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A Rare Case Report - Right Axillary Synovial Sarcoma

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Abstract
Synovial sarcoma is a rare and aggressive soft tissue malignancy that primarily affects adolescents and young adults. Despite its name, it does not arise from synovial tissue but rather from primitive mesenchymal cells. This malignancy commonly presents as a painless, slow-growing mass in the extremities, particularly around large joints, but can occur in various locations throughout the body. Diagnosis of synovial sarcoma relies on a combination of clinical evaluation, imaging studies, and histopathological examination, with characteristic features including a biphasic pattern of spindle cells and epithelial cells. Enhanced awareness among healthcare professionals and the public is crucial for early detection and optimal management of synovial sarcoma, ultimately improving patient outcomes and quality of life.(1)

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I. Introduction

Synovial sarcoma is a rare and aggressive soft tissue malignancy, first described by Simon in 1865 as a tumor resembling synovial tissue despite its origin from mesenchymal cells (2). Despite its name, it primarily occurs in soft tissues, with the extremities, especially around large joints, being the most common site (3). This malignancy typically affects adolescents and young adults, although it can occur at any age.

Despite its rarity, synovial sarcoma poses significant challenges in diagnosis and treatment due to its aggressive nature and propensity for recurrence and metastasis (4). The histopathological hallmark of synovial sarcoma is a biphasic pattern consisting of spindle cells and epithelial cells arranged in a variety of architectural patterns (5).

The diagnosis of synovial sarcoma relies on a combination of clinical evaluation, imaging studies, and histopathological examination, with molecular testing for the characteristic SYT-SSX gene fusion being confirmatory (6). Treatment typically involves surgical resection with wide margins to achieve complete tumor removal, followed by adjuvant therapies such as radiation and chemotherapy (7).

Despite aggressive treatment approaches, synovial sarcoma often recurs locally and metastasizes to distant sites, leading to poor outcomes and survival rates (8). Recent advancements in molecular biology and targeted therapies hold promise for improving treatment strategies and outcomes (9).

II. Case History

- A 9 years old female child came with chief complaints of pain in right axillary region for 8 months, swelling in right axilla for 3 months, restriction of movements of right upper limb for 3 months. No history of fever, loss of weight or loss of appetite. No previous history of similar complaints. No family history of similar complaints in the past. No history of tuberculosis.
- Vitals: Pulse rate: 65/ minute, BP: 100/60 mmHg, SpO2: 98%@ room air.

- Routine blood investigations were within normal range.
- On examination A well-defined, smooth, fluctuant swelling of size ~ 7 x 4 cm is noted in the right axillary region.
- Proceeded with ultrasound and MRI.
- Later USG guided FNAC was done and patient was posted for excision biopsy.
- Excision biopsy showed feature suggestive of Synovial sarcoma

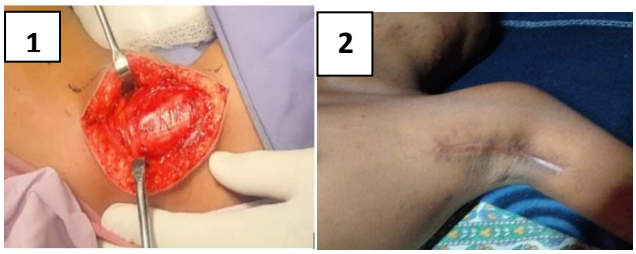

Fig 1 shows intraoperative image of Extraosseous Ewing sarcoma excision biopsy
Fig 2 shows post operative image showing healed operative scar
Source: Pondicherry institute of medical sciences.

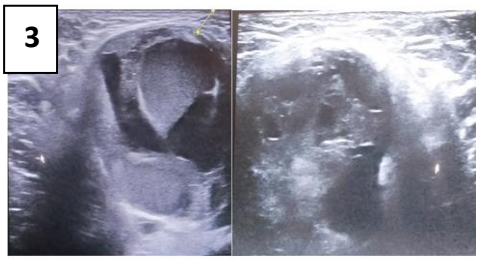

Fig 3: A heterogeneously hypoechoic well-defined lesion with densely packed internal echoes in subcutaneous plane of right axillary region.
Source: Pondicherry institute of medical sciences.

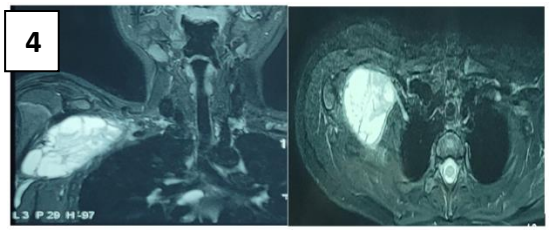

Fig 3 - Well-defined lobulated, T2/STIR hyperintense mass lesion with internal septations is noted in the right axilla.
Source: Pondicherry institute of medical sciences.

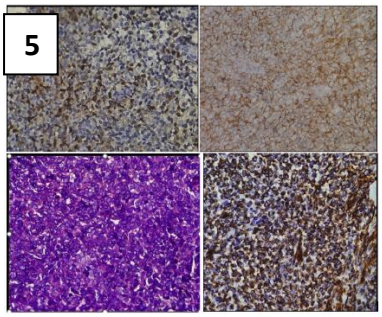

Fig 4: Cyclin D positive(left upper corner),CD99 diffuse and membraneous positivity(right upper corner), Hematoxylin and eosin: small round blue cells(left lower corner), Vimentin positive (right lower corner).
Source: Pondicherry institute of medical sciences.

III. Discussion

Synovial sarcoma commonly presents as a painless, slow-growing mass in the extremities, particularly around large joints such as the knee or ankle (6). However, it can also occur in other anatomical locations, including the head and neck, trunk, and abdominal wall. The tumor often has an insidious onset, leading to delayed diagnosis and treatment initiation.

In our case, Synovial sarcoma was noted on the right side of the chest wall.

Around 75% patients present with rapidly growing painless mass, 30% patients exhibiting distant metastasis at the time of diagnosis. The tumor grows locally without any alarming inflammatory signs. This was the case with our patient, the tumor increased in size with time, without significant inflammatory signs.

The golden standard of treatment is Surgery. Surgical resection with wide margins to achieve complete tumor excision (10). Adjuvant therapies, including radiation therapy and chemotherapy, may be employed depending on the tumor size, location, and histological subtype. However, synovial sarcoma often demonstrates resistance to conventional chemotherapy regimens, highlighting the need for novel therapeutic approaches.

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