Case Report

Giant Lipomas. A Report of Two Cases

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Abstract

Lipomas can be found in any region of the body and are the most common benign tumors of the adipose tissue. Giant lipomas have been reported to be any lipoma more than 10 cm in size along its widest diameter or more than 10 g in weight. Here we present two case reports of otherwise healthy patients who presented with unusually large tumors at different points in the same facility. Hence, it was needed to report our findings: A 27-year-old man with a 3-year history of a huge right gluteal swelling; A 56-year-old man with a 30-year history of a right lower limb mass. Physical examination and relevant radiological investigations were conducted to characterize and ascertain the extent of the two masses. They were excised surgically and underwent histology to confirm diagnosis. Despite the availability of improved health services, giant lipomas still exist.

Keywords: Giant lipoma, liposarcoma, mesenchymal tumours

Introduction

Lipomas are among the most common mesenchymal tumors in humans occurring more frequently in adults aged between 40 and 60 years.[1] They could be found in almost all organs of the body in which fat exists, hence, the term "ubiquitous or universal tumor."[2]

Most lipomas are typically small, slow growing tumors weighing only a few grams,[3] not painful to touch, and do not evolve into malignant tumors.[4]

Serpell JW *et al.* defined the giant lipomas lesions that are over 10 cm in maximum diameter or weigh over 1000 g.[5]

Lipomas may be solitary or multiple. Solitary lipomas occurring in equal frequency among males and females with a female preponderance for multiple lipomas.[6,7]

Murphey *et al.* found that the majority of lipomas were located in the trunk, followed by the head and neck region, and lower extremities,[8] whereas Munk *et al.* noted a prevalence of lipomas in the upper back, neck, proximal extremities (especially the shoulder), and abdomen.[9]

Lipomas may either be superficial or deep.[10] The former being more common and further classified as encapsulated or nonencapsulated.[11] The deep lipomas are usually larger, displace surrounding tissues, and are either interosseous, visceral, intermuscular, or intramuscular.[10]

Most lipomas remain asymptomatic, especially deep lipomas, and thus may attain considerable sizes. Depending on anatomic location, lipomas may hinder movement, get inflamed, cause lymphedema, pain, and compression syndrome.[12]

Case Presentation

Case 1: A 27-year-old male who presented with a 3-year history of a right gluteal swelling, which was initially slow growing but had shown a sustained and progressive increase in size in the preceding 6 months before presentation.

There was a associated history of a fall on the same side in a motorbike road traffic accident about a year before the onset of the swelling.

A month prior to presentation, the apex of the mass started darkening and subsequently ulcerated. There was no history of pain, no affectation of gait, no history of similar lesions, nor a family history. However, the presence of the huge mass constituted a nuisance to him, and he wanted it removed.

Physical examination revealed a firm mass on the right gluteal region, nontender, measuring about 20 × 14 cm, with

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a hyperpigmented and ulcerated apex which was attached to skin at this apex, but not at its base [Figure 1].

Laboratory investigations and lipid profile were normal. Radiographs to determine the extent of the lesion revealed no osseous changes or bony involvement. An ultrasound done revealed an oval echogenic mass with lipoma-like features.

A preoperative provisional diagnosis of a liposarcoma to rule out lipoma was made.

Wide excision of the mass under regional anesthesia was done. Figure 2 is the excised lipoma. Wound closure was done secondarily and postoperative recovery was uneventful.

Case 2: A 56-year-old male with a 30-year history of a slow growing right lower limb mass.

There was no history of similar masses, no history of underlying systemic disease, no specific predisposing factors, and no family history of similar lesions. He had no gait abnormalities or pain, and no history of rapid increase in size of the mass.

Physical examination revealed a 22 × 17-cm mass on the anterolateral aspect of his right thigh with distinct edge and mildly thickened skin over its apex. The mass was not attached to the skin or underlying muscles. It was also lobulated, firm to touch with a smooth surface [Figure 3].

Laboratory investigation and radiological findings were unremarkable. Surgical excision was done, and the mass measured 25 × 16 cm. No infections, hematomas, or neurological complications were detected postoperatively. Figure 4 shows the wound after excision.

The two samples were histologically analyzed and definitive diagnoses of lipoma made.

Discussion

Lipomas are the most common benign tumors of the adipose tissue. They are well-differentiated neoplasms, consisting of adult adipocytes surrounded by a fibrous capsule.[13]

They are believed to arise from mesenchymal primordial fatty tissue and are thus, not of adult fat cell origin.

They tend to increase in size with increasing weight, but weight loss does not decrease their size. Thus, it appears they are not available for metabolism even in starvation.[14]

Giant lipomas have been reported in literature as measuring up to 10 cm and weighting up to 1000 g.[5] The largest lipoma recorded in English literature was reported in 1894 weighing 22.7 kg [Table 1].

The two cases in this report weighed, 6850 and 5100 g.

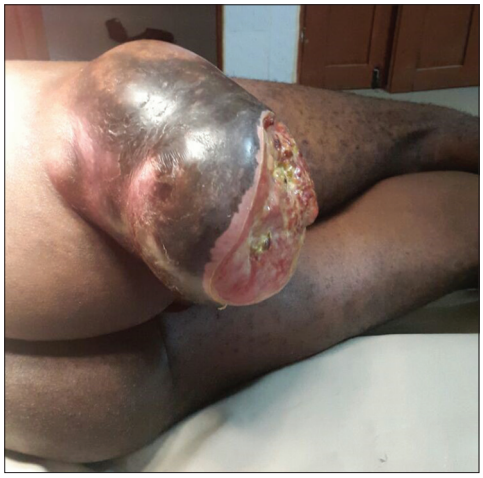

Figure 1: The huge ulcerated lipoma at the patients buttocks

Figure 2: The excised lipoma

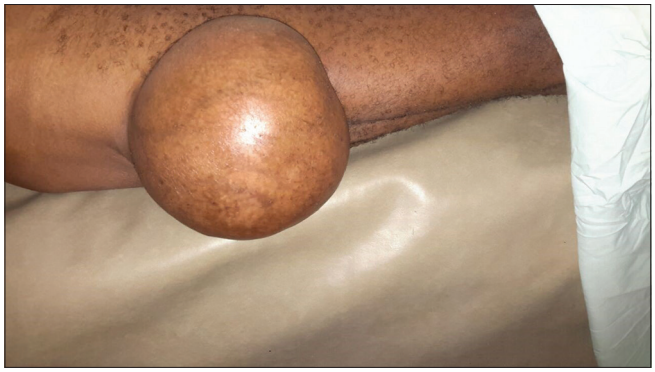

Figure 3: The huge lipoma in the patient's thigh

Figure 4: The wound after excision

Table 1: Recorded cases of Giant Lipomas and their locations in the body

Author	Size (cm)	Weight (g)	Location
Brandler[14]	-	22,700	Scapular
Martin[15]	-	12,500	Neck and upper back
Bissel[16]	-	9000	Upper back
Silistre[17]	-	6450	Posterior cervical

The exact etiology of lipomas is unknown.

Subcutaneous lipomas are associated with hypercholesterolemia, obesity, trauma,[18] familial tendency, and chromosomal abnormalities.[19]

Trauma appears to be an important etiologic factor in the pathogenesis of lipomas.[20]

It has been proposed that rupture of the fibrous septa after trauma alongside tears of the anchorage may result in proliferation of adipose tissue.[21]

It has also been presumed that local inflammation secondary to trauma may induce differentiation of preadipocytes and disrupt the normal regulation of adipose tissue.[20,22]

We did not detect hypercholesterolemia, but there was history of trauma in one of the cases. None of our patients were obese.

Giant lipomas are primarily a cosmetic problem.[23]

Their size and weight may cause limitations in movement and demonstrate signs of compression of adjacent structures. A lipoma adjoining the motor nerve of an extremity may cause neuromuscular dysfunction.[24,25]

In our index cases, there was no compression syndrome, varying degrees of functional limitation such as discomfort and ugly sight constituted a major esthetic burden.

The main challenge in the diagnosis of a giant lipoma is the possibility of it being a liposarcoma.[22]

This is further complicated by the fact that lipomas share certain similarities with well-differentiated liposarcomas. They present as palpable bulks with a variable consistency and are generally not painful.[26]

Clinical criteria that would make a liposarcoma more likely include a size more than 5 cm, deep to deep fascia, irregularity, pain, and thickened septa.[27] The intermuscular location of a lipoma is also a risk factor for malignancy. However, the transformation of a large lipoma to a liposarcoma is rare.[28]

Diagnostic imaging plays an important role in assessing soft tissue masses. Radiographs may reveal osseous changes, and cartilaginous or osseous matrix within the masses.[29] Ultrasonography is usually the first diagnostic procedure due to its low cost and availability.[30] Ultrasonography of the index cases showed them to likely be lipomatous growths.

Kransdorf *et al*. noted that distinguishing between a well-differentiated liposarcoma and lipoma is challenging. (MRI) Magnetic Resonance Imaging and Computerized Tomography (CT) depict well-differentiated liposarcomas as having thickened septae (>2-mm thick) and nodular or global areas of nonadipose tissue within the lesion.[31]

Immunostaining is scarcely helpful for the diagnosis of liposarcoma. The FISH is a fundamental tool for the diagnosis of liposarcoma due to the amplification of *MDM-2* and *CDK4* genes located in the chromosomes. These genes are not amplifies in lipomas or a majority of soft tissue sarcomas.[32]

Final diagnosis rests on histopathologic evaluation. The presence of lipoblast or atypical adiopocytes would raise the concern for liposarcoma. Some reports have suggested that large tumors (>10 cm) are more likely to contain sarcomas, making a preoperative biopsy advisable in such cases.[5]

Dercum's disease or adiposis dolorosa is a rare condition of unknown etiology characterized by multiple, often painful, lipomas and is seen more in obese women.[33] Its diagnosis is often delayed and rests on ultrasound, and above all magnetic resonance imaging.

Ultrasound depicts a markedly hyperechoic mass, whereas MRI shows nodular increased fluid signals (bluish-like appearance of subcutaneous fat) with no evidence of edema or inflammation.[34] Although this conditionis rare, one of the patients had a history of pain and associated obesity, but only a solitary mass.

An even rarer condition, Madelung's disease is seen more commonly in adult alcoholic males. It is characterized by an unusual massive accumulation of fat deposits located symmetrically around the shoulders, neck, upper arms, and trunk.[35]

However, there was no reason to suspect these conditions among our patients as none satisfied the criteria.

Surgical excision was employed in our two index cases as it enabled removal of the entire mass relieving these patients of the cosmetic burden.

However, lipomas can possibly be removed by liposuction.[22,36]

This has the advantage of leaving very small scars.

Certain drawbacks remain though, because liposuction is limited by tissue density, localization of the lesion, and the impossibility of accurately removing the fibrous capsule, thus predisposing the patient to recurrences.

Further nonnegligible complications include nerve damage, hematomas, and blood-vessel rupture.[26]

Conversely, surgical excision enables removal of the fibrous capsule and further histologic evaluation.

Conclusion

We have thus presented three cases of unusually large lipomas. In resource-limited countries where delay in presentation is the rule, these lesions may attain huge sizes but may still simply be lipomas.

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Conflict of interest
There are no conflict of interest.

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