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Case Report

GIANT LIPOMA OF THIGH- A RARE CASE REPORT AND REVIEW OF LITERATURE

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A B S T R A C T

A lipoma is a benign fatty tissue tumor which can occur in any part of the body and presents as a painless slowly growing mass. It is very frequent and can affect any part of the body rich in adipose tissue and it usually varies in size. We are reporting a case of 54-year-old female with a giant lipoma involving her left thigh region.

INTRODUCTION

Lipomas are one of the most common benign mesenchymal tumors in the body and are composed of mature adipose cells. A lipoma can be found in almost all the organs [1] of the body where fat normally exists, which is why it is also known as a ubiquitous tumor or universal tumor [2]. While small superficial lipomas constitute simple surgical conditions, large and deep lipomas represent a real diagnostic and therapeutic challenge [3]. Presentation is usually as a painless subcutaneous swelling. Other presentations depend on the site and size of the lesion and on local pressure effects. Giant lipomas are rare tumors that may cause mechanical dysfunction, pain and altered sensibility due to their size and the resulting compression of neighbouring structures. Differentiation between lipoma and liposarcoma of "low grade" malignancy represents an important diagnostic problem, and valuable help in the differential diagnosis is provided by ultrasonography (US), computed tomography (CT), magnetic resonance imaging (MRI), biopsy and/or modern immunohistochemistry.

Case Report

A 54-year-old female patient presented with complaints of swelling in the anterior aspect of her left thigh and pain in her left lower limb for the past one and half years. She also developed difficulty in standing and walking due to the swelling for past one year. Examination revealed a large mass in her left thigh, extending from the base of the inguinal ligament superiorly and upto the upper border of the patella inferiorly, measuring approximately 30.5 x 14.5 cm. The swelling was nontender, soft in consistency, noncompressible and with well-defined margins. The swelling was not fixed to the skin (Fig 1A-1B).

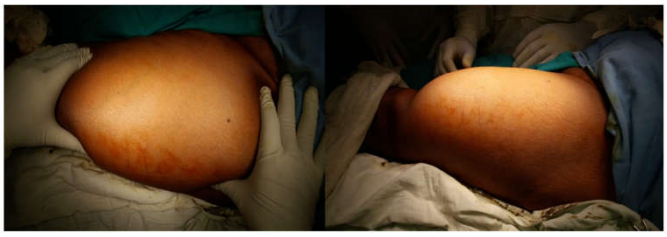

Fig 1 A 1B- Preoperative picture of giant lipoma of left thigh

Fine needle aspiration cytology (FNAC) of the swelling revealed mature fat cells suggestive of a lipoma. An X-ray of left thigh revealed a soft tissue swelling with normal bone. A magnetic resonance imaging (MRI) scan revealed a large well-defined predominantly fat intensity lesion in the intermuscular plane in anterior compartment of left thigh with a small area of soft tissue component showing mild heterogenous enhancement with multiple thin enhancing septa within the lesion suggestive of lipomatous lesion (Fig 2). The MRI delineated the extent of the tumor and revealed its relation to the adjacent structures. Accordingly, a differential diagnosis of a "giant lipoma" and "giant liposarcoma" (atypical lipomatous lesion well differentiated) was kept in our case. There was no bony involvement and also the neurovascular bundle were intact. Thus, it helped in planning the incision and operation.

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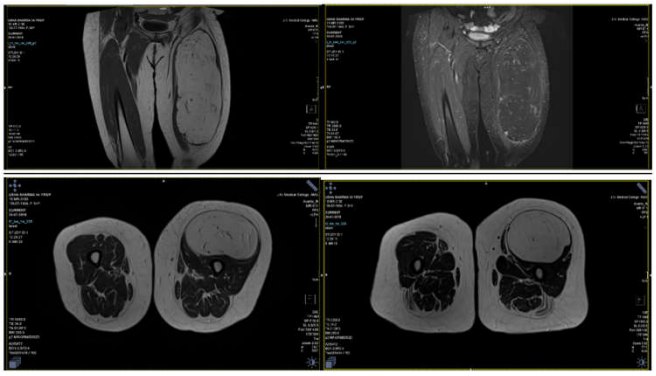

Fig 2 Different MRI pictures of giant lipoma of left thigh.

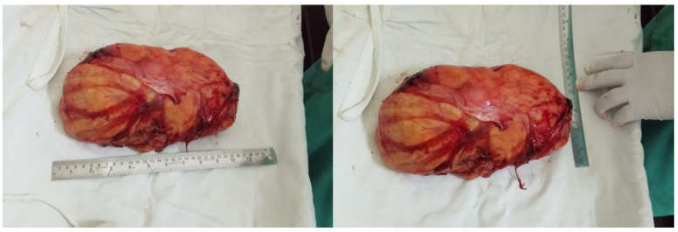

Fig 2A, 2B- Excised mass

Operation

The patient was positioned in supine position under spinal anesthesia. After adequate preparation and draping, a longitudinal incision was made over the swelling, extending from the upper border to the lower extent of the tumor. Skin and fascia were separated and careful dissection was carried out. The capsule of the swelling was identified and separated from the surrounding fascia and muscle fibers. Blood vessels entering the capsule of the lipoma carefully separated and ligated at the apex of the swelling. The swelling was dissected out and excised en masse. The loss of blood during the operation was about 150 ml. The nerve bundle and vascular structures were preserved. Multiple biopsies were taken from the muscle and fascia which enclosed the swelling and were sent for histopathological examination. After that, a suction drain was placed in the wound and the wound was closed in layers.

The tumor measured 26.2x13 cm (Fig 2A-2B) and weighed 2.66 kgs.

The histopathological report of the swelling showed sheets of mature adipocytes with no evidence of de-differentiation or myxoid changes. There was also no evidence of atypical mitosis or necrosis. There was also no lympho vascular invasion and the margins of the surrounding muscle appeared to be free from the tumor.

The postoperative period was uneventful and patient was discharged in satisfactory condition on the 5th post-op day after removal of the drain.

DISCUSSION

A solitary lipoma is the most frequent soft tissue tumor, often appearing between 40 and 60 years of age [4]. Its incidence is reported to be 2.1 per 1000 population [5]. Clinically, lipomas appear as well delineated asymptomatic lesions [6] and in some cases they can reach a considerable size [7]. For a lipoma to be referred to as "giant," it should be at least 10 cm in diameter or weigh a minimum of 1000 grams, [4,8] as was the case in our patient. Its volume also plays a key role in many problems of the social life of the patient (keeping the lipoma discreet in clothing, difficulties in dressing) and causes multiple health problems such as pain, difficulties in sleep, difficulties in standing and walking, compression of nerves or vital structures, infections, etc [8].

Giant lipomas are occasional mesenchymal tumors that are usually located in deep body plane [9]. The mechanism for the uncontrolled growth of such lipomas remains unclear [5]. However, it has been suggested that after a blunt trauma, rupture of the fibrous septa which prevents fat migration, accompanied by tears in the anchorage between the skin and the deep fascia may result in proliferation of adipose tissue [10]. The aetiology of the lipomas are unclear and have been known to be both sporadic and inherited [11,12].

When located close to vital structures, giant lipomas may cause functional limitations on account of their excessive size and weight [13,14] or lymphedema, pain or nerve compression syndrome [9,15].

Phalen et al [9] found peripheral nerve compression by lipomas to be rare. Thus, it is clear that the mass effect of a lipoma is due not so much to its size as to its location.

Malignant lesions such as high grade liposarcomas show no plane of cleavage between the mass and adjacent muscle layers and they present infiltrative growth and tumor digitations [16,17]. Malignant transformation of a lipoma into a liposarcoma is rare [18] as is the sarcomatous transformation of giant lipomas [9,19]. Some reports have suggested that large tumors (>10 cm) are more likely to contain sarcomas, which makes a preoperative biopsy advisable in such cases[20,21]. The intramuscular location of a lipoma is also considered to be a risk factor for malignancy [20,21]. It is important to differentiate giant lipomas from liposarcomas, malignant fibrous histiocytomas and other benign soft-tissue lesions, such as old muscle rupture, epidermoid cysts, angiolipomas, deep hemangiomas and lipoblastomatosis [5]. Indeed, the main concern in the diagnosis of giant lipomas should be the exclusion of malignancy [22]. It has been suggested that a liposarcoma should be considered when a fatty subcutaneous tumor is more than 10 cm in diameter and has grown rapidly in recent months [23,24].

Liposuction for the treatment of giant lipomas has also been reported [11,25]. However, as differential diagnosis between lipomas and liposarcomas is exceedingly difficult on the basis of clinical findings alone [26], liposuction was not recommended in our situation as there was likelihood of recurrence after liposuction.

As giant lipomas usually have a well-defined pseudo-capsule[9,14,27], dissection of these benign neoplasms is relatively straightforward. So, surgical excision is the treatment of choice [14]. In our case, the primary concerns of the patient were the discomfort and dragging pain and the apprehension of malignancy, which were relieved completely after surgery. The preoperative findings and histopathological features confirmed the diagnosis of benign giant lipoma.

These tumors have a tendency for recurrence, as shown by Chung and Enzinger in their study, in which the recurrence rate was 14% and was attributed to incomplete removal of the tumour [28]. So, the patients should be kept under a regular follow up.

CONCLUSION

The presentation of a giant lipoma of long duration may resemble a malignant lesion. Surgical excision is the treatment of choice. Excision is usually done in cases of non-infiltrating, well defined lipomas with a pseudo- capsule. It is done to alleviate the symptoms and the apprehension of malignancy and provides tissue diagnosis.

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