EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 7
Issue: 8
133-136
Year: 2020

AN UNCOMMON CASE OF GIANT THIGH LIPOMA: DIAGNOSTIC AND TECHNICAL CONSIDERATIONS IN A LOW RESOURCE SETTING WITH REVIEW OF LITERATURE

BI. Omolabake*[1], BA. Eke[1], BA. Ojo[2], RA. Vhriterhire[2], ME. Efu[3], LJ. Tsegha[4] and RD. Inienger[4]

[1]Department of Surgery, Benue State University, Makurdi, Nigeria.
[2]Department of Anatomical Pathology, Benue State University, Makurdi, Nigeria.
[3]Department of Anaesthesia, Benue State University, Makurdi, Nigeria.
[4]Department of Surgery, Benue State University Teaching Hospital, Makurdi, Nigeria.

***Corresponding Author: BI. Omolabake**
Department of Surgery, Benue State University, Makurdi, Nigeria.

Article Received on 11/06/2020 **Article Revised on 01/07/2020** **Article Accepted on 22/07/2020**

ABSTRACT
Giant lipomas are rare and can pose diagnostic and therapeutic challenges in their management. A case of giant thigh lipoma in a 57 year old woman is presented, with a discussion of challenges of management in a low resource setting. These tumours behave differently from typical lipomas and mimic malignancy, which should be considered and excluded. Rarely, malignant transformation of a giant lipoma may occur and long term follow-up is necessary because of the risk of recurrence.

KEYWORDS: Giant lipoma, thigh lipoma, low-resource.

INTRODUCTION
Lipomas are benign fatty tumours and are the commonest tumour of mesenchymal origin.[1] They are ubiquitous in nature and can occur anywhere in the body.[1] A giant lipoma, defined as a lipoma which weighs >1kg or measures >10 cm in one of its dimensions.[2,3], is an uncommon entity[4,5] and presents peculiar challenges to the surgeon. The aim of this paper is to present the index case and highlight some of these challenges particularly in a low-resource setting.

CASE REPORT
The index case is a 57 year old woman presenting with a progressive swelling of her left thigh of 7 months duration. Swelling was initially painless, but had become painful in the last month prior to presentation, with discomfort during walking. There was no preceding history of trauma. She had received prior care in an alternative (traditional) medical practice but with no improvement.

Examination finding revealed a hemispherical swelling in the anterior aspect of the left thigh extending almost its entire length. Swelling measured 25×20×6 cm, had a lobulated surface, regular outline and firm consistency. There was slight tenderness and differential warmth. It was mobile vertically and horizontally, free from the overlying skin but attached to the underlying quadriceps muscle. There was no accompanying neurovascular compromise or lymph node enlargement. The contralateral limb was grossly normal.

An MRI was requested but was not available. An ultrasound scan was done instead. This reported a huge, fairly homogeneous mass located in the quadriceps muscle with a poorly defined posterior margin. Doppler interrogation of the mass showed poor blood supply. An X-ray of the left thigh excluded significant calcification of the mass and bony involvement. A core needle biopsy was done and histopathology report was consistent with a lipoma. Patient was reactive to Hepatitis C Virus (HCV). Other preoperative tests including lipid profile were essentially normal.

An excision of the mass was done under sub-arachnoid block. Approach was via an elliptical incision placed in the summit of the mass and longitudinally disposed. The finding was of a huge well-encapsulated sub-fascial fatty mass located in the anterior compartment of the left thigh. It extended from the inguinal crease to just above the patella. There was attachment to, but no infiltration of the quadriceps femoris muscle which appeared atrophic and displaced. A closed active drain was brought out of the wound which was closed in layers and compressive dressing applied. The postoperative course was uneventful and patient was discharged after 5 days, with the drain removed a day before discharge. The biopsy specimen was preserved in 10% formalin solution and sent for histological evaluation. The specimen measured

28×20×8 cm and weighed 2.1 kg. The specimen was encapsulated, yellowish and soft. The specimen was processed routinely and sections made from the paraffin tissue blocks were stained with haematoxylin and eosin. Histology showed a benign mesenchymal tumour circumscribed by a dense fibrous capsule. It consisted of sheets of mature adipocytes characterised by clear cytoplasms and eccentrically displaced nuclei. Thin fibrous septa separated these cells into lobules. There were no foci of inflammation, necrosis or microcysts. The final diagnosis of a lipoma was consistent with that of needle core biopsy.

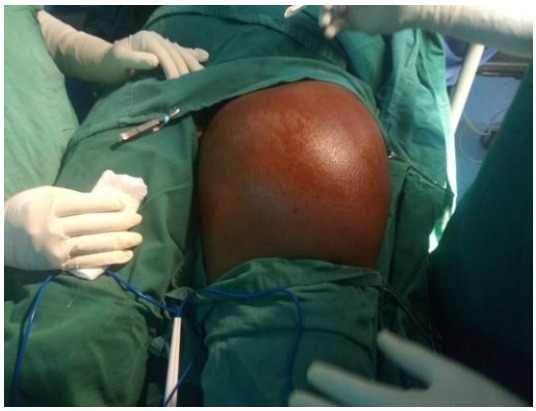

Figure 1: Pre-operative photograph showing a hemispherical swelling in the anterior aspect of the left thigh.

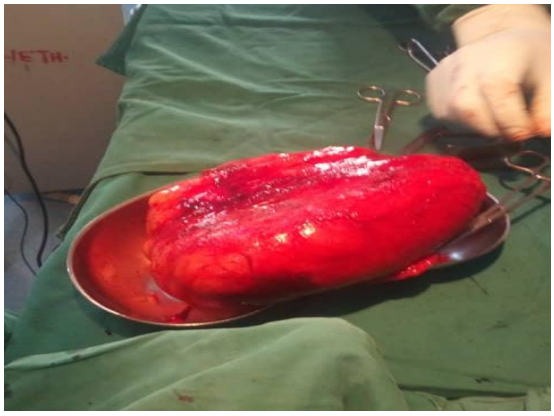

Figure 2: Excised specimen consisting of a 28x20x8 cm well encapsulated sub-fascial fatty mass weighing 2.1kg

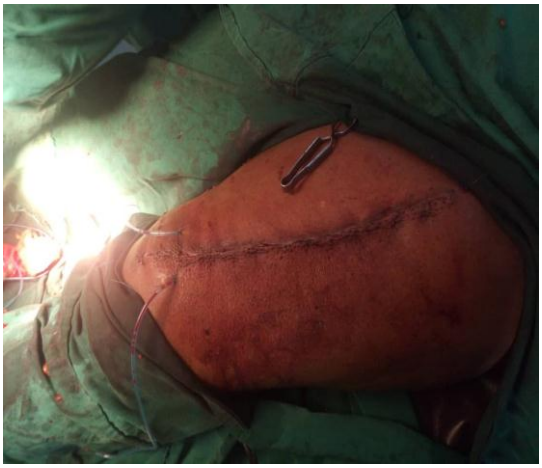

Figure 3: Appearance of wound following excision with drain coming out of wound.

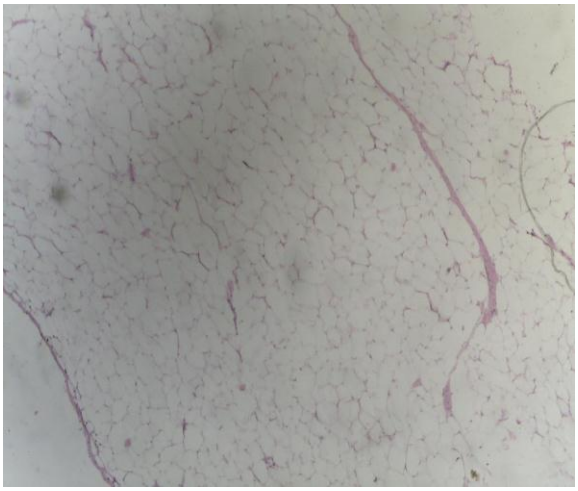

Figure 4: Lipoma histology shows sheets of adipocytes separated into lobules by thin fibrous septa. H & E x10 objective magnification.

DISCUSSION

Lipomas are the most common mesenchymal tumours[6] in humans but the occurrence of a giant lipoma is rare and presents unique challenges in management, especially in low resource settings.

Diagnostic considerations: Benign lipomas of the thigh commonly occur between the 4th and 6th decade of life[7,8] as noted in this case. There are important differences between small subcutaneous lipomas and giant lipomas, as well as similarities between giant lipomas and sarcomas. These overlap in clinical features often cause diagnostic dilemma. The most prominent complaint with giant lipomas is cosmetic embarrassment. However, most giant lipomas will in addition, cause symptoms either from the bulk of the lesion, or from compression of adjacent neurovascular structures. In contrast to typical lipomas, giant lipomas are firm in consistency and do not exhibit slipping sign. Unusual features like sudden increase in size, skin ulceration, dilated subcutaneous blood vessels and recurrent bleeding which are all associated with malignant lesions have been described in giant lipomas.[6,7] Delayed presentation is common in low resource settings, and this may give time for development of a giant lipoma.[9] The index case had a 7 year history but others have reported histories as long as 30 years.[9,10] This delay is frequently occasioned by prior visits to alternative medical practitioners with possible complications e.g. inflammation[7,9] hence further varying the presentation.

The most important consideration in evaluation of a giant lipoma is the possibility of the lesion being a liposarcoma.[9] In considering this, Rydholm et al[11] suggested that for solitary lipomas, size > 5cm, location in the thigh and occurrence in a sub-fascial location all independently increased the risk of the lesion being a sarcoma. In addition, large lipomas are more likely to contain foci of sarcoma.[10] Malignancy should therefore, always be considered and excluded.[4,12] This is best done preoperatively by core needle biopsy. A Fine Needle Aspiration Cytology (FNAC) may be useful in smaller lipomas, but was not employed in this case because of concerns about sampling errors as have been previously reported in the literature.[13,14] Malignant change may also occur in long standing giant lipomas.[13]

Imaging is usually required for diagnosis and surgical planning, and a cross-sectional imaging like MRI is the modality of choice. This is often done before biopsy to minimise formation of artefacts which may interfere with interpretation. However, since MRI is not available in most hospitals in Nigeria[15], a number of centres rely on a thorough physical examination and ultrasonography. Physical examination alone is known to be inaccurate in differentiating a giant lipoma from a sarcoma[11], and MRI is more sensitive, though it may still be impossible to differentiate a lipoma from a well-differentiated liposarcoma.[14] The absence of high quality cross-sectional imaging presents a peculiar challenge in managing these tumours in resource-poor settings. Radionuclide imaging using technetium-99 labelled diethylene triamine penta-acetic acid (Tc-99 DTPA) is also useful in differentiating lipoma from liposarcoma.[7] but like MRI, non-availability in our setting is a challenge.[7]

Technical considerations: Open surgical excision, suction-assisted lipectomy and liposuction are the common modalities for managing lipomas.[1,2,8] Despite improved cosmetic outcomes, the latter is often not feasible for giant lipomas which can attain remarkably large sizes. The patient thus could not have benefited from the cosmetically superior liposuction procedure. An ellipse of skin is removed with the mass and this has to be done with precision to ensure that the resulting flap is just adequate to achieve primary wound closure. Use of skin markers may facilitate this. A thorough understanding of regional anatomy is essential to ensure safe dissection around the major neurovascular structures in the thigh. A marginal excision is adequate for benign lesions but some authors recommend wide local excision for a giant lipoma.[13] In any case, complete excision is necessary to reduce recurrence.[8] In the index case, complete excision with an intact capsule was achieved. The size of the resulting dead-space will vary, but this should be closed to prevent haematoma and wound infection. In the event of muscle invasion, part of the muscle should be included in the excision specimen.[12] Haemostasis should be meticulous and cross-matched blood should be available. Following surgery, closed active drain should be brought out of the wound and compression dressings placed. This will ensure drainage of seroma/blood resulting from extensive dissection necessitated by the large tumour size and deep location. The index case had a size of 25×20cm with literature reporting sizes up to 58×37cm.[7] To ensure adequate preservation of the specimen, unusually big specimen containers are required, with adequate volume of tissue preservative. Of note is that there is no correlation between the size and weight of a giant lipoma due to variations in fibrous tissue content.[16]

Depending on the degree of muscle atrophy from mass effect of the tumour, patient may experience motor difficulties in the lower limb and may require to be referred for physiotherapy.[17] Electromyography may then be indicated to assess functional recovery of the limb.[12] The index patient didn't appear to have any functional deficit post-operatively.

There is a risk of recurrence especially if there was undetected foci of malignant transformation.[8,14] Long term follow-up is therefore necessary.[7,14] a requirement which is difficult in our setup due to poor health-seeking behaviour.

CONCLUSION

Giant lipomas are rare tumours which share some features with typical lipomas and others with liposarcomas. This creates diagnostic difficulties which should be resolved pre-operatively for optimal management. Surgical excision of these lesions may be challenging. Both diagnostic and therapeutic challenges appear to be further amplified in a low-resource setup. Unlike typical lipomas, there is a risk of recurrence which mandates long-term follow-up.

CONSENT: Consent was obtained from the patient under condition of anonymity, to write up this case, including use of clinical and operative photograph.

REFERENCES

1. Zaroo M, Bashir S, Mohsin M, Baba P, Farooq S, Zargar H. Giant lipoma: A case report. J Islam Med Assoc North Am, 2011; 43(2): 77–9.
2. Gungor M, Sir E, Aksoy A, Agirbas S. Giant lipoma extending into two thigh canals: A case report. Acta Orthop Traumatol Turc, 2017; 51(3): 270–2.
3. Ólafsdóttir B, Fróðadóttir H, Rúnarsdóttir R, Valsdóttir E. Abdominal giant lipoma. Laeknabladid, 2018; 104(11): 499–501.
4. Garrido-Gmez J, Vizoso-Prez ML, Linares-Palomino JP, Arrabal-Polo MA, Crdenas-Grande E. Intermittent claudication caused by a giant atypical lipoma of the thigh. J Vasc Surg, 2012; 56(3): 808–11.
5. Pakanati R, Gogineni R, Ede N. Recurrent giant intermuscular lipoma of thigh. J Dr NTR Univ Heal Sci, 2019; 8(3): 219–21.

6. Sanchez MR, Golomb FM, Moy JA, Potozkin JR. Giant lipoma: Case report and review of the literature. J Am Acad Dermatol, 1993; 28(2): 266–8.
7. Akinkunmi M, Balogun B, Awosanya G, Fadeyibi I, Benebo A, Soyemi S, et al. Giant fibrolipoma of the thigh in a Nigerian woman: A case report. Internet J Radiol, 2012; 12(2): 1–8.
8. Davis C, Gruhn JG. Giant Lipoma of the thigh. Arch Surg, 1967; 95(1): 151–6.
9. Emegoakor C, Echezona C, Onwukamuche M, Nzeakor H. Giant lipomas. A report of two cases. Niger J Gen Pract, 2017; 15(2): 46–9.
10. Chatterjee D, Bhattacharya D. Giant infiltrating lipoma of the thigh: a rare case report and literature review. Int J Res Med Sci, 2013; 1(4): 581–3.
11. Rydholm A, Berg NO. Size, site and clinical incidence of lipoma: Factors in the differential diagnosis of lipoma and sarcoma. Acta Orthop, 1983; 54(6): 929–34.
12. Mordjikian E, Leao E. Giant lipoma of the thigh: A case report. Rev Soc Bras Cir Plast, 2001; 16(3): 17–8.
13. Waqar S, Abdullah M, Khan S, Malik Z, Zahid M. Giant lipoma of the thigh. Inst Med Sci, 2014; 10(1): 57–9.
14. Pires J, Reis J, Valença-Filipe R. Giant atypical lipoma of the thigh. Dermatologic Surg, 2014; 40(2): 213–4.
15. Ogbole GI, Adeyomoye AO, Badu-Peprah A, Mensah Y, Nzeh DA. Survey of magnetic resonance imaging availability in West Africa. Pan Afr Med J, 2018; 30(240): 1–5.
16. Terzioglu A, Tuncali D, Yuksel A, Bingul F, Aslan G. Giant Lipomas: A Series of 12 consecutive cases and a giant liposarcoma of the thigh. Dermatologic Surg, 2004; 30(3): 463–7.
17. Faig-Martí J. Anterior approach in a huge lipomatous tumor of the thigh. Case Rep Med, 2014; 2014: 839397.