Giant anterior chest wall lipoma: report of a case and review of literature

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Abstract

Introduction: Lipomas are the most common benign soft tissue tumors composed of mature adipocytes. While typically small and asymptomatic, giant lipomas are rare and can pose diagnostic and therapeutic challenges. We present a case of a giant lipoma causing significant functional impairment and cosmetic deformity.

Methods: A 54-year-old male presented with a progressively enlarging, painless mass on the posterior neck and upper back over a 5-year period. Clinical evaluation and imaging studies, including ultrasonography and contrast-enhanced MRI, revealed a well-encapsulated, homogenous fatty mass measuring 28 × 24 × 20 cm. The lesion exhibited no signs of invasion into adjacent structures. A wide local excision was performed under general anesthesia.

Results: The excised mass weighed 4.0 kg and was histologically confirmed as benign lipoma with no evidence of atypia or liposarcomatous changes. Postoperative recovery was uneventful, and the patient reported significant improvement in mobility and self-esteem at one year follow-up. No recurrence was observed.

Conclusion: Giant lipomas, although benign, may mimic malignant tumors due to their size and deep location. Early diagnosis and surgical excision are crucial for symptom relief and to exclude malignancy. Imaging is valuable in preoperative planning, while complete excision ensures definitive treatment with low recurrence risk. This case highlights the importance of timely intervention in managing unusually large soft tissue tumors.

Keywords: Giant lipoma, Lipoma, tumour, chest wall, case report.

Nigerian Research J Clin. Sci. 2025; 15(1): 64-69

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Introduction

Lipomas are the most common benign mesenchymal tumors composed of mature adipose tissue, typically presenting as slow-growing, soft, and painless subcutaneous masses[1]. Although usually small and clinically insignificant, lipomas can occasionally attain enormous sizes, referred to as "giant lipomas," which are defined as those measuring more than 10 cm in one dimension or weighing over 1,000 g[2]. They more commonly occur in cephalic body part especially the back, shoulders, neck, and head[1,3]. These lesions may cause significant aesthetic deformity, functional impairment, or compressive symptoms depending on their location and size[1].

Giant lipomas are rare, with few cases reported in the literature. They may mimic liposarcomas radiologically and clinically, raising diagnostic challenges that necessitate thorough imaging and histopathological evaluation[4]. Surgical excision remains the mainstay of treatment, providing both definitive diagnosis and symptom relief. The differential diagnosis includes a range of soft tissue tumors, both benign and malignant, underscoring the importance of accurate assessment.

This case report describes a rare presentation of a giant lipoma in the anterior chest wall, detailing the clinical findings, diagnostic workup, surgical approach, and histopathological results. The report highlights the need for early recognition and management of giant lipomas to prevent complications and ensure optimal outcomes.

Case report

We present a 54-year-old man who was referred from a peripheral hospital with complaints of left anterior chest wall swelling of 5 years duration. The swelling was initially small like a groundnut seed around the left breast but progressively increased in size to about the size of his head with associated dragging, dull pain. No swelling in the axilla or elsewhere in the body. No changes in the skin overlying the chest. There was no history of weight loss, anorexia, cough, chest pain, haemoptysis, yellowness of the eyes or back pain. No prior history of trauma to the breast or chest wall. No history of use of recreational drugs or any medications for intercurrent medical conditions. No past history of breast disease or family history of breast or other malignancy. He does not smoke cigarettes or drink alcohol.

On presentation, he was afebrile, not pale, anicteric, not dehydrated, no peripheral lymphadenopathy and no pedal oedema. The respiratory rate was 22 cycles/min. There was a hard pedunculated mass which measured 28cm x 24cm x 20cm, on the left anterior chest wall with overlying distended veins but not attached to the overlying skin. The nipple areolar complex was preserved (Fig 1a and b). No regional axillary lymphadenopathy. Other systems were normal

His haemoglobin was 10.4gm/dl, PCV was 33.7%, WBC count 7580/µL (47.7% neutrophils, 42.9% lymphocytes, 8.6% monocytes, 0.5% eosinophils) and platelet count $244x10^9$/L. Liver and renal function tests were normal. Electrocardiogram showed possible lateral myocardial ischemia. Echocardiogram was normal.

The chest radiograph was essentially normal. The differentials considered were giant anterior chest wall lipoma, liposarcoma and phyllodes tumour.

He underwent tumour excision under general anaesthesia (Fig. 2). The mass at surgery was a huge anterior chest wall lipoma that weighed 4kg.

The estimated blood loss was 300mls. His post-operative period was uneventful and was discharged home on the 3rd post-operative day in a stable condition. No recurrence on follow-up in the clinic after one year.

Figure 1a: Giant anterior chest wall lipoma

Figure 1b: Giant anterior chest wall lipoma

Figure 2: Post-excision of giant chest wall lipoma

Histopathological examination revealed a yellowish firm mass in its cut sections. Microscopic examination showed an encapsulated mass composed of sheets of mature adipocytes with clear cytoplasm and eccentric nucleus that are separated into lobules by fibrocollagenous stroma. A diagnosis of lipoma with no evidence of malignancy was made (Fig. 3a and b).

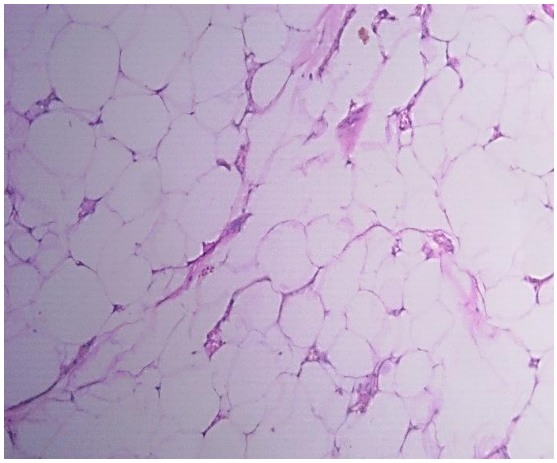

Figure 3a: Sections of the tumour showing a benign neoplasm composed of loopholes of mature adipocytes that are separated by fibrose stroma. Tumour cells show no evidence of dysplasia and no abnormal mitosis. The diagnosis was that of Lipoma.

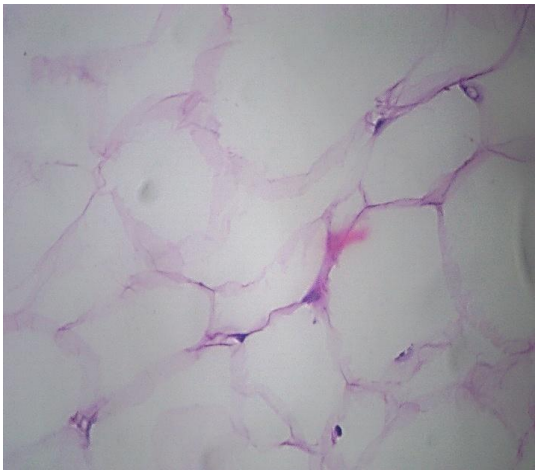

Figure 3b: Sections of the tumour showing a benign neoplasm composed of loopholes of mature adipocytes that are separated by fibrose stroma

Discussion

Lipomas are benign tumors of mesenchymal origin composed predominantly of mature adipocytes. While 2% of individuals develop lipoma in their lifetime, they account for nearly 50% of all soft tissue tumors and commonly occur in adults between the fourth and sixth decades of life[5]. Additionally, while most superficial lipomas are small, measuring less than 5 cm in diameter, a minority can grow to massive proportions, termed giant lipomas and can occur wherever fatty tissue exists in the body[6]. A lipoma is classified as "giant" when it exceeds 10 cm in any dimension or weighs more than 1,000 grams[2].

Giant lipomas are rare, and their size often raises clinical concern due to the potential for functional impairment, disfigurement, and suspicion of malignancy, particularly well-differentiated liposarcoma[7]. The differential diagnosis can be challenging, as both entities may present as large, painless, slowly enlarging soft tissue masses. In this context, imaging studies such as ultrasonography, computerized tomography (CT), and magnetic resonance imaging (MRI) are useful in characterizing the lesion[7,8]. Typically, lipomas demonstrate homogeneous fat density with well-defined margins, while liposarcomas may exhibit septations, nodular non-adipose components, and infiltration into adjacent tissues[8]. Nonetheless, imaging findings may not be definitive, and histopathological analysis remains the gold standard for diagnosis[7]. In our patient, these investigations could not be carried out prior to surgical intervention due to financial constraints.

The case presented reinforces the importance of histological confirmation, as the excised tumor was confirmed to be a benign lipoma without atypia or features of liposarcoma. Histologically, lipomas are composed of mature adipocytes with uniform nuclei and minimal fibrous stroma, lacking mitotic activity or cellular atypia[1]. This contrasts with liposarcomas, which often display pleomorphic or

atypical lipoblasts, hyperchromatic nuclei, and infiltrative growth patterns[1].

The etiology of giant lipomas remains unclear, though some studies have suggested a potential role of trauma, endocrine factors, or genetic predispositions in their development[9,10]. They may grow insidiously over years and remain asymptomatic until their size causes cosmetic deformity, nerve compression, or restricted mobility. In the present case, the patient sought medical attention primarily due to the progressive enlargement, associated discomfort and cosmetic deformity.

Surgical excision is the treatment of choice for giant lipomas, providing both symptomatic relief and definitive diagnosis. Complete excision with a clear margin is essential to minimize recurrence risk, which remains low for benign lesions[7]. Incomplete excision or misdiagnosis of liposarcoma may lead to local recurrence and underscores the necessity of meticulous operative planning and pathological examination particularly when liposuction or suction-assisted lipectomy is done as currently being advocated in some quarters[7]. The occurrence of giant lipomas in unusual locations may pose technical challenges during surgical removal, especially when adjacent to neurovascular structures.

Although rare, giant lipomas have been reported in various anatomical sites, including the back, shoulder, thigh, and neck[5]. The diameter of 85% of superficial lipomas is less than 5cm. Diameters greater than 10 cm are rare. Our patient had his giant lipoma on the anterior chest wall making it quite unique. The patient reported psychological challenges due to the obvious swelling making him withdraw from peers. Psychological aspects of giant lipoma have not been well elucidated in the literature probably due to the rarity of this condition.

Conclusion

Giant lipomas, though benign, should not be underestimated due to their potential size and the need to distinguish them from malignant counterparts. A comprehensive clinical, radiological, and histopathological approach is essential for accurate diagnosis and effective management. This case highlights the value of early evaluation and surgical excision, which leads to favorable outcomes and prevents complications associated with delayed treatment. Psychological impact of giant lipomas needs further review particularly among the less privileged and underserved.

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