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Liposarcoma of the Upper Extremity in an Elderly Patient

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Abstract **Case Report**

Liposarcoma is a malignant mesenchymal tumor originating from adipose tissue and is among the most common soft tissue sarcomas in adults. However, its occurrence in the upper extremities is rare, leading to diagnostic and therapeutic challenges. This report presents the case of an 83-year-old female patient with a 20 cm, painless, slow-growing mass in the left arm. Imaging studies, including ultrasound and MRI, confirmed the absence of osteomuscular involvement. Surgical resection with wide margins was performed, achieving complete tumor removal without requiring flap reconstruction. Histopathological analysis confirmed free margins. Due to the anatomical constraints of the upper extremities, achieving adequate surgical margins while preserving function is complex. Although surgical excision remains the primary treatment, the risk of local recurrence and metastasis necessitates long-term surveillance. This case underscores the importance of early diagnosis, precise imaging, and a multidisciplinary approach to managing upper extremity liposarcomas, particularly in elderly patients with comorbidities. Further studies are required to refine treatment strategies and improve clinical outcomes.

Keywords: liposarcoma, upper extremity, surgical excision, elderly patient.

INTRODUCTION

Liposarcoma is a malignant mesenchymal neoplasm originating from adipose tissue. It constitutes one of the most prevalent soft tissue sarcomas in adults, accounting for 15% to 20% of all cases. Its localization in the upper extremities, such as the arm, is uncommon, as it is more frequently observed in the retroperitoneum and lower extremities. This rarity poses challenges in both diagnosis and management in this anatomical region [1, 2].

Histologically, liposarcomas are categorized into five primary subtypes: well-differentiated, myxoid, dedifferentiated, pleomorphic, and myxoid/pleomorphic. These subtypes exhibit distinct clinical behavior, pathological features, and prognostic implications. Well-differentiated liposarcoma is the most common subtype, characterized by indolent growth and limited metastatic potential, whereas dedifferentiated and pleomorphic variants demonstrate an aggressive course with a higher propensity for metastasis [3, 4].

In the upper extremities, liposarcoma typically presents as a slowly enlarging mass, often painless in its early stages. This nonspecific presentation may result in delayed diagnosis, leading to increased tumor size and potential involvement of critical neurovascular structures. These factors complicate surgical management and elevate the risk of local recurrence [5].

The standard treatment for arm liposarcomas involves wide-margin surgical excision, frequently complemented by adjuvant radiotherapy. However, anatomical constraints in the upper extremities may limit the feasibility of radical resections, posing significant therapeutic challenges. Additionally, the high rates of local recurrence and pulmonary metastasis highlight the necessity of multidisciplinary management and long-term surveillance strategies [6, 7].

CLINICAL CASE

Female patient aged 83 years, with a history of rheumatoid arthritis, diabetes mellitus and blindness. With limited mobility. She presented a rounded mass of approximately 20 cm in diameter in the middle third of the left arm, with regular edges, semi-hard consistency, semi-mobile, without ulceration or peripheral skin

changes (Figure 1). An initial ultrasound showed a hypoechoic mass, without increased vascularity.

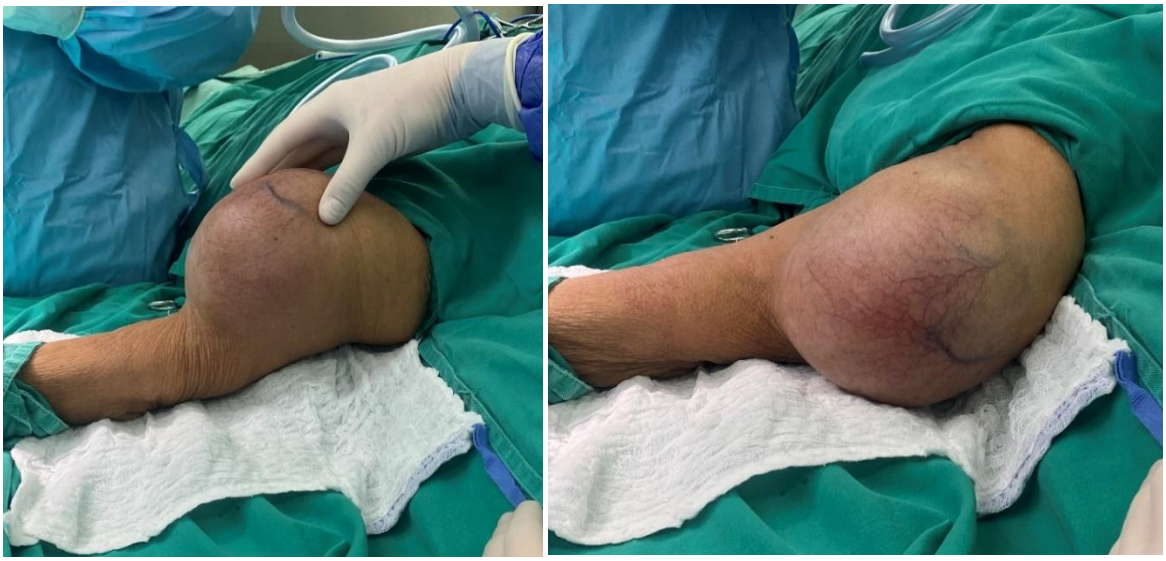
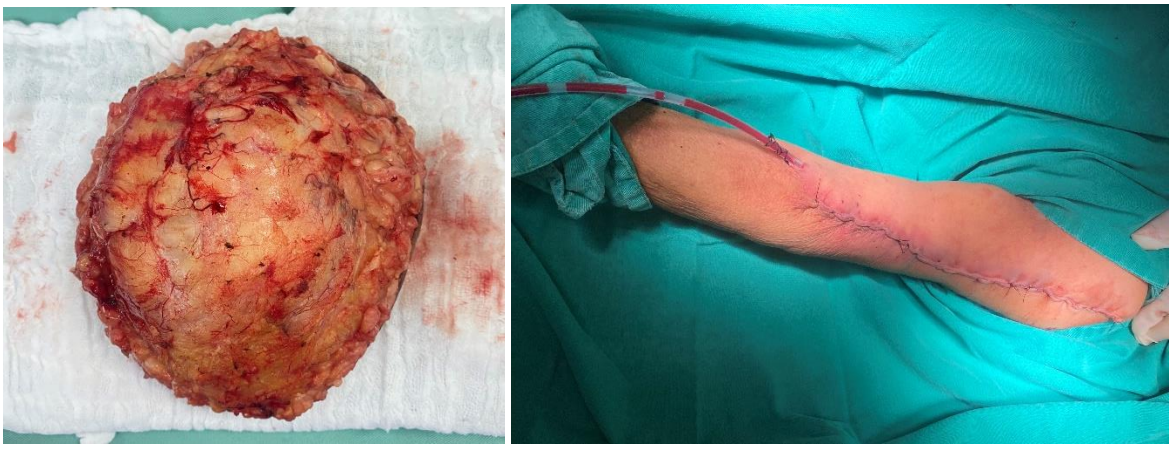


Figure 1: Preoperative images of the liposarcoma

Subsequently, an MRI was performed, which ruled out osteomuscular infiltration. A surgical resection with wide margins was performed, achieving total removal of the tumor. The surgical bed was closed by releasing the remaining subcutaneous tissue, without requiring any type of flap; a Biovac drainage was placed (Figure 2). The patient was discharged without complications. The histopathological result indicated free edges.



A **B**

Figure 2: A. Pathological piece. B. Post operative image of the arm after resection

DISCUSSION

Liposarcoma of the upper extremity, though uncommon, presents significant diagnostic and therapeutic challenges. This rarity necessitates a nuanced approach to management, as standard protocols often derive from more prevalent retroperitoneal and lower extremity cases. The presented clinical case highlights several pertinent aspects of these challenges.

Diagnostic Considerations

The patient's clinical presentation, characterized by a large, painless mass with no overlying skin changes, aligns with typical features of liposarcoma. However, such nonspecific symptoms often delay diagnosis. Imaging modalities like ultrasound and MRI, as utilized here, are critical for assessing tumor characteristics and ruling out adjacent osteomuscular involvement [4, 7]. Despite these tools, definitive diagnosis hinges on histopathological evaluation, as liposarcoma subtypes exhibit diverse clinical behaviors and prognostic implications [1, 6]. For instance, well-differentiated liposarcomas, as in this case, have a relatively indolent course, in contrast to the aggressive dedifferentiated and pleomorphic variants that pose higher risks of metastasis [2, 8].

Surgical and Therapeutic Challenges

The mainstay of treatment for liposarcoma is wide-margin surgical excision, as performed in this case [9, 10]. In the anatomically constrained upper extremity, achieving adequate margins without compromising functionality is particularly challenging. The successful resection here, with histopathologically confirmed clear margins, underscores meticulous surgical planning. The decision to forgo flap reconstruction, relying on local subcutaneous tissue mobilization, reflects thoughtful adaptation to the patient's comorbidities and functional needs [7, 8).

However, high rates of local recurrence and potential metastasis necessitate vigilance. While adjuvant radiotherapy is commonly considered to mitigate recurrence risks, its application in elderly patients, especially those with significant comorbidities, must be carefully weighed against potential adverse effects [9, 11].

Multidisciplinary Approach and Surveillance

The multidisciplinary approach, integrating surgery, imaging, and pathology, was pivotal in this case [6, 8]. Long-term follow-up, ideally with regular imaging and clinical evaluation, is essential given the propensity for recurrence and late metastasis in liposarcoma [5, 10]. Additionally, advancements in molecular diagnostics, such as identification of 12q13-15 chromosomal rearrangements, may further refine prognostication and guide emerging therapies [3].

Clinical Implications

This case underscores the need for heightened awareness of liposarcoma's variable presentation in atypical anatomical locations. It also illustrates the importance of tailoring management strategies to individual patient contexts, balancing oncologic control with quality of life considerations [10, 11].

Further studies are warranted to better characterize the clinical outcomes of upper extremity liposarcomas, enabling more robust evidence-based guidelines for diagnosis, treatment, and follow-up.

CONCLUSION

Liposarcoma of the upper extremity, though rare, presents significant diagnostic and therapeutic challenges that require a personalized, multidisciplinary approach. The presented case highlights the importance of early detection and accurate imaging to guide appropriate management, including wide-margin surgical excision. Despite the successful removal of the tumor in this patient, the potential for local recurrence and metastasis underscores the need for ongoing surveillance and careful consideration of adjuvant therapies, particularly in elderly patients with comorbidities. As liposarcoma's diverse subtypes exhibit varying clinical behaviors, further research is essential to enhance our understanding and improve clinical outcomes for patients with this uncommon condition.

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