Giant lipomas of the upper extremity: Case reports and a literature review

Chenicheri Balakrishnan MD¹, Dhiren Nanavati MD¹, Anila Balakrishnan BS², Thomas Pane MD¹

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Giant fibrolipomas involving the upper extremities are rare tumours. These large masses grow slowly and produce symptoms due to their size, location and compression of adjacent structures. Surgical excision usually leads to complete recovery from symptoms.

Key Words: *Giant lipoma*

Lipomas are one of the most common benign soft tissue tumours of the extremities. Although they are usually subcutaneous, they can occur in any tissue plane. Giant lipomas are rare tumours that may cause mechanical dysfunction, pain and altered sensibility due to their size and the resulting compression of neighbouring structures. Lipomas are very slow growing tumours. Patients usually seek treatment due to social embarrassment resulting from the inability to properly wear clothing and occasional symptoms due to the compression of adjacent nerves. In the present article, two cases of giant lipoma are reported. These patients presented with symptoms caused by pressure effects on adjacent structures. Both patients were treated surgically, resulting in complete relief of symptoms.

CASE PRESENTATIONS

Case 1

A 43-year-old man presented with pain and tingling of the fingers during flexion of the elbow. He had noticed a swelling of the arm following an injury incurred while lifting weights and was diagnosed with a muscle tear. The swelling enlarged over a seven-year period and he experienced difficulty wearing shirts. His medical history was free from any serious illness. On presentation to the clinic, he experienced pain and numbness of the median nerve distribution on the application of pressure over the swelling (Figure 1). The mass measured approximately 22 cm in diameter. Radiographs, electromyography and nerve conduction studies were negative. At exploration (Figure 2), the lipomatous mass was observed to be positioned on the arm close to the median nerve.

Case 2

A 50-year-old woman presented with a two-year history of weakness in the left arm and shoulder pain during exertion. The patient had a mass over the upper arm close to the anterior axillary fold (Figure 3), which she stated had been enlarging over a two-year period. A mammograph was performed, which was negative. A full cardiology workup was performed due to pain and weakness of the left arm and was also negative. The mass measured 12 cm in diameter on examination and extended into the axilla. At exploration (Figure 4), the lipoma was observed to originate from the fascia covering the axillary artery and nerve and extend deep to the pectoralis major muscle. Excision of the lipoma resulted in complete relief of her symptoms.

DISCUSSION

Lipomas are one of the most common benign mesenchymal tumours in the body and are mainly composed of mature adipose cells. They may

Des lipomes géants d'un membre supérieur : rapports de cas et analyse bibliographique

Les fibrolipomes géants des membres supérieurs sont des tumeurs rares. Ces grosses masses croissent lentement et provoquent des symptômes imputables à leur dimension, à leur foyer et à leur compression des structures adjacentes. En général, l'excision chirurgicale s'associe à une résolution complète des symptômes.

be referred to as a fibrolipomas due to the fibrous septae present. Lipomas can be found in almost all organs of the body where fat normally exists and are, therefore, known as ubiquitous or universal tumours (1). Lipomas can be solitary or occur in multiples, and can also occur alone or in association with syndromes. They are usually located on the trunk or extremities; however, they can also be interosseous, visceral, intramural, subfacial or intermuscular. Lipomas greater than 5 cm in diameter are classified as giant lipomas. Although these are slow growing tumours, most upper extremity giant lipomas present as symptomatic masses, with symptoms often related to compression.

Most lipomas present as small subcutaneous swellings without any specific symptom. Giant lipomas, although rare, can present in the thigh, shoulder or trunk. Giant lipomas of the axillary area are very rare (2). Clinical features of these giant lipomas are mainly due to their size and may include pain from stretching or compression of adjacent nerves, compartment syndrome, restriction in movements of the joint involved, and social embarrassment or inability to wear clothing (3).

A definitive diagnosis of giant lipoma can be made only by histopathological examination. However, once suspected, other investigations can provide additional information about the tumour. The characteristics of benign lipomas on ultrasonography, computed tomography and magnetic resonance imaging have been well established, and technetium-99 diethylenetriaminepentaacetic acid scanning has also been used to confirm the diagnosis (4-6).

Lipomas are the most common lipomatous tumour of mesenchymal origin and account for nearly one-half of all benign solid tumours of the body. In their typical form, they seldom present diagnostic problems for the pathologist. However, lipomas located in deeper locations of the body (eg, intramuscular lipoma, perineural lipoma) or those with unusual features (eg, chondroid lipoma, lipoma with hibernoma, cellular angiolipoma, spindle cell/pleomorphic lipoma) may be confused with liposarcomas. Recent cytogenetic studies have reaffirmed the separate nature of many of the lipoma variants. Solitary lipomas commonly have rearrangements of chromosome 12, a finding not encountered in multiple lipomas or in spindle cell/pleomorphic lipomas. Liposarcomas are the most common adult soft tissue sarcoma; these tumours seldom arise from subcutaneous tissues or from preexisting lipomas and are rarely observed in children. Liposarcomas are associated with immature fat cells or lipoblasts. These cells have an eccentric, hyperchromatic nucleus that is indented or scalloped by the presence of one or more fat vacuoles. Because similar cells can be seen in a variety of nonlipomatous lesions (eg, silicone reactions), appropriate histological background should be observed. Failure to apply strict criteria in identifying such

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¹Division of Plastic Surgery, Wayne State University, Detroit, Michigan, ²Department of Anesthesia, Oregon Health and Science University, Portland, Oregon, USA

Correspondence: Dr C Balakrishnan, Division of Plastic Surgery, 3V-26 Detroit Receiving Hospital, Detroit, Michigan 48201, USA.
Telephone 313-745-3008, fax 313-74-2964, e-mail cbalakri@med.wayne.edu

Figure 1) A mass measuring 22 cm in diameter in Patient 1

Figure 2) Patient 1 at exploration

Figure 3) A mass measuring 12 cm in diameter in Patient 2

cells can lead to the overdiagnosis of liposarcoma. Liposarcoma is a long-term complication of the disease; these lesions may progress histologically (dedifferentiate), a phenomenon that confers metastatic potential. Dedifferentiation is largely a time-dependent phenomenon that occurs in sites in which there is a high likelihood for clinical persistence of disease (eg, the retroperitoneum). Dedifferentiated liposarcomas occur in an age group similar to well-differentiated liposarcomas, but are found far more frequently in the retroperitoneum. The majority occur as de novo lesions, with only a small percentage occurring as late

Figure 4) Patient 2 at exploration

complications of well differentiated liposarcomas. The tumours consist of well-differentiated areas associated with areas of nonlipogenic sarcoma usually resembling high-grade malignant fibrous histiocytoma or fibrosarcoma. However, the range of histological features occurring in the dedifferentiated areas is more varied than previously appreciated. Low-grade areas resembling fibromatosis or low-grade fibrosarcoma may be regarded as the sole expression of dedifferentiation or may coexist with high-grade sarcoma (7-9).

Surgery is the treatment of choice for these giant swellings due to their size, tendency to recur and the potential hazard of malignant transformation (10). Another option for the treatment of these tumours is liposuction, if malignant potential can be excluded (11). A well-defined pseudocapsule is formed due to continuous pressure on the surrounding tissue, which makes the dissection and enucleation of these masses uncomplicated. Dead space created following dissection of a giant lipoma is usually drained using a suction drain to avoid the formation of hematomas or seromas.

In the two cases reported in the present article, surgical excision resulted in complete relief of symptoms. The eventual pathological diagnosis of these masses was fibrolipoma with no evidence of malignancy. Because these tumours have a tendency to recur and can undergo malignant transformation, patients should be followed up for any recurrence in swelling or pain.

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