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Soft-Tissue Sarcoma of the left Thigh: Case presentation

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CASE STUDY

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ABSTRACT

Soft tissue sarcoma is a type of cancer that originates from mesenchymal tissue and typically displays symptoms in later stages. Undifferentiated pleomorphic sarcoma is a subtype of soft tissue sarcoma that can be found in any body part. This case study discusses a 62-year-old patient diagnosed with pleomorphic sarcoma in the thigh. Soft tissue tumors can pose a problem if they grow and become malignant. Various examinations are conducted to diagnose sarcoma, including physical examination, ultrasound, MRI, or CT scan. A biopsy is necessary to make a definitive diagnosis of sarcoma and provides information about the subtype of sarcoma and its grade. The treatment approach for bone malignancies typically involves excision with wide margins, chemotherapy, and radiation therapy. Radical extirpation of the tumor is critical for the cure of soft tissue sarcomas in the extremities

Key Words

Soft-Tissue Sarcoma, Ultrasound, MRI, or CT Scan, Left Thigh.

Introduction

Soft tissue sarcoma is an uncommon type of cancer that tends to exhibit signs and symptoms in the later stages of the disease [1]. This type of cancer originates from mesenchymal tissue, which includes a variety of structures such as muscles, blood vessels, nerves, fat, bone, cartilage, and deep skin tissue. Undifferentiated pleomorphic sarcoma, formerly known as malignant fibrous histiocytoma, is a particular subtype of soft tissue sarcoma that can develop in any part of the body, but is more commonly found in the extremities, particularly the lower limbs, or in the retro peritoneum [2]. In this case, we will be discussing a 62-year-old patient who was diagnosed with pleomorphic sarcoma in their thigh.

Case presentation

A 62-year-old patient with no notable medical history presented with a neglected mass on the posterior aspect of the left thigh, which had been progressively and rapidly increasing in size for 6 months. Despite this, the patient refused medical consultation until being admitted to the orthopaedic traumatology department of Avicenne Hospital in Rabat. On examination, the mass was red, warm, and oozing, measuring 139x44mm. Palpation revealed a hard, lobulated, well-defined mass that was slightly painful (Figure 1). An MRI was performed, which showed a lesion involving the soft tissues of the posterior and lateral aspects of the left thigh (Figure 2). A biopsy was subsequently performed. However, a week later, the patient presented to the emergency department in a state of haemorrhagic shock with a blood pressure of 80/50 mmHg and a heart rate of 120 bpm. Laboratory tests revealed anemia with a haemoglobin level of 6 g/dL and leukocytosis with a count of 15,000 cells/mm3. After stabilizing the patient's hemodynamic status and performing pre-anaesthetic preparation, the patient was admitted to the operating room for removal of the mass (figure 4). The pathological examination of the surgical specimen confirmed the presence of a pleomorphic sarcoma.

Discussion

Soft-tissue sarcomas can be found in various regions of the body, with the lower extremities being the most common location (40 per cent), followed by the upper extremities (20

Per cent), trunk (19 Per cent), retroperitoneal area (13 Per cent), and head and neck (8 Per cent) [3,4].

Although soft tissue tumors generally have a slow rate of growth, they can pose a problem if they grow to a size that causes patient discomfort or become malignant. As with any uncontrolled cell growth, there is always a risk of malignancy. Slow growth does not guarantee that a tumor is benign, and while only one in every 200 soft tissue tumors is malignant, a slow-growing tumor is not necessarily benign [5-7]. Subcutaneous tumors are commonly discovered through self-palpation, but reported symptom duration and progression may not be reliable.

To diagnose sarcoma, various examinations are conducted. A physician initially performs a physical examination to assess the medical signs and symptoms of the condition. An ultrasound may be utilized to detect any masses. Next, an MRI (considered the gold standard) or a CT scan is typically performed to determine the precise size, shape, and extent of the sarcoma's involvement with surrounding tissue.

Although imaging procedures alone cannot accurately classify a tumor as benign or malignant, certain features may indicate a higher likelihood of a later diagnosis of soft tissue sarcoma. These features include a diameter greater than 5 cm, an increase in size, pain associated with the swelling, and a deep location of the tumor [8,9]. Any swelling that displays one or more of these characteristics should be considered and treated as malignant until histological examination confirms otherwise. It has been observed that 86 Per cent of tumors that meet all of these criteria are malignant.

A biopsy is necessary to make a definitive diagnosis of sarcoma. The tissue obtained from the biopsy provides information about the subtype of sarcoma and its grade. The patient's prognosis is heavily influenced by the histological grade of the sarcoma. Those with high-grade sarcoma have a recurrence rate of 79 Per cent, and 60 Per cent of those patients die from the disease.

To properly diagnose soft tissue sarcoma, it is necessary to refer the patient to a medical center that offers comprehensive interdisciplinary care [10]. Upon arrival, staging will be completed and a multimodal treatment plan will be discussed.

The treatment approach for bone malignancies typically involves three components. Firstly, excision with wide margins is essential. Depending on the tumor grade, local invasion, and metastasis, the remaining treatment may involve chemotherapy and radiation therapy. It is crucial to carefully evaluate lymph node involvement; not only for dissection but also to ensure that there has been no spread. Recurrence is common, occurring in approximately half of the patients, particularly in the first two years after treatment. Several factors increase the risk of recurrence, such as a tumor size greater than 5 cm, high-grade histology, deep anatomical location of the tumor, and poor resection of the original tumor [17,2].

Radical extirpation of the tumor is critical for the cure of soft tissue sarcomas in the extremities [11,16]. The most commonly used technique for tumor removal is called wide resection, which involves removing a significant amount of healthy tissue surrounding the tumor, with safety margins of 4 to 5 cm on the sides and 1 to 2 cm deep to the tumor [12-14]. In some cases, amputation may still be necessary, particularly if large vessels or nerves near the trunk are affected. However, the decision to amputate should only be made after carefully considering potential reconstructive options, such as vessel and nerve interposition, and plastic surgery techniques like the fillet flap can be used to maximize residual stump length and function [15].

Conclusion

In conclusion, soft tissue sarcomas can occur in various regions of the body and may not display symptoms until they have grown to a significant size. Imaging tests alone cannot accurately diagnose the condition, and a biopsy is necessary to confirm the diagnosis and determine the subtype and grade of the tumor. The treatment approach for bone malignancies involves excision with wide margins, and chemotherapy and radiation therapy may be necessary depending on the tumour’s grade and stage. It is crucial to refer patients to medical centres that offer comprehensive interdisciplinary care to ensure proper diagnosis and treatment. Radical extirpation of the tumor is critical for a cure, and reconstructive options should be considered before deciding on amputation.

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Ethics approval and consent to participate

Ethical approval was not sought. Written consent was obtained from the patients.

Availability of data and materials

The datasets used and analysed during the study are available from the corresponding author.

Declaration of conflicting interest

The authors declare that there is no conflict of interest.

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Authors contributions

All authors Have read and approved the final manuscript.

Figures

Figure 1: Clinical image of the mass located on the posterior outer side of the thigh.

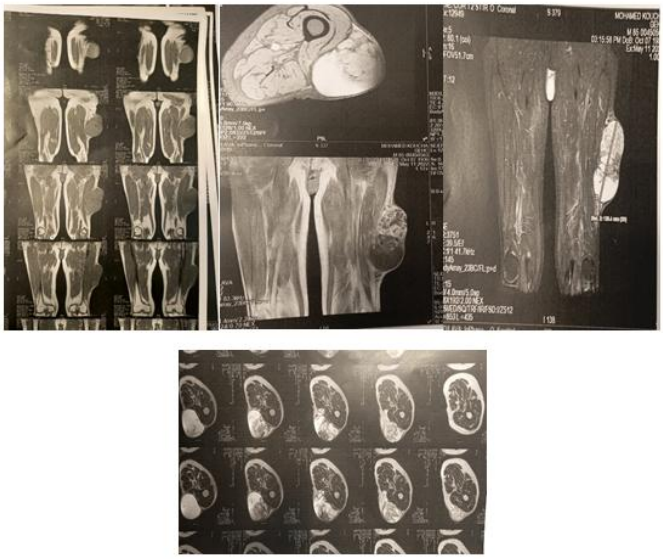

Figure 2: MRI showing a lesion in the soft tissues above the fascia of the posterior external aspect of the left thigh. It is oval-shaped with lobulated contours and well-defined margins, and has a dual component. The tissue component shows hypo-intensity in T1 and heterogeneous hyper intensity in T2 and STIR sequences without diffusion restriction, containing thick septations with enhancement after gadolinium injection. The cystic component shows intermediate T1 signal and hyper intensity in T2, measuring approximately 24x44x139mm. It compresses the lateral vastus muscle and infiltrates the biceps femoris muscle discreetly.

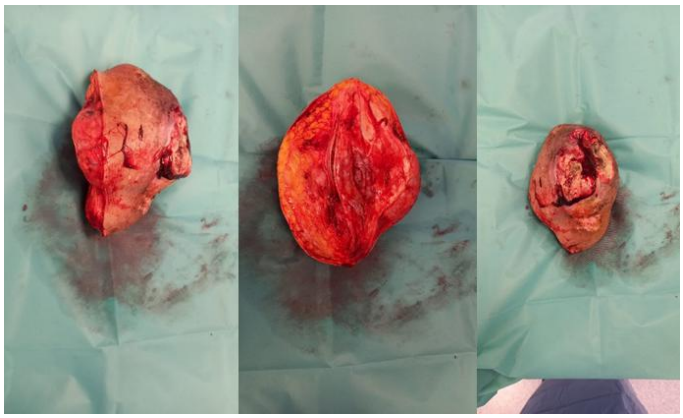

Figure 3 : Clinical image of the mass after resection.

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