

## Intramuscular Lipoma at Shoulder: A Rare Case Report.

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### ABSTRACT

Lipomas are the most common type of soft tissue tumors. Intramuscular lipoma is a rare type of deep-seated lipomas, which arise within the skeletal muscle fibres. It can arise in the background of history of trauma, obesity, chronic irritation, metabolic disorders, etc. Lipomas are usually benign, but sometimes clinically and grossly, they simulate malignancy. Intramuscular lipomas also need separation from muscular dystrophies. Histopathology is must to differentiate. Prognosis of intramuscular lipoma is very good and marginal excision is the treatment of choice. We report a case of 32 years old female, who presented with a painless swelling shoulder since six months. She had history of trauma eight years back. Grossly, the received mass was yellow-tan coloured, well circumscribed swelling of soft tissue along with muscle. Histopathologically, features are consistent with intramuscular lipoma. We report this case because of its rarity.

**Keywords:** Intramuscular lipoma, trauma, histopathology.

### INTRODUCTION

Lipomas are benign and are the most common soft tissue tumors.<sup>[1,2]</sup> Lipomas can originate within subcutaneous tissue i.e. superficial lipoma or within deep soft tissues i.e. deep lipoma or even on the surfaces of bone i.e. parosteal lipoma. Deep seated lipomas which arise within skeletal muscle fibres are called intramuscular and which arise between the skeletal muscle fibres are called inter-muscular lipomas.<sup>[1]</sup> Intramuscular lipoma involves skeletal muscle in locations including the trunk, head and neck region, upper and lower extremities.<sup>[1,2]</sup> Inter-muscular lipoma arises between muscles most frequently in the anterior abdominal wall.<sup>[1]</sup> Intramuscular lipoma accounts for 1.8% of all adipose tissue tumors and <1 % of all lipomas.<sup>[2]</sup> It usually occurs in age group of 40-70 years, more common in obese.<sup>[1,2]</sup> Intramuscular lipomas are of 3 types: infiltrative, well defined and mixed. Many of the inter-muscular and few intramuscular grow by expansion and enclosure of other structures rather than infiltration.<sup>[2]</sup>

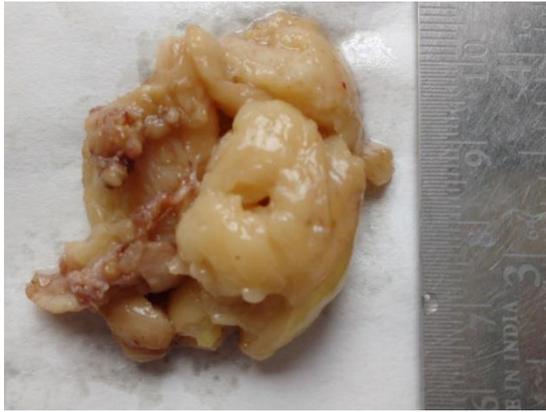
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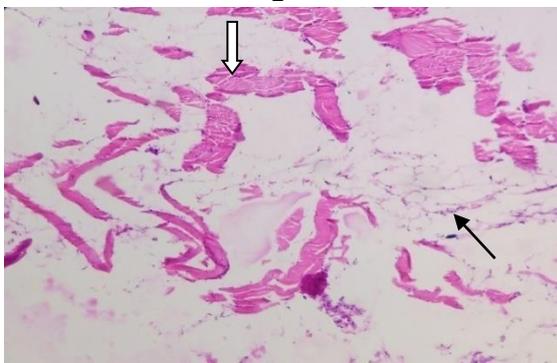
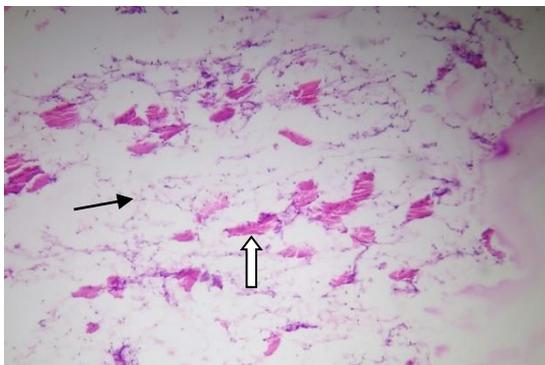
We report a case of 32 years old female, who presented with soft to firm swelling shoulder region since six months. On gross examination, swelling was well circumscribed, soft and with yellow-tan appearance. Microscopically, there is seen intermingling of mature adipose tissue and skeletal muscle fibres. These features are consistent with intramuscular lipoma.

### CASE REPORT

A 32 years old female came in surgery OPD with complaints of painless swelling at shoulder region since six months. Swelling was slowly progressive in size. She had history of trauma 8 years back. On examination, swelling was non-tender, well circumscribed, soft to firm in consistency. Swelling was excised and sent to our department of Pathology for histopathological examination. On gross examination, received soft tissue mass measured around 5x4x2 cm in size. The appearance was yellow-tan. Also seen were dark brown areas, as highlighted in the [Figure 1]. On microscopic examination [Figures 1 & 2], there are seen fibro fatty fragments of mature adipose tissue intermingling with the skeletal muscle fibres. No cytological atypia was seen. No lipoblast seen. All muscle fibres as well as adipocytes are of uniform size. Histopathological features are those of intramuscular lipoma.



**Figure 1: Photograph of gross specimen showing well-circumscribed tan yellow soft tissue piece with some dark brown areas.**



**Figure 2 & 3: Photomicrograph showing 400 x view showing intermingling of mature adipose tissue (thin arrow) and skeletal muscle fibres (thick arrow).**

## DISCUSSION

Intramuscular lipomas most likely have neoplastic pathogenesis and represent a true neoplasm directly originating from multipotent mesenchymal cells. Reactive pathogenesis has been proposed as well. Trauma, chronic irritation, obesity, developmental disorders, endocrine, metabolic dysfunction and genetic factors, provoke the uncontrolled growth of lipomas.<sup>[1,3,4]</sup> In our case the probable cause is trauma.

Clinically, lipomas usually present as a painless soft tissue mass, except for larger ones that can be painful when they compress peripheral nerves. Superficial lipomas are generally smaller (<5cm) than the deep seated ones (>5cm). Consistency varies with density of fibrous tissue stroma. Clinically, intramuscular lipomas are difficult to differentiate from other benign and malignant masses of soft tissue.<sup>[1,5]</sup> In our case, swelling was soft, non-tender and well circumscribed.

Grossly, majority are circumscribed, lobulated masses of yellowish soft tissue with mottled tan surface and soft consistency. Size ranges from 1 – 25 cm. Cut surface varies from yellow to dark tan. Intramuscular and inter-muscular lipoma do not show any specific gross features except that a portion of skeletal muscle is often attached to the periphery of the tumour. In infiltrative type, bundles of muscle fibres can be noticed passing through the tumor.<sup>[1,2]</sup> In our case, excised soft tissue mass measured around 5x4x2 cm in size. The appearance was yellow-tan. Also seen was bit of muscle.

Microscopically, Intramuscular lipoma may be either well demarcated from the surrounding skeletal muscle or, more often, shows an infiltrative growth pattern with mature adipocytes infiltrating and encasing skeletal muscle fibres that often show evidence of atrophy. Intramuscular lipomas are of three types: Infiltrative type, well-circumscribed type and mixed type. Infiltrative intramuscular lipomas consist of mature adipocytes of uniform size and shape, which infiltrate between muscle fibres and at places, completely replace the muscle fibres. In transverse sections, muscle fibres show chequer board-like appearance. In longitudinal sections, muscle fibres show striations. Adipocytes contain small flattened and peripheral nuclei with no atypia or pleomorphism. No lipoblasts are seen.<sup>[6]</sup> Well circumscribed intramuscular lipomas are composed of discrete mass of uniform, mature adipocytes, which are clearly delineated from the surrounding muscle. No fatty infiltration of adjacent muscle fibres and entrapped muscle is typically seen within the tumor itself. In these cases, fibrous stroma condenses towards periphery to form a capsule. Also no cytological atypia or lipoblasts are seen.<sup>[2,6]</sup> The sub classification of conventional lipoma does not have any prognostic significance except for the infiltrating intramuscular lipoma that has a higher local recurrence rate. Therefore total removal of the involved muscle or a compartmental resection is advised for these infiltrating tumours in order to minimize local recurrence.<sup>[1]</sup>

Histologically, differential diagnosis of intramuscular lipoma is mainly from well-differentiated liposarcoma. Well differentiated liposarcoma contains atypical cells or vacuolated lipoblasts admixed with fibroblasts like spindle

cells, frequently located in the septae. The other differential diagnosis is from intramuscular hemangioma. It consists of prominent adipose tissue component replacing adjacent muscle. Diagnosis is helped by presence of extensive vascular component.<sup>[2]</sup> Muscular dystrophies may also result in fatty degeneration and fatty replacement of the muscle. They are excluded by presence of variable fiber size, fiber necrosis, regeneration, inflammation and connective tissue deposition.<sup>[2]</sup>

In contrast to deep seated lipomas of the lower extremity or retroperitoneal space, prognosis of deep seated lipomas of the upper extremity is good irrelevant of their size.<sup>[1]</sup>

### CONCLUSION

Lipomas are usually benign. Intramuscular lipomas are deep seated lipomas arising within the muscle. Many factors underlie its etiopathogenesis. In our case, it was trauma. It is rare type with good prognosis. Clinically and grossly, it can mimic malignancy. Histopathology helps in differential diagnosis. Marginal excision is the treatment of choice. Knowledge of this pathology can help physician to provide appropriate care and counselling of patient and prevent anxiety and fear from malignancy.

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