



INTRAMUSCULAR LIPOMA OF BICEPS BRACHII - A RARE CASE PRESENTATION

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ABSTRACT

Lipomas are the most common soft tissue mesenchymal tumors. They are benign neoplasms consisting of mature fatty tissue. Lipomas can be grouped via various approaches based on location, constitution, etc. When they are present underneath an enclosing fascia, they are referred to as deep seated lipomas. Intramuscular lipoma is a fairly rare entity as compared to other varieties where the location is found to be within the muscle fibres. Clinically and histopathologically intramuscular lipomas mimic liposarcomas. Here we present a rare case of intramuscular lipoma within the belly of biceps brachii muscle and do an extensive review of literature.

KEYWORDS : intramuscular lipoma, liposarcoma, infiltrating lipoma, lipoma**INTRODUCTION:**

Lipomas are the most common mesenchymal tumors. Majority of these are present just beneath the skin and within the plane of the subcutaneous tissue; referred to as "subcutaneous lipomas". Subcutaneous lipomas are superficial to the enclosing fascias. Intramuscular lipomas are a clinically distinct, rare entity wherein the lipomatous lesion is present within the plane of the muscle. There have been various scattered case reports about this very variant of the lipomatous entity dating back to the eighteenth century. In 1853, Paget described a lipoma present within the substance of the Trapezius muscle. In 1946, Regan et al pitched the term "Infiltrating lipoma" which was further subclassified by Greenberg et al into intermuscular and intramuscular varieties. Greenberg's dichotomy was based on the rudimentary classification by Moriconi which took note of the fact that whether the lipoma was present within the substance of the muscle or between the different muscles. In the later half of the nineteenth century, it was established beyond doubt that intramuscular lipomas can be infiltrating, non-infiltrating (well defined) or mixed (with areas of well defined contours and infiltration in the same lesion).

Intra muscular lipomas are relatively rare and account for less than 1 % of the total lipoma prevalence and just over 1.8% of all primary tumours of adipose tissue. Extensive prevalence and incidence studies by Fletcher et al concluded that more than 80% of intramuscular lipomas are of the infiltrative variety and less than 20% are of the well circumscribed one with average age of presentation being 51.5 and 47.25 years respectively. In case reports coexistence of intramuscular lipomas with other lipomatous and non-lipomatous lesions have been reported viz. spindle cell lipoma, well differentiated liposarcoma, etc. Majority of the studies have pointed towards female preponderance but some significant large studies for example one done by Ramos-Pacua et al had conflicting results as far as gender predominance was concerned.

Intramuscular lipomas can occur at any anatomical site. Basset et al reported 47% of these lesions to be confined to upper limb and chest wall. Nishida et al documented the most common site to be thigh, followed by shoulder.

Trauma, chronic irritation, obesity, developmental disorders, endocrine disorders have been postulated to be the etiopathogenetic factors for intramuscular lipomas but the exact culprit remains elusive. Ramos-Pacua et al proposed a direct relationship of the entity with BMI (body mass index) since two thirds of their patients were obese.

Clinically, intramuscular lipomas present as asymptomatic, slow

growing masses. With increasing size and based on the anatomical location, symptoms appear which can range from mechanical (restricting movements) to local venous congestion and neuropathies (pressure effects on veins and nerves. Clinical examination reveals a swelling soft in consistence (various degrees of firmness can be encountered based on proportion of fibrous stroma); mobile (will vary with the degree of fixity to the muscle fibres) and mostly non tender. Regional lymph nodes are not significant.

Imaging studies are quite helpful for evaluating lipomas.

Ultrasound of intramuscular lipomas (Paunipager et al), on average, demonstrate a hyperechoic signal as compared to the surrounding muscle tissue (a small subset with isoechoic and hypoechoic signals has also been described). Most lipomas presented with fine internal echoes, oriented parallel to the long axis of the tumor.

Computed Tomography is of great importance in diagnosis of intramuscular lipomas. Hounsfield units are in the negative scale and attenuation is equivalent to that of fat. Shape is mostly ovoid or fusiform (differential- Liposarcoma : oblong or dumbbell shaped).

Magnetic Resonance Imaging is very helpful in the evaluation. The lesion demonstrates high signal intensity on both, T1 and T2 sequences. Fat suppression sequences demonstrate signal suppression. MRI is an excellent tool for differentiating lipoma from liposarcoma. MRI can distinguish lipoma from well differentiated liposarcoma based on increased vascularity seen in malignant tissue. As compared to lipoma, liposarcoma is of bigger size, multilobular and have more and thicker septae (with nodules).

Treatment is essentially surgical with complete excision of the lesion. Wide excision on all aspects will prevent recurrences. Surgical debulking is a good option where complete excision has anatomical limitations. Intra muscular location makes removal technically challenging and may require removal of rim of surrounding tissue to obtain adequate margins. Asymptomatic lesions can be tried on conservative management with watchful attitude for any alarming changes.

Surgical approach to an intramuscular lipomatous tumor is still dicey; given the fact that most of the primitive work on intramuscular lipomas did not pay enough heed to differentiating it from liposarcoma, majorly due to absence of superior diagnostic modalities. Therefore, reported recurrences of lipomas may be due to undiagnosed liposarcomas. One approach advocates using intra operative frozen section studies to document clear margins. A novel approach can be to perform a wide excision of tumours with doubtful appearance on MRI. In unequivocal MRI labelled lipomas,

excision with aim of macroscopic R0 resection and subsequent histopathological study to rule out any sarcomatous component which may be missed on MRI.

CASE REPORT:

We here report a case of a 47 year old hypertensive and diabetic gentleman who presented to us with the chief complaint of a swelling in the medial aspect of right arm of six months duration. The swelling was progressive, painless and was not associated with any tingling sensation in the affected arm. There was no history of weight loss. On examination, a swelling was appreciable on medial aspect of right arm which was about 15 x 6 cm. Skin overlying the swelling was normal in appearance. The swelling was soft in consistence, non tender, relatively fixed to the muscle. No fluctuation or transillumination was appreciable. There were no significant auscultatory findings over the swelling. There was no neurological deficit in the distal affected arm and peripheral pulses, distal to the lump were normal in the affected arm.

Standard algorithm was followed for management. MRI reported a swelling, about 14.9 x 3.1 x 5.9 cm, in the plane of the biceps brachii muscle of the right arm. FNAC finding was suggestive of lipoma. After relevant investigations, written informed consent, pre anesthetic checkup and possibility of per operative frozen section, patient was taken up for the procedure of excision of the tumour. Gross intra operative appearance was of lipomatous tumor within the plane of right biceps brachii muscle. It showed no infiltration or lobulation. Excised tumor specimen was sent for HPE. Histopathological study reported the tumor to be composed of mature adipose tissue with no sarcomatous element. Post operative recovery was uneventful and 2 month post operative follow up demonstrated no recurrence or surgical complications.



(A)

(B)

A) APPEARANCE OF LUMP ON PHYSICAL EXAMINATION
B) MRI DEMONSTRATING LIPOMA WITHIN THE PLANE OF THE BICEPS BRACHII MUSCLE



(C)

(D)

C) INTRA-OPERATIVE APPEARANCE AFTER DIVIDING FASCIA OF BICEPS BRACHII MUSCLE
D) GROSS APPEARANCE OF EXCISED SPECIMEN

DISCUSSION:

Lipomas are without doubt the most common mesenchymal tumors encountered in surgical practice. Most common variety remains to be the subcutaneous lipoma. Intramuscular lipoma is a

rare variant of the lesion which is present beneath the enclosing fascia, a plane deeper to that of the most common variant. Etiopathogenesis remains a point of contention with "multiple convicts but unknown culprit". Radiological investigations are indicated for suggesting a most probable diagnosis. Imaging also helps in suggesting the chances of the most important differential of the pathologic entity- "LIPOSARCOMA". Imaging can suggest any infiltration in the surrounding tissue planes, if any, and it bears a significant impact on planning the extent of resection anticipated. However, the basics still hold true through eternity that be it lipoma or liposarcoma, the final diagnosis is a histological one rather than clinical or radiological. Management for asymptomatic lesions can be watchful waiting but symptomatic ones go under the knife; given the risk of it being a liposarcoma. Further studies are needed as far as intramuscular lipomas are concerned. Studies and case reports engraved in the literature before the advent of advanced histologic and cytogenetic methodologies stand on dicey grounds, taking into account the fact that there are high chances that low grade liposarcomas could have been missed and erroneously labelled as intramuscular lipomas.

CONCLUSION:

Intramuscular lipoma is an important entity that needs heed given the fact that it is a rare variant of a common pathology; hence with a high propensity to be missed out with casual approach. Room for error is very small due to the notorious differential of liposarcoma. The sole purpose of reporting this clinical entity in present scenario is to create a new literature for it; the older one fading away due to non validation by the present day superior molecular methodologies. A strong and valid literature for intramuscular lipomas will help us answer the unanswered – what is the etiopathogenesis? How do we differentiate it more conclusively from liposarcoma? What is the ideal treatment?

We consider the intramuscular variant of lipoma worthy of the attention because:

"IT IS THE AMBIGUOUS OF THE PERSPICUOUS"

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