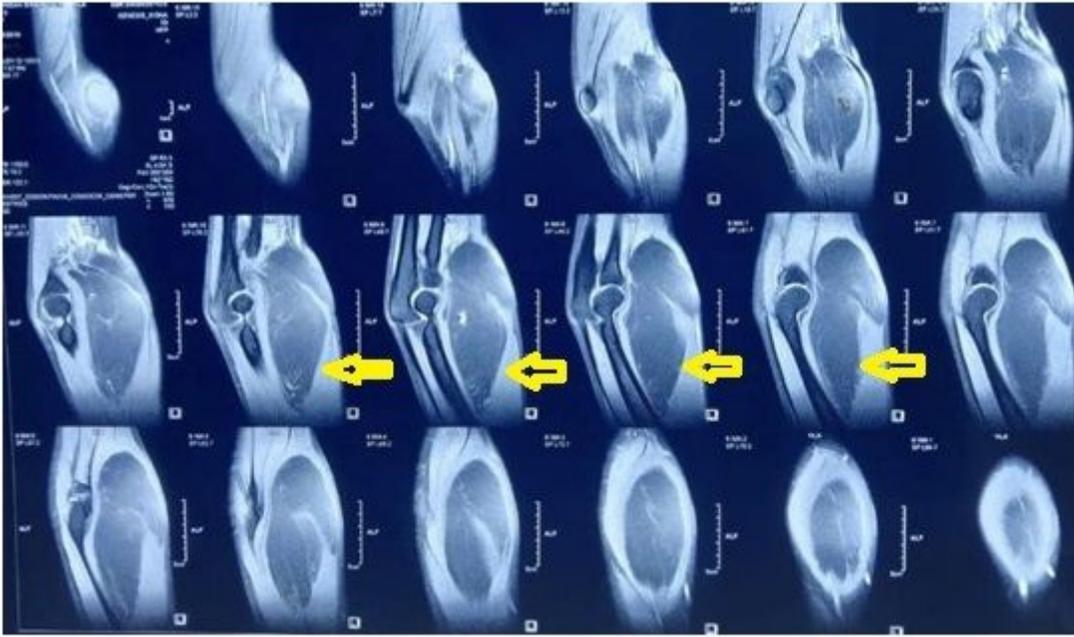


Figure 2

MRI images of the tumor

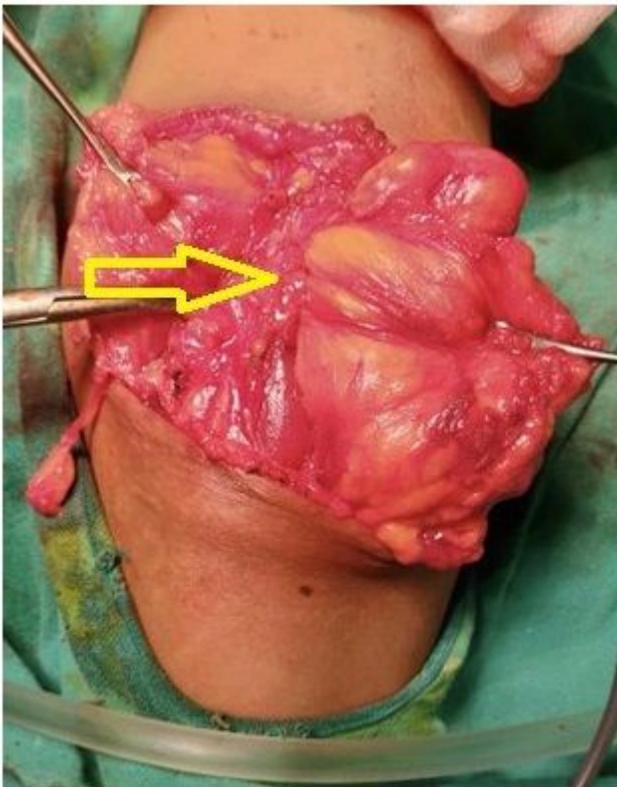


Figure 3

Intra-operative image of the tumor

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