folia medica

Folia Medica 66(5):749-754
DOI: 10.3897/folmed.66.e125471

Case Report

Giant Dorsal Liposarcoma in an Elderly Man: a Case Report

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Received: 16 April 2024 ♦ **Accepted:** 26 June 2024 ♦ **Published:** 31 October 2024

Citation: Arias-Mariño D, Rojas-Urrea A, Herrera-Salcedo D, García-Agudelo L. Giant dorsal liposarcoma in an elderly man: a case report. Folia Med (Plovdiv) 2024;66(5):749-754. doi: 10.3897/folmed.66.e125471

Abstract

Liposarcoma is a malignant mesenchymal tumor defined as a rare cancer due to its low incidence rate. The most common location of liposarcoma is in the extremities, followed by retroperitoneum, with the bone and trunk being the less frequent presentations. The most common histological subtype is well-differentiated liposarcoma, which has the highest local recurrence, is slow-growing, and is insensitive to chemo and radiotherapy. We present the case of a 62-year-old male patient with a 10-year-growth mass in the dorsal region. A computed tomography scan showed a huge mass in the right dorsal space with a malignant lipomatous appearance, which required surgical removal of a mass of 2,800 g.

Keywords

histology, liposarcoma, recurrence, surgery

INTRODUCTION

Because of its low prevalence, liposarcoma, a malignant mesenchymal tumor, is classified as a rare cancer. Little is known about the pertinent risk factors, management, and treatment for this malignancy because it has not been thoroughly studied. Even yet, a rare cancer like liposarcoma increases the burden of disease from this cause by contributing to overall cancer outcomes.[1]

This cancer can be found in any part of the body[1]; however, the extremities are the most common site of presentation[1,2], followed by retroperitoneal presentation[3]. Bone presentation is less frequent, as well as the trunk.[4]

Liposarcoma has four different subtypes according to the histological and molecular findings: well-differentiated liposarcoma (WDLPS), which is the most common subtype, has the highest local recurrence, is slow-growing, and is insensitive to chemo and radiotherapy. Dedifferentiated liposarcoma (DDLPS) is a more aggressive and high-grade disease that has a high death rate due to local and metastatic recurrence. Both WDLPS and DDLPS show repeated amplifications in chromosome 12.[5] The other subtypes are myxoid liposarcoma (MLPS) and pleomorphic liposarcoma (PLPS). The MLPS normally develops in the proximal extremities, especially the thigh. The MLPS is more chemo- and radiosensitive than the WDLPS and DDLPS. The PLPS is an aggressive liposarcoma that can be found in the limbs, the trunk, or the retroperitoneum. It has a high rate of metastasis and usually does not respond to chemotherapy or radiation therapy.[5] Some authors reported a fifth liposarcoma subtype, a mixed liposarcoma.[3]

There are three different CT patterns for liposarcomas: solid, mixed, and pseudocystic. A computed tomography (CT) scan can tell the difference between a lipoma and a liposarcoma because the liposarcoma usually has inhomogeneous attenuation, poor definition, infiltration or even invasion of nearby structures, and calcification.[2] Magnetic resonance imaging (MRI) is also useful in this differentiation, especially in neurovascular and synovial lipomatous

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lesions.[6] We present the case of a 62-year-old male patient with a 10-year-growth mass in the dorsal region.

CASE REPORT

A 62-year-old man from a distant rural area presented to the emergency department due to a 10-year-growth mass in the dorsal region and a relevant background of two lipoma resections in the same area four years ago. Vital signs showed 78 beats per minute, 17 breaths per minute, a blood pressure of 120/70 mmHg, a weight of 79 kg, a height of 167 cm and a body mass index (BMI) of 28.3 kg/m^2, classified as overweight. The first physical examination showed a right dorsal giant mass of approximately 18×30 cm extending from the vertebral region to the right anterior axillary line horizontally, with well-defined borders and being painful and soft to touch. Also, the patient presented a recent thorax CT scan showing a huge mass in the right dorsal space ***(Fig. 1)****.*

With these initial findings, the medical team considered a tumor with a malignant lipomatous appearance. Due to functional limitation produced by the mass and the fact that the patient lives in a rural area, with difficult access to health services and a high risk of losing continuity of treatment, the patient was carried to a surgical procedure where we identified a giant mass with a lipomatous appearance with the following limits: the anterior border, the retroscapular space, and the right subscapularis muscle; the medial border, the external intercostal muscles, the serratus and trapezius muscles; the lateral border, the anterior serratus, the latissimus dorsi, and the greater and lesser rhomboids muscles; as well as the supraspinatus and infraspinatus muscles to their insertions in the axillary region ***(Fig. 2)****. Finally, a mass of 2,800 g was removed* ***(Fig. 3)****, leaving an empty space in the dorsal*

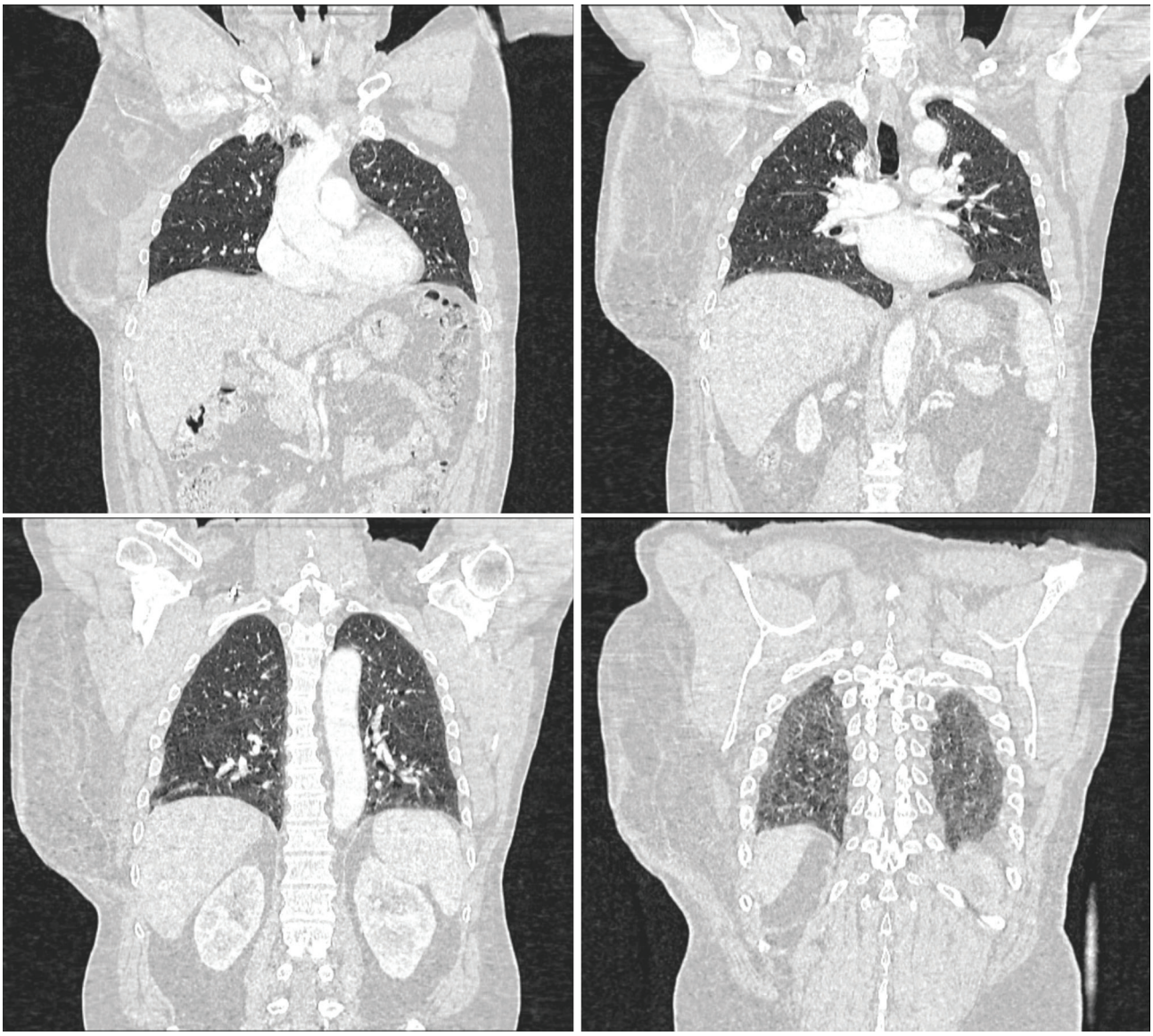

Figure 1. Computed tomography showing a mass in the right dorsal space.

Figure 2. Wide longitudinal incision over the right dorsal mass.

Figure 3. The removed mass in a surgical tray.

*region **(Fig. 4)**, requiring a Hemovac drain for fluid control in this area.*

*After the procedure, the patient was hospitalized for post-surgical care, analgesia, and antibiotic coverage. The pathology report concluded an atypical lipomatous tumor/well-differentiated liposarcoma in proximity of the section borders marked with India ink **(Fig. 5)**. The patient presented adequate clinical evolution and good pain control, and he was discharged from the hospital with orders for urgent assessment by oncology considering the high rate of relapse. Unfortunately, he had a surgical wound dehiscence with a wide coverage defect **(Fig. 6)**, and the service continued to follow up on him for more than a month before losing contact with the patient.*

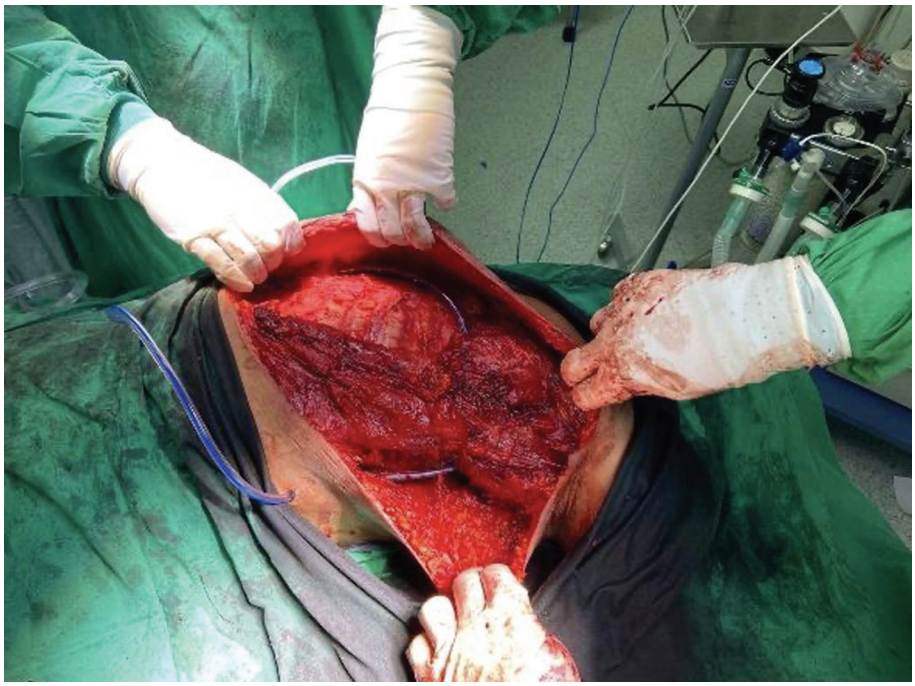

Figure 4. A large empty space in the right dorsal region after resection of the mass.

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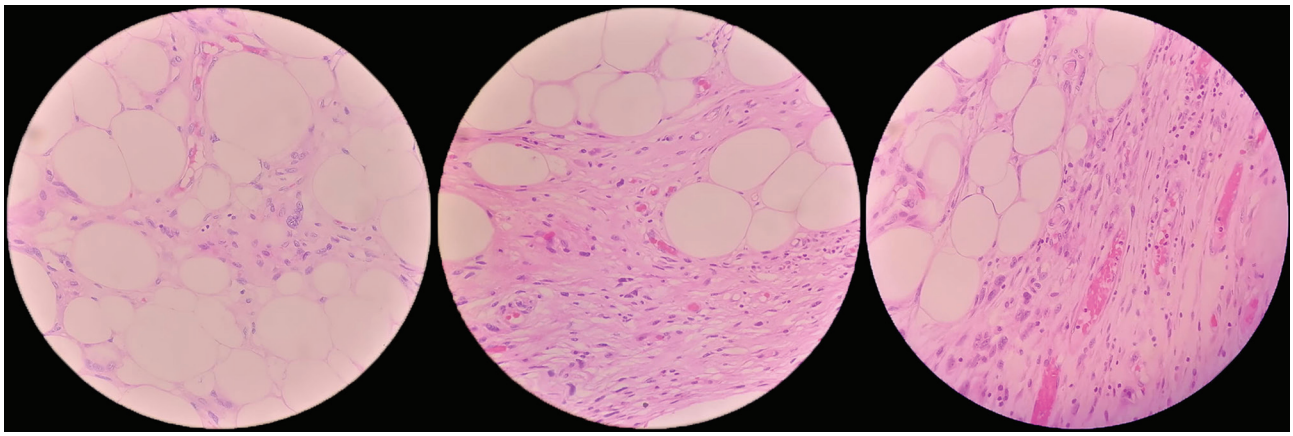

Figure 5. Histopathologic imaging of tumor samples using hematoxylin-eosin staining reported the presence of atypical cells and a few lipoblasts.

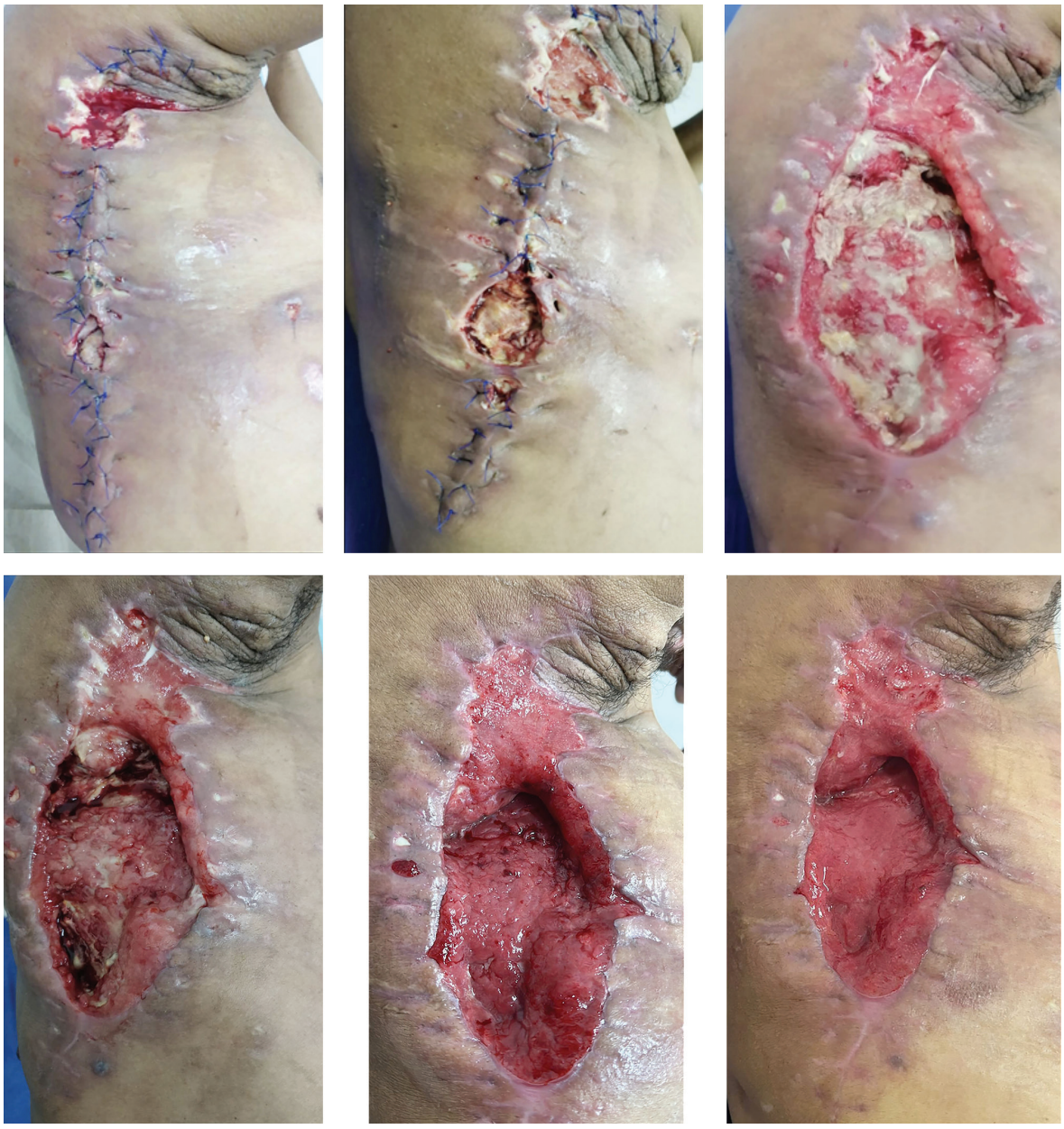

Figure 6. Evolution of surgical wound dehiscence.

DISCUSSION

The risk factors for soft tissue sarcomas remain unclear, but the American Cancer Society (ACS) has linked the development of these tumors to radiation, family cancer syndrome, lymphatic system changes, and exposure to harmful chemicals.[7] There were no discernible risk factors for our patient; he presented a background of previous lipoma resections; however, lipomas are benign forms and do not evolve to liposarcomas. Assuming his job is in a rural area performing mostly agricultural activities, the radiation exposure, mostly to sunlight and exposure to toxic chemicals such as fertilizers and herbicides can be related according to the risk factors identified by the ACS.

Liposarcoma management is a challenge for both clinicians and surgeons. It is necessary to characterize the type of liposarcoma in order to determine the best therapeutic approach. After this initial classification and considering local or metastatic recurrence depending on each subtype, management will be selected; however, definitive treatment is difficult considering relapses.[3,7] Early surgical treatment and follow-up by oncology are crucial to preventing unfavorable outcomes.

Some authors suggested a five-year local recurrence rate of 66% for retroperitoneal liposarcomas, along with an overall survival rate of 54%.[8] For WDLPS, local recurrence is frequent, and this event was experienced by the patient; he had a relevant background of two previous surgical procedures to remove the mass, the latest four years ago. Waters et al. estimated that WDLPS in a deep central localization had a 5-year event-free survival of 59.0% while DDLPS had 11.9% in the same localization.[9]

There are some case reports informing the necessity of multiple surgical procedures to manage recurrent liposarcomas, including mediastinal location[10] and retroperitoneal ubication[11]. In our case, previous surgical procedures could not prevent this new relapse; however, considering the mass ubication, there was no need to remove adjacent organs, which would limit the prognosis, as usually happens with retroperitoneal liposarcomas.[12] Nevertheless, an important coverage defect was generated, requiring specialized wound management to facilitate healing and prevent infection.

Due to the high resistance to systemic therapy in the WDLPS, surgical resection is the standard management for recurrence disease. Some recommendations have been published for WDLPS and DDLPS in the extremities and retroperitoneum.[3] However, little is known about liposarcoma trunk presentation. Given the limited evidence, our patient required surgical resection and a future oncology appointment in order to prevent relapses. In addition, tumor location appears to influence the survival rate of patients as well as the residual (R) tumor classification. The higher the R, the lower the median survival decrease.[3]

Due to the WDLPS's chemo-insensibility, other therapeutics are required to improve the prognosis.[13] The targets being studied for their role in pathogenesis include murine double minute type 2 (MDM2), cyclin-dependent kinase 4 (CDK4) inhibitors, programmed cell death protein 1 (PD-1) immunotargets, exportin (XPO1) inhibitors, and peroxisome proliferator-activated receptor gamma (PRARy) agonists. Understanding the role of these targets will help define potential therapeutic options.[13] Despite all the advances, our understanding of the role of biomarkers is not completely defined.

CONCLUSIONS

Liposarcomas are rare malignant tumors with serious anatomical complications considering their large size, location in areas of difficult access, secondary coverage defects, and local and metastatic relapses that make long-term treatment difficult. WDLPS are known for their insensitivity to chemotherapy and radiotherapy, so surgical management remains the cornerstone of treatment.

Ethics clearance

Written informed consent to publish patient information was provided by the patient.

Conflict of Interest

The authors have no conflicts of interest to declare.

Financial disclosure

The authors declare that this study has received no financial support.

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Гигантская дорсальная липосаркома у пожилого мужчины: описание случая

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Дата получения: 16 апреля 2024 г. ♦ **Дата приемки:** 26 июня 2024 г. ♦ **Дата публикации:** 31 октября 2024 г.

Образец цитирования: Arias-Mariño D, Rojas-Urrea A, Herrera-Salcedo D, García-Agudelo L. Giant dorsal liposarcoma in an elderly man: a case report. Folia Med (Plovdiv) 2024;66(5):749-754. doi: 10.3897/folmed.66.e125471

Резюме

Липосаркома – злокачественная мезенхимальная опухоль, определяемая как редкий рак из-за низкой частоты возникновения. Наиболее часто липосаркома локализуется в конечностях, за ними следует забрюшинное пространство, а кости и туловище встречаются реже. Наиболее распространённым гистологическим подтипом является высокодифференцированная липосаркома, которая имеет самый высокий местный рецидив, медленно растёт и нечувствительна к химио- и радиотерапии. Мы представляем случай 62-летнего мужчины с 10-летней массой роста в области спины. Компьютерная томография показала огромную массу в правом дорсальном пространстве со злокачественным липоматозным видом, что потребовало хирургического удаления массы весом 2800 g.

Ключевые слова

гистология, липосаркома, рецидив, хирургия