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GIANT INTRAMUSCULAR LIPOMA OF THE FOREARM – A RARE CASE REPORT

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ABSTRACT
The most prevalent soft tissue tumors that originate from adipose tissues are lipomas. They grow slowly, hardly getting larger than 2 cm. Giant lipomas are tumors larger than 5 cm that can develop anywhere in the body, albeit they are rare in the upper limbs. Most lipomas are asymptomatic, but when they enlarge, they can produce symptoms like discomfort, limb pain, and cosmetic deformity because they squeeze the underlying neurovascular structures. Magnetic resonance imaging is necessary for deep-seated lipomas, such as intramuscular or parosteal lipomas, in order to assess the lesion and rule out any malignant characteristics. It is important to consider the possibility of malignant development into liposarcoma in big lipomas. Malignant transformation appears as a solid component, hemorrhage, and infiltration into neurovascular regions on imaging. Following removal, histological analysis confirms these findings. Usually, surgical excision results in full symptom recovery. Here, we report a rare instance of a massive forearm intramuscular lipoma.

KEYWORDS: Lipoma, Giant, Intramuscular, Excision, Liposarcoma

INTRODUCTION
Lipomas make up about 16% of all mesenchymal tumors and are among the most prevalent benign mesenchymal tumors of the extremities. (1) Despite being slow-growing tumors, they can develop in any tissue, albeit they are typically found in the subcutaneous plane. They are divided into the following categories according to where they are found: (A) subcutaneous or subfascial; (B) intramuscular or intermuscular; and (C) visceral, maybe serosal or sub-serosal. (2,3) Because women have more fat than men, lipomas are more common in them, particularly in the fourth and sixth decades. (4,5) Giant lipomas are defined as those that weigh 1000 grams or more or have a diameter of 10 cm or more in one dimension. (6) Although they are uncommon, giant lipomas can result in pain, decreased sensation from the compression of nearby structures, mechanical malfunction, and social shame. Lipomas typically appear as a slight swelling, but occasionally they can grow significantly, raising the possibility that they could develop into liposarcoma. (7) The cause of intramuscular lipomas is still unknown, and their incidence is less than 1% of all lipomas. An MRI is necessary because lesions deep inside the fascia can present as a malignant soft-tissue tumor. (8)

Case Report
63 year old elderly female presented to us with swelling in the left forearm for 3 years. It started spontaneously and was progressing till the present size. She gives history of occasional pain but no history of trauma, fever, ulceration and bleeding. She is a known case of Type 2 Diabetes mellitus, hypertension and hypothyroidism on treatment. On examination, a soft to firm swelling present over the volar aspect of the left forearm was present measuring about 10 x 5 cm, non-tender, mobile, becomes less prominent on contracting the flexor muscles of forearm, smooth surface and no regional lymphadenopathy. (Fig. 1) A clinical diagnosis of a giant intramuscular lipoma was made. We planned for surgical excision under regional anaesthesia. An incision was made over the swelling and deepened in layers. (Fig. 2) The flexor digitorum superficialis muscle was split and the lipoma was identified. (Fig. 3) The lipoma was found to be displacing the flexor carpi ulnaris muscle and compressing the ulnar nerve. The lesion was excised in toto and sent for histopathology. (Fig. 4) Hemostasis was secured, muscle was repaired with 3-0 polyglactin sutures. Skin was closed primarily with 3-0 nylon sutures and compression dressing was applied.

(Fig. 5) Histopathology showed a neoplasm comprising of mature adipocytes arranged in lobules with intervening fibrous septal and thin proliferating capillaries and no evidence of malignancy. (Fig. 6)

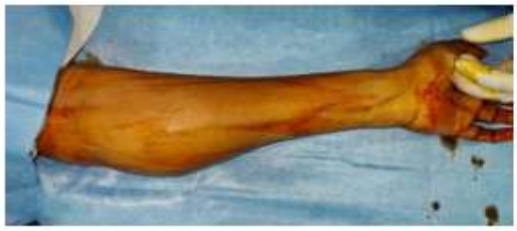

Fig. 1 – Clinical photograph of the lesion

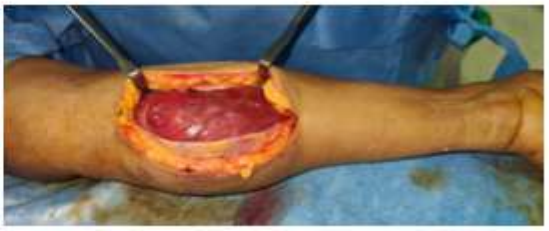

Fig. 2 – Picture showing incision and splayed flexor muscle of forearm

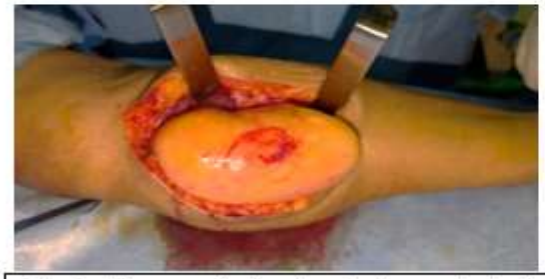

Fig. 3 – Photograph showing the lipoma the lesion

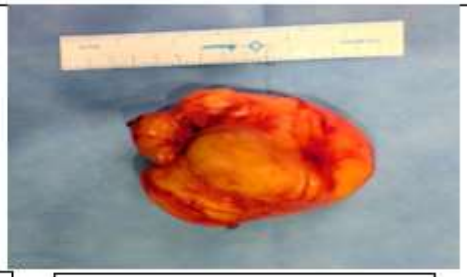

Fig. 4 – Specimen after excision

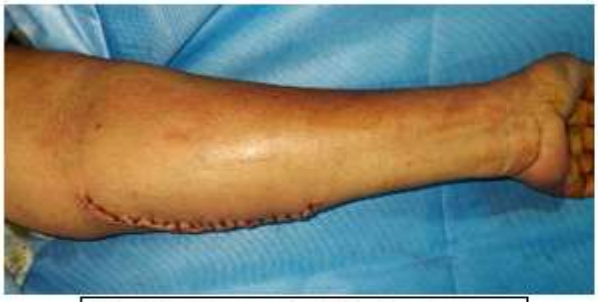

Fig. 5 – Photograph following closure

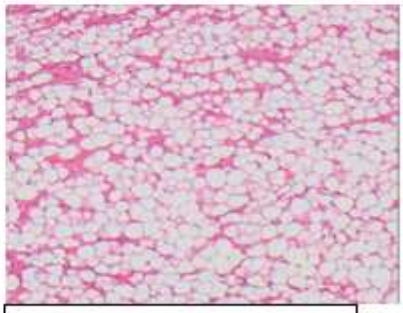

Fig. 6 – Microphotograph of the histopathology showing features suggestive of lipoma

DISCUSSION

Mainly made up of mature adipose cells, lipomas are among the most prevalent benign mesenchymal tumors in the body. Lipomas are referred to as universal or ubiquitous tumors since they can occur in nearly every organ of the body. (1) Because of the presence of fibrous septae, they may be called fibrolipomas. Though they can also be interosseous, visceral, intramural, subfascial, or intermuscular, they are typically found on the trunk or extremities. Lipomas can develop on their own or as a symptom of a syndrome like Madelung's illness, Gardner's syndrome, adiposis dolorosa, or inherited multiple lipomatosis. (5) Giant lipomas are defined as lipomas larger than 5 cm in diameter. The majority of gigantic lipomas in the upper extremities are slow-growing tumors that manifest as symptomatic masses, frequently accompanied by compression-related symptoms. Without any particular symptoms, the majority of lipomas manifest as tiny subcutaneous swellings. Rarely, giant lipomas can appear in the trunk, shoulder, or thigh. Due primarily to their size, these enormous lipomas can cause symptoms such as compartment syndrome, pain from the stretching or compression of nearby nerves, limited movement of the affected joint, social embarrassment, or difficulty dressing. (3) Blunt trauma has been proposed as a potential cause of adipose tissue proliferation by rupturing the fibrous septa and anchoring connections between the epidermis and deep fascia. (9) Chromosome 12 rearrangements are frequently observed in solitary lipomas, but not in spindle cell, multiple lipoma, or pleomorphic lipomas. Ultrasonography works well for initial research, but MRI is better, particularly for pre-operative planning. (10) Only a histological study can provide a conclusive diagnosis of gigantic lipoma. Benign lipomas have well-established features on magnetic resonance imaging, computed tomography, and ultrasound. Technetium-99 diethylenetriamine pentaacetic acid scanning has also been used to confirm the diagnosis. (4,5,7) Because of their size, propensity to recur, and potential for malignant change, surgery is the preferred treatment for these enormous swellings. (11) If malignant potential can be ruled out, liposuction is an additional therapy option for these tumors. (12) Constant pressure on

the surrounding tissue creates a well-defined pseudocapsule, which facilitates the easy dissection and enucleation of these masses. In order to prevent hematomas or seromas from forming, dead space that is formed after a big lipoma is dissected is typically drained using a suction drain. Removal is more technically difficult when it occurs intramuscularly, and in order to guarantee proper margins, some surrounding muscle may need to be removed. Local lipoma recurrence is less than 5%, however it rises when intramuscular lipomas infiltrate. (2,13–15) Furthermore, it might be challenging to separate intramuscular lipoma from well-differentiated liposarcoma due to similarities in its characteristics. Because of the possibility of local recurrence, several oncology centers classify big, deep lipomas as low-grade liposarcoma. (16,17) Liposarcomas make up between 7% to 27% of all soft tissue sarcomas, making them the most prevalent type. (18) They usually appear between the ages of four and six. Although they can appear anywhere there is fat, they are most frequently found in intramuscular fatty tissue and are made up of lipoblasts. Recent onset rapid growth, size greater than 5 cm, and intramuscular placement have all been identified as risk factors for cancer. (18–20) Increased vascularity in the lesion's septal structures makes it simple to distinguish lipomas from well-differentiated liposarcomas using gadolinium-enhanced MRI. (21) The next step should be surgical removal, perhaps with chemotherapy and radiation therapy in between.

CONCLUSION

Current guidelines suggest that lipomas of size greater than 10 cm in one dimension or weight heavier than 1000 grams is defined as giant lipoma. All lipomas in the upper extremities measuring larger than 5 cm in a single dimension should be surgically removed due to malignant potential. Imaging should always be done before excision to rule out malignant transformation. Excision with 1 cm margin should be done to avoid local recurrence. Diagnosis of giant lipoma is made on histopathology report after excision after ruling out malignancy. Any lipomatous mass may recur with incomplete excision, and liposarcomas may require a larger repeat excision, chemotherapy or radiation.

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