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## Approach and management of a giant lipoma in the left lumbar region



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## ABSTRACT

**INTRODUCTION:** Lipomas are the most common benign tumors of the adipose tissue and can be located in any region of the body. In most cases lipomas are small and asymptomatic, but they can at times reach considerable dimensions and, depending on their anatomic site, hinder movements, get inflamed, cause lymphedema, pain and/or a compression syndrome.

**PRESENTATION OF CASE:** We here report the case of an otherwise healthy patient who came to our observation with a giant bulk in the left lumbar region which had been showing progressive growth in the previous 5–6 years. Physical examination, ultrasound and MRI were carried out in order to characterize the size, vascularization and limits of the lesion. Due to the pain and restriction of movement that this bulky lesion caused, surgical excision of the lesion was performed.

**DISCUSSION:** Giant lipomas display an important differential diagnosis problem with malignant neoplasms, especially liposarcomas, with which they share many features; often the final diagnosis rests on histological evaluation. We here discuss the diagnostic problems that arise with a giant lipoma and all the possible approaches concerning treatment of such a big lesion, explaining the reasons of our approach and management of a common tumor in our case presenting unusual dimensions and location.

**CONCLUSION:** Our approach revealed to be successful in order to nurse our patient's pain, restore the mobility and address the aesthetic issues that this lesion caused. Postoperative checkups were carried out for one year and no signs of relapse have been reported.

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## 1. Introduction

Lipomas are the most common benign tumors of the adipose tissue and can be located in any region of the body [1]. They are well differentiated neoplasms, consisting of adipocytes surrounded by a fibrous capsule, palpable as soft subcutaneous bulks [2] not painful to the touch. In most cases lipomas are small [4], asymptomatic and they do not evolve into malignant tumors [15,16], but they can at times reach considerable dimensions and, depending on their anatomic site, hinder movement, get inflamed, cause lymphedema, pain and/or a compression syndrome [1,5–8].

Sanchez et al. [2] defined the giant lipoma as a lesion that is over 10 cm in maximum diameter or that weighs over 1000 g.

We here report the case of a patient who came to our observation with a 23 × 11 × 8 cm lipoma in the left lumbar region. Therefore we describe the approach and management of a common tumor presenting quite unusual dimensions and location.

## 2. Presentation of case

A 32-year-old woman came to our observation complaining the appearance of a subcutaneous bulk in the left lumbar region, which had been showing progressive growth in the previous 5–6 years.

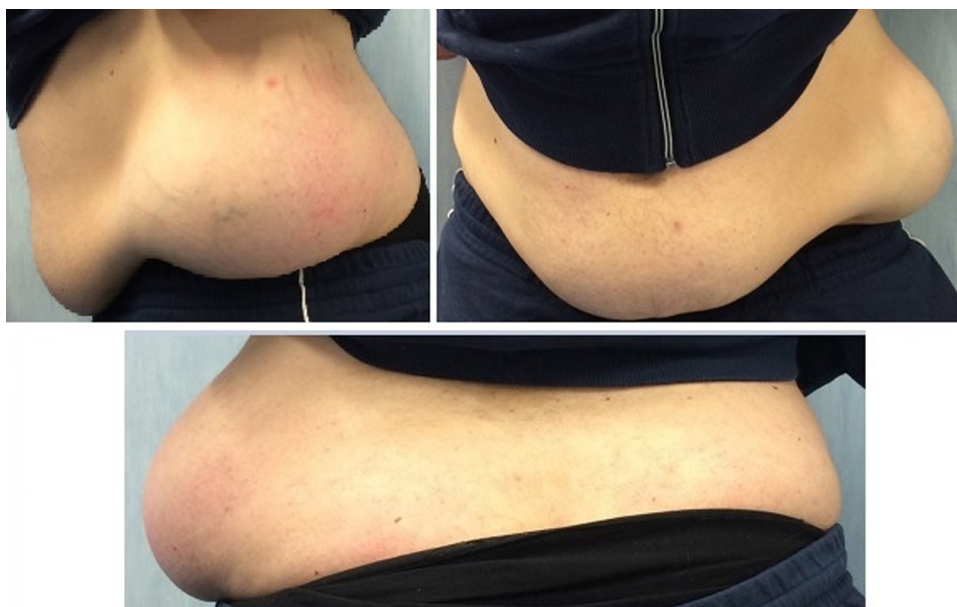
The remarkable size of the bulk caused pain and restriction of movement, especially flexion, extension and rotation of the trunk, besides constituting a serious aesthetic issue.

The patient was otherwise healthy, did not take any kind of medication and did not refer previous similar episodes. Her parents and her two siblings (a male and a female) enjoyed good health and did not report any similar lesions. The patient weighed 92 kg and was 170 cm tall; she had a BMI of 31.8, being therefore in the obesity range. She referred undergoing a low-calorie diet during the years prior to the examination, resulting in a weight loss of approximately 20 kg, contributing to draw attention to the bulky lesion in her left flank.

Inspection was carried out with patient undressed in both standing and supine position. It revealed the presence of a voluminous mass that altered the physiological silhouette of the left flank. The skin overlying the lesion appeared normochromic and normotrophic (Fig. 1). Palpation of the left lumbar region revealed a subcutaneous bulk, which was painful to the touch but mobile on the underlying planes.

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**Fig. 1.** Preoperative study of the case: inspection reveals a voluminous mass in the left lumbar region that alters its physiological silhouette. The skin overlying the bulk appears normochromic and normotrophic.

Routine lab tests were normal. The lipid profile also showed normal values. Ultrasound of the left lumbar region and MRI of the abdomen were prescribed in order to better characterize the size, vascularization and limits of the lesion.

Ultrasounds of the left lumbar region showed the presence of an oval, echogenic and non-homogeneous image with fibrolipomatous aspect, measuring approximately 210 × 49 mm.

Similarly, MRI of the abdomen showed in the left lumbar region, subcutaneously, a round bulk with regular and sharp edges, a maximum diameter measuring 22 cm and a lipomatous signal. No signs of infiltration of the abdominal wall and muscles underlying the bulk were shown (Fig. 2).

The surgery was carried out in general anesthesia because of the significant size of the lesion. A lozenge incision of the skin above the lesion was performed. After identifying the fibrotic capsule enfolding the mass, the lesion was separated from the layers surrounding it, while paying attention not to disrupt the capsular continuity. A big pedicle leading into the lesion was identified and then ligated before excising the lesion (Fig. 3). After the excision an accurate hemostasis was performed and a drainage tube was positioned. The surgery ended with suture of anatomic layers. Such a big lesion had stretched the skin over it, but the lozenge incision allowed the removal of excess skin. A compressive bandage was applied for four weeks.

We prescribed to the patient analgesics to the need and cefazolin immediately after the surgery and twice on the next day. The drainage bag showed traces of serum and blood. The drainage tube has been removed two days after surgery.

Postoperative examinations were uneventful, no hematomas, cutaneous infections or pain were detected.

The macroscopical examination of the excised lesion showed a nodular bulk measuring 23 × 11 × 8 cm with homogeneous adipose features. Histological evaluation confirmed that the lesion was composed of adipose tissue without any signs of cellular atypia. Immunostaining for vimentin and S-100 protein was positive. The FISH for MDM-2 and CDK4 was negative, enabling us to rule out liposarcoma [3] and leading to the final diagnosis of a giant lipoma.

After discharge, the patient underwent follow ups over one year, consisting in physical examination and ultrasounds of the left lumbar region, which showed no signs of a relapse (Fig. 4).

### 3. Discussion

Lipomas are the most common benign tumors of the adipose tissue. They are well differentiated neoplasms, consisting of adult adipocytes [9] surrounded by a fibrous capsule. In most instances they have a subcutaneous localization, but they also have been reported in various internal organs such as liver, kidneys and lungs, where there is no or very little adipose tissue [5]. Giant lipomas are most likely located in internal organs rather than subcutaneously because visceral lipomas are not visible from the outside therefore they grow until they reach considerable dimensions [7,9,10] and eventually compress neighboring structures.

Lipomas are believed to arise from mesenchymal primordial fatty tissue cells. Therefore, they are not of adult fat cell origin. They tend to increase in size with increasing body weight, but interestingly, weight loss usually does not decrease their size. Thus, it appears that they are not available for metabolism even in starvation [4,7].

Very little is known about the pathogenesis of lipomas. An increased incidence is associated with obesity, diabetes, increase of serum cholesterol, radiation, familial tendency and chromosomal abnormalities [9–11].

Trauma is thought to be an important factor in the pathogenesis of lipoma [12]. It has been proposed that rupture of the fibrous septa after trauma accompanied by tears of the anchorage may result in proliferation of adipose tissue [13]. It also has been assumed that local inflammation secondary to trauma may induce differentiation of pre-adipocytes and disrupt the normal regulation of adipose tissue [12,14].

The main problem in the diagnosis of giant lipomas is to rule out malignant neoplasms, especially liposarcomas [14]. The possibility of the lesion being a lipoblastoma, lymphangioma, lymphangioliipoma [15,16] or epidermoid cyst [2] should also be considered.

Well-differentiated liposarcomas have several features in common with benign lipomas: they present as palpable bulks with a variable consistency, generally not painful to the touch. Clinical features suggesting the malignancy of a fatty subcutaneous tumor are a diameter greater than 10 cm, rapid growth of the mass in recent months [4] and deep lesions not being mobile to the

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