Giant Fibrolipoma Of The Thigh In A Nigerian Woman: A Case Report

M AKINKUNMI, B BALOGUN, G AWOSANYA, I FADEYIBI, A BENEBO, S SOYEMI, J OBAFUNWA

Citation

Abstract
INTRODUCTION Lipomas are the most common benign mesenchymal tumours and can arise in any location where fat is found. CASE PRESENTATION We report a case of lipoma in the right thigh of a 52-year-old woman of the Yoruba ethnic group in Nigeria which measured 58cm x 37 x 24.5 cm in diameter and weighed 17.5kg. This to the best of our knowledge is the largest lipoma in medical literature. She underwent radiological and other routine investigations and subsequently had wide excision surgery done. Histology confirmed the diagnosis of giant fibrolipoma. CONCLUSION Lipomas can attain enormous sizes if neglected. We support the currently preferred mode of confirming the diagnosis histologically from the surgically excised tumour specimen.

INTRODUCTION
A fibrolipoma is a fibrous neoplasm containing fatty elements. Lipomas are benign mesenchymal neoplasms composed of mature fat cells or adipocytes, and commonly surrounded by a thin fibrous capsule [1]. Lipomas are the most common benign tumours of the mesenchyme. They may be single or multiple, and can arise in any location in which fat is present [2,3]. Lipomas of the extremities are usually painless and are most commonly found in the thighs and shoulders [4]. The patients are usually in their fifth or sixth decade of life [2]. Multiple lipomas are more common in women and many are seen in a familial setting [2]. Lipomas that are at least 10cm wide or weigh a minimum of 1000g are regarded as “giant” lipomas [2]. The medical literature is replete with giant lipomas. In 2004, Terzioglu A et al from Turkey reported a giant lipoma measuring 19 x 9 x 5cm [5]. Fimmano A et al described a giant lipoma of 22 x 12 x 10cm and weighing 2.74kg in 2005 [6]. Silstreli OK described the largest recorded giant lipoma in the medical literature that measured 35 x 25cm with a weight of 12.35kg [7]. We are reporting a case of a giant lipoma in the right thigh of a Nigerian lady.

CASE PRESENTATION
XY, a 52 year old Yoruba woman presented at the Plastic Surgery Out-patient clinic of the Lagos State Teaching Hospital, Ikeja, Lagos, Nigeria, with a four-year history of painless swelling over the right thigh which has progressively increased in size (Figures 1 and 2). There was no other swelling in other parts of the body. She could not walk long distances due to the disproportionate weight of the limb with the mass. There was no preceding history of trauma, fever, or foreign body impaction. A rapid increase in the size of the mass was observed a year before presentation, and this was associated with fatigue. She was treated by the alternative medical practitioners with local herbs before presentation, with no positive response.

Physical examination revealed a middle-aged woman neither pale nor jaundiced. The cardiovascular system was normal. The chest was clinically clear. Musculoskeletal evaluation revealed a huge, globular, well-circumscribed mass involving the anteromedial and posterior aspects of the right thigh, measuring 50 x 40cm, with well-defined edges. There were dilated subcutaneous blood vessels all over the mass. The mass was neither tender nor warm on palpation. It was attached to the underlying muscles but free from the overlying skin. The mass was firm in consistency. The emptying, slipping, and compression signs were all negative. No bruit was heard over the mass. The left limb was grossly normal. A clinical diagnosis of Right Thigh Sarcoma was made. The haematocrit was 33%. Serum electrolytes, urea,
fasting blood glucose, liver function tests, and electrocardiography were normal. The abdominopelvic ultrasound examination revealed no abnormality. Ultrasonography of the right thigh showed a huge, predominantly solid, soft tissue mass with some anechoic areas of cystic necrosis, and highly echogenic areas with posterior acoustic shadowing in keeping with calcification (Figures 3 and 4). Plain radiography of the right thigh confirmed areas of calcification within the mass.

Magnetic Resonance Imaging (MRI) scan (Figures 5, 6, and 7) revealed a sizeable, well-circumscribed, heterogeneous soft tissue mass in the medial compartment of the right thigh. The tumour extended from the level of the inguinal region down to the knee. It was predominantly composed of T2-hyperintense, and T1-hyperintense tissue (with similar signal characteristics of normal subcutaneous fat), which suppressed on STIR pulse sequence. There were small areas of hyperintense signals on STIR within the mass suggestive of haemorrhage. The femur was intact. The hip and knee joints were normal. Artefacts were noted in the lateral aspect of the thigh as a result of the mass making physical contact with the equipment gantry. The complimentary Computerized Tomographic (CT) scan of the thigh (Figures 8, 9, and 10) confirmed the predominant fatty tissue composition of the tumour with attenuation coefficient in the region of minus 89HU. The mass measured 41 x 32cm on the topogram. There was no appreciable contrast enhancement. The radiological diagnosis was a predominantly fatty tumour in keeping with Liposarcoma, and a chest radiograph was requested on account of this finding. The chest radiograph was normal. Excision biopsy was done, and specimen sent for histopathologic investigations. Post-operative recovery was smooth without complications.

The macroscopic examination of the specimen revealed a huge and well encapsulated soft tissue mass measuring 39 x 32 x 21cm, three yellowish soft tissue masses measuring 17 x 9 x 6.5cm, 28.5 x 21 x 9cm, and 13 x 11 x 3cm; and a soft fibrofatty tissue with overlying skin and fascia; measuring 34.5 x 22 x 3cm in diameter. The combined weight of the tissues was 17.5 kg with dimensions of 58 x 37 x 24.5 cm. The cut sections showed homogeneous yellowish soft lobules interspersed with grey-white bands of fibrous tissue. Microscopically, the histological sections showed thinly encapsulated sheets of mature adipocytes arranged in lobules. These adipocytes were seen to be regularly traversed by thick, hyalinized fibrous tissue. Within these bands of fibrous tissues are bundles of nerve fascicles and vesicular channels of varying thickness. Haemosiderin-laden macrophages, lymphocytes, plasma cells, foamy macrophages, as well as multinucleated giant cells were also seen in areas of necrosis. Atrophic epidermis with prominent melanin pigmentation was also noted at the basal layer, beneath which are lobules of mature adipocytes. Neither the adipocytes nor the stroma cells showed atypia. Occasional cyst-like changes were also seen. Additional sections showed irregular, well-differentiated sheets of fibroblastic tissue arranged in fascicles and coursing at various planes. There were bony trabeculae prominently rimmed by osteoblasts. Lipocytes of various sizes were also present. The overall features were compatible with Giant Fibrolipoma (Figures 11 to 15).

She made remarkable progress and was discharged home after four weeks of hospital admission.

**Figure 1**
Figure 1: Giant Lipoma of the right thigh. Photograph of the patient as seen from the back.
**Figure 2**
Figure 2: Giant Lipoma of the right thigh. Photograph of the patient as seen from the front.

**Figure 3**
Figure 3: Giant Lipoma of the right thigh. Ultrasound scanogram showing calcification within the tumour with posterior acoustic shadowing.

**Figure 4**
Figure 4: Giant Lipoma of the right thigh. Ultrasound scanogram showing area of necrosis within the tumour.

**Figure 5**
Figure 5: Giant Lipoma of the right thigh. Coronal SE T1 MR image showing mass with similar signal intensity with subcutaneous fat.
Figure 6
Figure 6: Giant Lipoma of the right thigh. Coronal FSE T2 MR image showing heterogeneous mass.

Figure 7
Figure 7: Giant Lipoma of the right thigh. Coronal STIR MR image showing predominantly hypointense mass with similar signal intensity as subcutaneous fat.

Figure 8
Figure 8: Giant Lipoma of the right thigh. CT topogram showing huge mass with areas of calcification. The femur is intact.

Figure 9
Figure 9: Giant Lipoma of the right thigh. Axial CECT showing areas of calcification but no appreciable contrast enhancement of the tumour.
Figure 10
Figure 10: Giant Lipoma of the right thigh. Axial NECT showing areas of calcification.

Figure 11
Figure 11: Giant Lipoma of the right thigh. Photomicrograph showing adipocyte (right arrow), lipocyte (up arrow), giant cell (left arrow), and calcification (down arrow).

Figure 12
Figure 12: Giant Lipoma of the right thigh. Photomicrograph showing adipocyte (right arrow), lipocyte (up arrow), and necrosis (bent arrow).

Figure 13
Figure 13: Giant Lipoma of the right thigh. Photomicrograph showing adipocyte (right arrow), and calcification (down arrow).
Figure 14
Figure 14: Giant Lipoma of the right thigh. Photomicrograph showing giant cells (left arrows) and lipocyte (up arrow).

Figure 15
Figure 15: Giant Lipoma of the right thigh. Photomicrograph showing calcification (down arrow).

DISCUSSION
The locations and sizes of giant lipomas have been well described [2,3,5-7]. Giant lipomas may exert pressure effect on neighboring vital structures on account of their size, cause functional limitations, lymphedema, pain or nerve compression syndromes [2]. Lipomas can also cause meralgia paresthetica (pain or dysthesia in the lateral thigh caused by entrapment of the lateral femoral cutaneous nerve underneath the inguinal ligament)[8]. Other features and complications of giant lipomas are dragging sensation, bleeding from the site of ulceration, and thrombophlebitis [6,9]. Patients are likely to present earlier if they suffer functional disabilities. Patients have been known to present after 40 years of harbouring a lipoma [5]. Social pressure may be the sole reason for seeking medical attention in some cases of giant lipoma [10]. Our patient presented because of fatigue, inability to walk long distances, and more importantly, social pressure. The patient initially sought for cure from herbal practitioners before attending hospital. This is in keeping with the increasing popularity of alternative medical practice in our environment, that herbal medicine is efficacious and affordable [11,12]. The predominant fatty tissue content of the tumour was evident on computerized tomography scan in our patient. The attenuation coefficient was minus 89, similar to that of subcutaneous fat. This was also confirmed by the MRI which showed similar signal characteristics as subcutaneous fat in all the imaging sequences. The history of a sudden increase in size in the previous twelve months, was however suggestive of sarcomatous transformation.

The diagnosis of lipomas is expedited by MRI [4]. Superficial lipomas may be intermuscular or intramuscular. The MRI findings of intramuscular lipomas varies from a small, single and homogeneous mass identical to ordinary (superficial) lipoma, to a large, inhomogeneous lesion with an infiltrative margin [13]. The presence of infiltrative margins and intermingled muscle fibres indicate a benign lesion rather than malignancy [13]. Uninodularity of the mass is also useful in differentiating lipoma from well-differentiated liposarcoma [13]. Meticulous assessment of the margins and internal characteristics on MRI can be a useful aid in further distinguishing between lipoma and well-differentiated liposarcoma [14]. It had been suspected that Liposarcoma should be a differential diagnosis of giant lipoma [5]. Radionuclide imaging of soft tissue masses using three-phase technetium 99 metastable-labelled diethylene triamine pentaacetic acid (Tc-99m DTPA) (which will show no DTPA uptake at all phases) has a positive predictive probability of 100% that a soft tissue tumour is lipoma [15]. The use of radionuclide imaging in this study would have assisted further in the pre-operative diagnosis but the facility is not available at our centre. As shown in this study, it is essential to confirm the diagnosis of lipoma by excisional biopsy, although preoperative imaging with CT scan is useful [16]. Fine needle aspiration cytology (FNAC) has been proposed as an alternative to excisional biopsy but this is wholly unreliable [16]. This is because liposarcomas may contain areas of normal adipose tissue as a result of their lack of homogeneity [16].

The ultimate treatment of giant lipomas is wide surgical...
excision, as was done in the case presented [6]. However there is a risk of recurrence after a variable period despite radical resection [6]. This may occur as malignant transformation [17]. In view of this, long-term follow-up of patients may be necessary as a precautionary measure.

CONCLUSION

The size of the lipoma presented by our patient has not been previously described in the medical literature, to the best of our knowledge. Although the CT and MRI scans confirmed the predominant fatty tissue composition of the tumour, the evidences were not conclusive for definitive diagnosis. The importance of histological diagnosis cannot be overemphasized, as exemplified by this case.

CONSENT

Written informed consent was obtained from the patient. This is for the publication of case report and accompanying images.

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References

Author Information

M.A.N AKINKUNMI
Bola Tinubu Health & Diagnostic Centre, Lagos State University Teaching Hospital

B.O. BALOGUN
Bola Tinubu Health & Diagnostic Centre, Lagos State University Teaching Hospital

G.O.G. AWOSANYA
Bola Tinubu Health & Diagnostic Centre, Lagos State University Teaching Hospital

I.O FADEYIBI
Department of Surgery, Lagos State University Teaching Hospital

A. S. BENEBO
Department of Surgery, Lagos State University Teaching Hospital

S.S SOYEMI
Department of Pathology, Lagos State University Teaching Hospital

J.O OBAFUNWA
Department of Pathology, Lagos State University Teaching Hospital