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Case Report

Unusual presentation and management of spindle cell lipoma: A case report

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ABSTRACT

Spindle cell lipoma is a benign tumor composed of mature adipocytes and uniform spindle cells, it does not exceed usually more than 2.5 cm and can be treated surgically and does not require wide surgical margins. It must be differentiated from liposarcoma and other malignant tumours and can be differentiated based on imaging and histological features. We report a case of 67-year-old male who developed a posterior thoracic mass more than 10 years ago, that grew recently, whose imaging features was suggestive of liposarcoma, and was treated as such.

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Introduction

Lipomas are benign tumors composed of adipocytes forming a round shaped lump of tissue located beneath the skin. The spindle cell lipoma (SCL) is composed of mature adipocytes and uniform spindle cells. This variant is usually present in male patients between the age of 40 to 60, located most frequently in the subcutaneous tissue of the upper back, shoulder and posterior neck.¹ They are

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usually less than 2.5 cm in size² and have a benign course. In this paper, we report the case of a spindle cell lipoma with an unusual presentation.

Case report

This was a 67-year-old male patient who presented in an ambulatory setting for a posterior thoracic mass. He had a prior medical history of type 2 diabetes mellitus and hyperlipidemia. He first noticed the mass more than ten years ago but was asymptomatic until a recent growth caused discomfort in the back region. The physical exam showed a mobile mass in the posterior thorax, approximately 14 cm in size. There was no tenderness, redness, or warmth in or around the lesion (Fig. 1).

An MRI of the left scapula showed a 11.3 × 4.8 × 12 cm heterogeneous mass seen within the subcutaneous soft tissues posteriorly, around 4 mm deep to the skin. It showed a heterogeneously increased signal on T1, T2, and STIR, with mild variable enhancement after contrast injection.

Considering the size of the tumor, its recent growth, and its aspect on the MRI suggestive of malignancy, we decided to treat it as a sarcoma. Surgical excision of the lesion was performed with a cuff of healthy tissue, including the subcutaneous tissue and surrounding aponeurosis, and was completed without any complications. The follow-up was unremarkable. Gross examination of the mass showed a homogeneous, well-defined yellowish lesion in contact with the deep and superficial tissues, with a thin layer of residual adipose tissue. There was no hemorrhage or necrosis (Fig. 2).

On histology, the lesion was well-limited and mostly covered by a fibrous pseudocapsule. It contained adipocytes associated with thick collagen bands and some fusiform cells. The adipocyte cells were relatively proportional in size, with no identified lipoblasts or cytonuclear atypia. Spindle cells were also spread out without cytonuclear atypia and were CD34+ on immunostaining. Thus, the diagnosis of benign spindle cell lipoma was made.

The patient healed well, and with a follow up of one year, he shows no signs of recurrence.

Discussion

This is the case of a spindle cell lipoma with atypical features. Typically, spindle cell lipomas are benign tumors that are slow growing and non-infiltrative, they are usually solitary and painless. Commonly, they are found in the posterior neck or upper trunk, less frequently at other locations such as the breast, perineum and oral cavity.¹ SCL are variable in size. In one case series, the size of SCL ranged between 1 cm and 4 cm and it rarely exceeded those numbers.² In our case, the patient had a 12 cm mass, which is unusual but has been reported in the literature. For instance, Machol et al. reported the case of a patient with a 16 cm SCL.³

The differential diagnosis of SCL includes well-differentiated liposarcoma but can be distinguished based on imaging and histologic features.

Magnetic resonance imaging (MRI) is the preferred modality for large lipoma evaluation, particularly for lesions with a size greater than 5 cm, with rapid growth, or involving adjacent structures.⁴ SCLs contain variable amount of fat and little to no visible fat on imaging. On T1-weighted (T1W) images, the nonfat portion is similar to muscle, however, on T2-weighted (T2W) images, the signal intensity (SI) is variable. Contrast-enhanced images may show enhancement in non-fat areas, with delayed and potentially heterogeneous enhancement depending on the proportion of fat.⁵

Differentiated liposarcomas appear as a fatty mass with thickened, irregular septa and exhibit decreased signal intensity on T1-weighted images and increased signal intensity on T2-weighted images. The presence of a larger lesion size is also suggestive of liposarcoma.⁶

MRI findings of our lesion revealed a heterogeneous mass that was characterized by a heterogeneously increased signal on T1, T2 and STIR. In addition, mild variable enhancement after contrast injection was present. Therefore, the heterogeneous appearance has led to diagnostic ambiguity with liposarcoma.

The use of fine needle aspiration preoperatively could assist in diagnosing cases where MRI lacks specificity, being as indicative as histology. According to Domanski et al., the cytological characteristics can be described as a mixture of mature adipocytes, uniform spindle cells, and collagen fibers in



Figure 1. Appearance of the mass on physical exam.



Figure 2. Gross appearance of the surgical piece.

different ratios. Distinguishing SCL from cytologic smears can be challenging due to variable component ratios, similar to histologic sections. SCL may also contain a myxoid matrix, making it difficult to differentiate from other myxoid lesions.⁷ In the presented case report, we opted not to perform fine needle aspiration (FNA) due to financial constraints on the patient and the likelihood that it would not have altered the treatment plan. Fine needle aspiration would have been mandatory for deeper and more infiltrative lesions to adapt the aggressivity of the surgery to the nature of the tumor (Fig. 3).

Lipomas can be removed using suction-assisted lipectomy with small incisions, leading to a better esthetic result and reduced morbidity compared to open surgery. However, this technique has a higher risk of recurrence, particularly in the case of giant lipomas, where open surgery is still considered the best option.⁸ The treatment of SCL is surgical excision, but histologic evaluation is needed to rule out liposarcoma.³ SCL has a good prognosis, and excision is curative with a low risk of recurrence (1–2%).²

For liposarcoma, complete surgical resection with wide margins is essential to minimize the risk of local recurrence. Adjuvant radiation therapy and/or chemotherapy may also be used. Although well-differentiated liposarcomas have a low risk of distant metastasis, achieving complete resection is crucial to reduce the risk of local recurrence.⁹

In our case, given the size of the tumor, its recent growth, and the presence of high-risk features on MRI suggestive of liposarcoma, a wide resection with negative margins was performed.

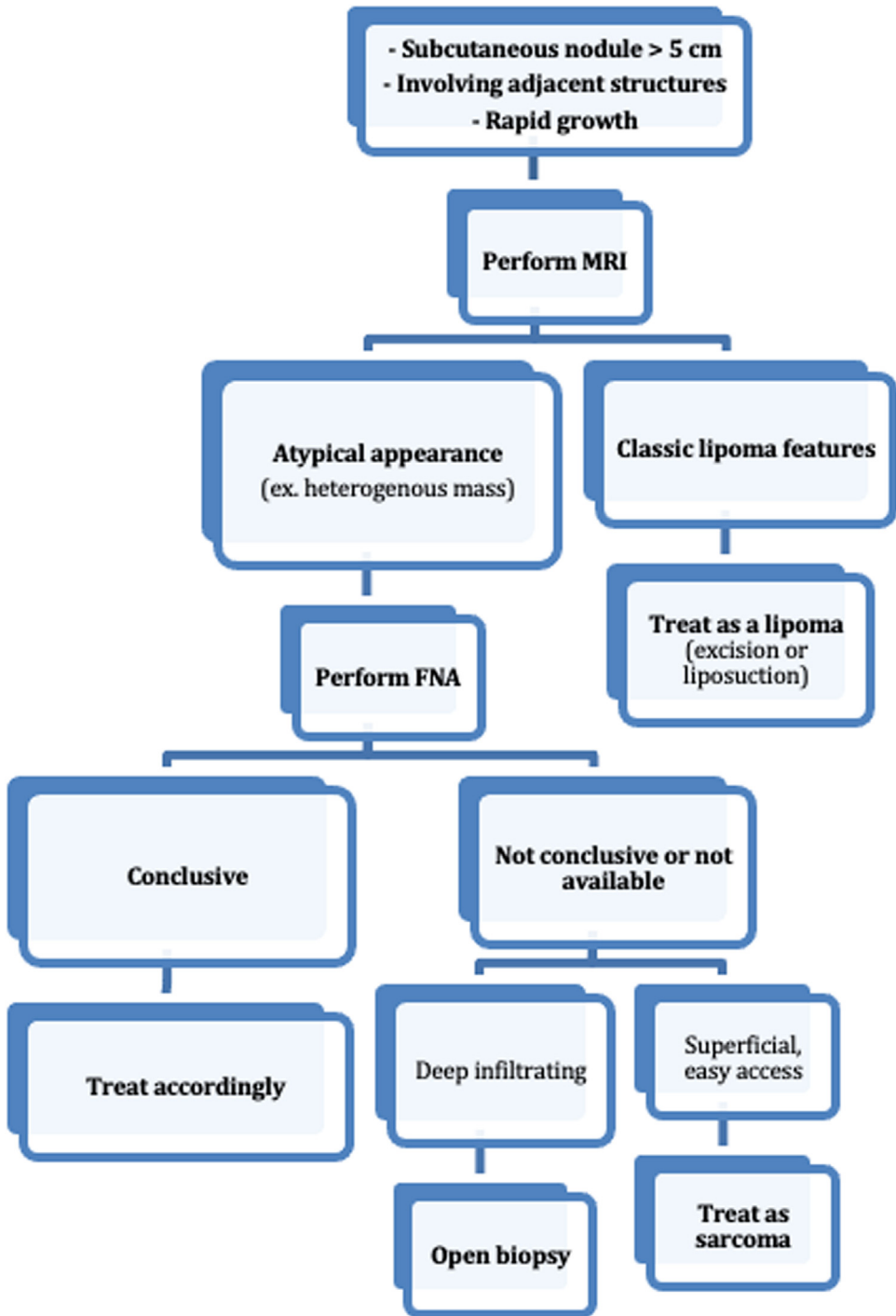


Figure 3. Algorithm for the diagnosis and treatment of SCL.

Spindle cell lipoma has many characteristics on histology, it is composed of an admixture of adipocytes, short spindle cells, and ropey collagen bundles. The uniform size of the adipocytes and its minimal nuclear atypia or lipoblast formation is in favor of lipoma. In contrast, well differentiated lipoma-like liposarcomas have univacuolated fat cells of different size, with a slightly pleomorphic nuclei that can be hypochromic. Liposarcoma is also favored by cellular and nuclear polymorphism. On the histopathological exam of our patient, adipocyte cells were proportional in size, lipoblasts, and cytonuclear atypia was absent, which was in favor of benignity. On immunostaining, virtually all SCL are CD34+, but this is also the case in some lipoma-like sarcomas.¹⁰

In summary, a spindle cell lipoma with a size larger than 4 cm is rare. Radiological findings are useful in orienting the diagnosis, but in our case, it was atypical as it had features mostly seen in liposarcoma. FNA can serve as a valuable tool in establishing a preoperative diagnosis when radiological features are inconclusive, especially in deeply located lesions. In case the FNA is not available or is not conclusive, we recommend a wide excision with negative margins to manage this mass as if it were a liposarcoma.

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Ethical approval

Not required.

Declaration of Competing Interest

The authors report no conflicts of interest.

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