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The Disguised Threat: Synovial Tumour of the Ankle Presenting as Bursitis

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Abstract

Soft tissue sarcomas (STS) of the foot and ankle are uncommon neoplasms associated with a high risk of local recurrence and metastasis. These tumors are often treated with amputation, yet the impact of this approach on patient outcomes remains unclear. The purpose of this review was to assess the risks associated with (1) disease-related death, (2) local recurrence, (3) metastasis, and (4) whether the type of surgery—amputation versus limb-sparing—affects disease-related survival. Historically, sarcomas of the foot and ankle have been treated with amputation due to the challenges in managing localized disease and preserving functional foot structure. However, the potential for limb preservation may be further complicated by unanticipated surgical excisions.

Keywords- *Extensor Digitorum Longus (EDL), Extensor Hallucis Longus (EHL), Fibrosarcoma, Leiomyosarcoma, Liposarcoma, Malignant Fibrous Histiocytoma, Synovial Sarcoma, Undifferentiated Pleomorphic Sarcoma (UPS).*

Introduction

Adult malignancies account for less than 1% of sarcomas, with only around 10% of sarcomas developing in the foot and ankle [1]. Harmless soft-tissue lesions in this region are quite common and outnumber malignant lesions [2].

Differentiating sarcomas of the foot and ankle from benign lesions can be challenging. These tumours are often painless, small, and may have been present for several months [3]. The lack of muscle around the foot and ankle can also result in fewer noticeable sarcomas, which may exist in smaller sizes compared to proximal limb sarcomas. Unplanned surgical removal frequently occurs when tumours are excised inappropriately, highlighting the importance of thorough preoperative assessment and the need for obtaining tumour-free margins [4, 5]. Such inadequate management has been linked to poorer outcomes and a higher rate of local recurrence [6-8].

Post-surgery, balancing limb-preserving surgery with amputation can also pose challenges [9]. Additionally, chemotherapy and radiotherapy play significant roles in controlling regional disease [10].

Materials and Methods

Here presenting a case of Soft tissue sarcoma of left Ankle which initially looked like bursitis and also its clinical presentation and Surgical Management in Study.

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Case Report

A female patient 45 years of age was bothered with swelling over the left ankle for about two months when it was small. Its size now is 5cm×6cm accompanied by pain for two weeks. There was no history of trauma discharge, fever, numbness, paraesthesia difficulty, limited motion, and loss of weight or appetite. There is an account of similar swelling over the left ankle about a year back for which she was treated with incision, drainage, and oral antibiotics. She has been hypertensive for 3 years but was not on any medications. Puerperal sterilization history is completed.

Figure 1. Shows Preoperative Image of Left Ankle with Tumour

Local Examination: Inspection revealed a swelling measuring 7 cm × 5 cm over the anterior part of the ankle. The overlying skin shows a scar, and the swelling appears stretched and shiny, with local hair loss. The swelling extends 40 cm from the tibial tuberosity and 6 cm from the medial malleolus, with poorly defined borders. There are no visible pulsations or dilated veins (Figure: 1).

Palpation: The medial aspect of the swelling is tender and cystic, with restricted mobility in all directions. However, the range of motion is free, showing no restriction. Peripheral pulses are palpable.

Left Inguinal Lymph Nodes: Nodes measuring 0.5 cm × 0.5 cm are palpable, firm, and non-tender.

MRI Findings: An MRI identified a heterogeneous, lobulated soft tissue solid mass lesion in the anterior part of the ankle joint, predominantly located laterally in the soft tissue plane, with no extension into the tibiotalar joint. There is no infiltration of the extensor digitorum longus (EDL), extensor hallucis longus (EHL), or tibialis tendon. Loss of the fat plane is observed with the EDL at the ankle joint level in the dorsum of the foot, while the fat plane with the anterior tibial artery is well-preserved (Figure: 2).

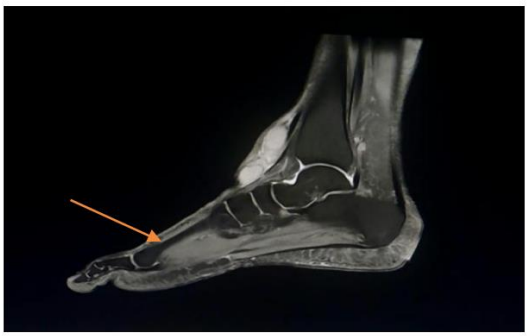

Figure 2. Shows MRI Left Ankle Joint with Contrast with Tumour, Lateral View (Yellow Arrow)

A wide local excision was performed with 1 cm margins, and the specimen was sent for a frozen section (Figure 3). The floor of the excised specimen tested positive for tumor cells, necessitating further excision that included the periosteum. The re-excised tissue was sent for another frozen section, which confirmed that all tumor margins and deeper tissue were tumor-free.

Intraoperative Findings: (A) A tumor measuring 7 cm × 5 cm was observed, originating from the extensor retinaculum (Figures 4).
(B) The saphenous vein was identified, and the extensor digitorum longus, extensor hallucis longus, and tibialis anterior tendons were noted to be unaffected.
(C) The dorsalis pedis was also not involved.

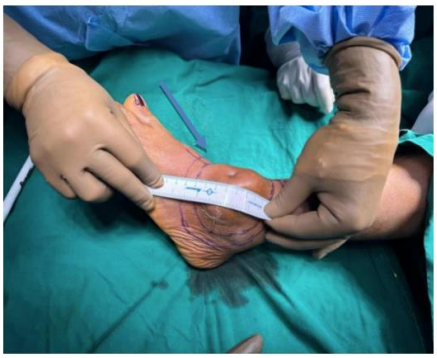

Figure 3. Showing Pre-Operative Image WITH 1cm Margin from the Tumour (Blue Arrow)

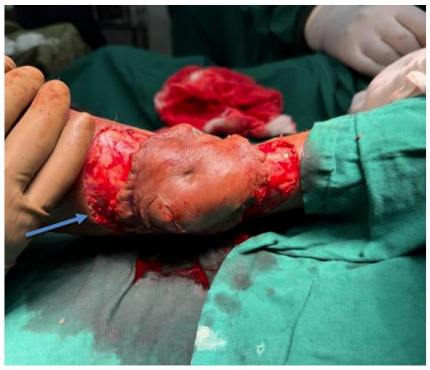

Figure 4. Shows Intraoperative Images with Excised Tumour (Blue Arrow)

(D) The tumour was noted to be extending into the joint space (Figure 5). After confirming that the margins were clear, a flap cover was planned. Tumour was removed in toto (Figure 7). A free anterolateral thigh (ALT) flap was attempted on the right side of the leg due to insufficient flow from the dorsalis pedis. However, the flap was abandoned and

converted to a thick graft, which was then fixed over the recipient site (Figure 6). A sterile dressing was applied.

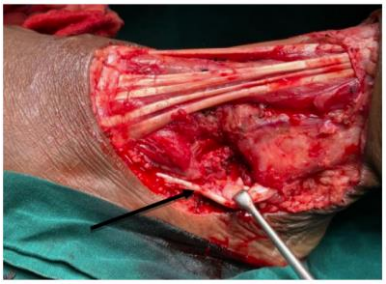

Figure 5. Shows Postoperative Images of Tumour Base Post Excision (Black Arrow)

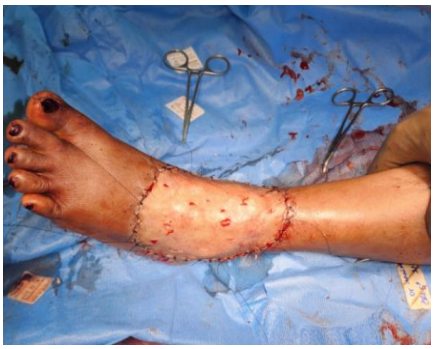

Figure 6. Shows Post Operative Image with Split Skin Graft

Figure 7. Shows Excised Portion of the Tumour with Inner and Outer Surface

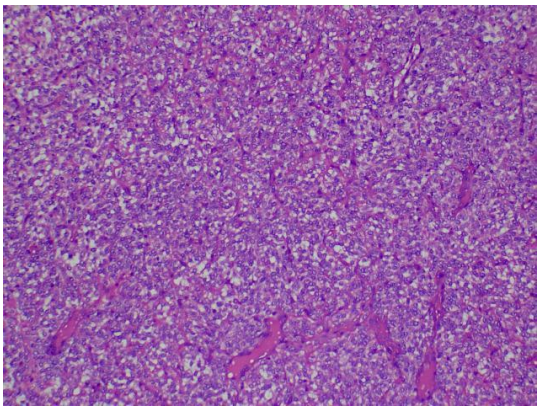

Figure 8. Showing Monophasic Appearance of Predominantly Spindle Cells

Histopathological Finding: Showed high grade pT2N soft tissue sarcoma and left dorsum of foot. All margins were free of tumour and the closest is resected margin of 2mm.

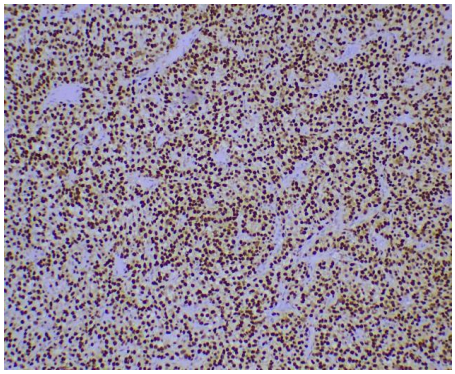

Figure 9. Showing TLE Positive on Immunoistochemistry

Immunohistochemistry: Showed Synovial Sarcoma (BCL -2, EMA - strong cytoplasm positivity, TLE-1 high nuclear positivity), CD-34, S100 and myogenin negative) (Figure 8, Figure 9).

Patient was further given chemotherapy as advised by oncologist.

Discussion

The occurrence of metastasis after treatment was a significant predictor of mortality, aligning with previously published data. It is assumed that soft tissue sarcomas (STS) are likely to spread following treatment, particularly in cases involving marginal excision, local recurrence at referral, and non-tumor-centered surgery.

Other studies reporting on overall survival rates specific to STS of the foot and ankle include: Talbert et al., who found a 5-year survival rate of 80%; Temple et al., with a 4-year rate of 71%; Selch et al., reporting 83% at 3 years; and Thacker et al., who reported a 5-year survival rate of 78% [7, 9, 10, 12].

Histological grade currently plays an important predictive role and serves as a reliable indicator of metastatic risk for adults with STS. Therefore, it should be included in the pathology report, detailing the histological type and subtype, tumor size, and surgical margins. Its correlation with contemporary treatment outcomes is crucial and should be considered alongside radiological factors related to microbiopsy. Recent advancements in molecular genetics and targeted therapy may also influence grading and possibly supersede traditional molecular factors [11].

Foot and ankle sarcomas present complex surgical challenges, often appearing clinically benign. Insufficient surgical interventions at non-tumor centers are becoming common, complicating their management. The goal of this study was to investigate and analyze the predictors of recurrence and survival [13].

Conclusion

Soft tissue sarcomas are a heterogeneous group of rare tumors, with most being sporadic. Managing these varied tumors is complex and depends on factors such as the tumor's location, situation, and histological type. The primary site of metastasis is typically the lungs, which can occur within two to three years after therapy completion. However, there has been progress in understanding the molecular nature of these tumors. This knowledge may soon translate into molecular-targeted treatments that will become part of standard treatment plans, benefiting patients with soft tissue sarcomas.

Results

Soft tissue sarcomas of the foot and ankle appear to have a poorer prognosis compared to bone sarcomas (BSs). It is advisable to refer patients to a specialized tumor center before any surgical intervention.

Conflict of Interest

There are no conflicts of interest.

Acknowledgments

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