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A REVIEW OF ONE YEAR CLINICAL EXPERIENCE OF SOFT TISSUE SARCOMA IN A TERTIARY CARE CENTRE OF NORTH-EAST INDIA

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Abstract

Background: Sarcomas are rare and heterogeneous group of malignant tumour of mesenchymal origin comprises of less than 1% of all adult and 15% of paediatric malignancies. There are more than 80 histological types and subtypes of which approximately 75% of new cases arise from soft tissue and rest arise from bone. **Materials and Methods:** This prospective study was conducted in Assam Medical College and Hospital, Dibrugarh from December 2022 to November 2023. A detailed history of cases with prior informed consent was taken and appropriate investigations such as routine blood investigations, USG of limb, MRI, core needle biopsy was done. Patients were followed up with operative intervention, chemotherapy and radiotherapy and post-operative complications, if any. **Results:** The study that out of 40 cases, 26 (65%) cases were female and the rest 14 (35%) cases were male. Majority of the patients presented with soft tissue sarcoma involving lower extremities (57.5%) followed by upper extremities (30%), trunk (7.5%), retroperitoneum (2%). The most common type of tumour in males was epitheliod type (10%) and in female was desmoid type (22.5%). The majority of patients underwent wide local excision (35%). **Conclusion:** Treatment of soft tissue sarcoma of extremities requires proper planning. Plan of possible surgery should be done before biopsy with curative intent and limb sparing in mind. Adequate resection margin should be ensured during surgery to prevent recurrences. Adjuvant RT will not rescue inadequate resection. Ultimate goal should be to increase survival, decrease local recurrence, maximize limb function and decrease morbidity.

Keywords: Soft tissue sarcoma, North- East India

Introduction

Sarcomas are a rare and heterogeneous group of malignant tumors of mesenchymal origin which comprise < 1 % of all adult malignancies and 7% of all pediatric malignancies [1]. Approximately 75 % of new cases of sarcoma originate from soft tissue and the rest originate from bone [2]. The 5 year survival is 50 % in intermediate and high grade sarcoma after

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curative resection [3].There are more than 80 histological types and subtypes of soft tissue sarcoma. The median age of presentation of soft tissue sarcoma is 58 years. The common route of metastasis is hematogenous with only 2-3 % cases having lymphatic spread [4].

The cornerstone of treatment of non-metastatic soft tissue sarcoma is complete resection of the tumour with a tumour free margin [5]. Amputation was common in the past, whereas current clinical practice entails limb-sparing resections in the majority of patients, without compromising survival [6]. Adjuvant radiotherapy and chemotherapy (for metastatic disease) may also have a role in the treatment of selected patients [7]. This article focuses on STS and highlights the importance of multidisciplinary management by elaborating on the available evidence supporting the use of different treatment modalities, including surgery, chemotherapy and radiation.

Materials and Methods

The present study was a prospective study conducted at the Department of General Surgery, Assam Medical College and Hospital, Dibrugarh, Assam after taking the ethical committee approval. The time period of study was from December 2022 to November 2023. A written consent was obtained from all the subjects in their local language.

Inclusion criteria

1. Patients who had given informed consent to participate in this study.
2. Patients diagnosed with soft tissue tumor who presented to Assam Medical College and Hospital.

Exclusion Criteria

1. Patients who did not give informed consent to participate in this study.
2. Patients below age group of 12 years.

Methodology

A detailed history with prior informed consent was taken of all the patients. A methodical examination including both general examination and local examination of the tumour was done. Evaluation of all the cases was done with adequate imaging including CECT, MRI and with metastatic workup. Core needle Biopsy was done under the guidance of ultrasound or CT. Appropriate treatment plans were formulated after discussion by a Multi-Disciplinary Team. Patients were planned for chemotherapy, radiotherapy and surgical procedures like limb sparing wide local excision according to the extend and type of soft tissue sarcoma. Patients were followed up after discharge at 1 week, 2 weeks, 1 month and 3 month. Data obtained were analyzed.

Observation and Results

A total of 40 patients presented to the OPD of Department of General Surgery during the time period of November 2022 to December 2023 in our hospital. Table 1 shows that out of 40 cases, 26 (65%) cases were female and the rest 14 (35%) cases were male. The commonest age group of presentation was 41-60 years.

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Table 1: Age wise distribution of patients

Age group	Male	Female	Total
13-20	2	2	4
21-40	3	9	12
41-60	6	10	16
≥60	3	5	8
Total	14	26	40

Figure 1: Age distribution of Soft tissue sarcoma

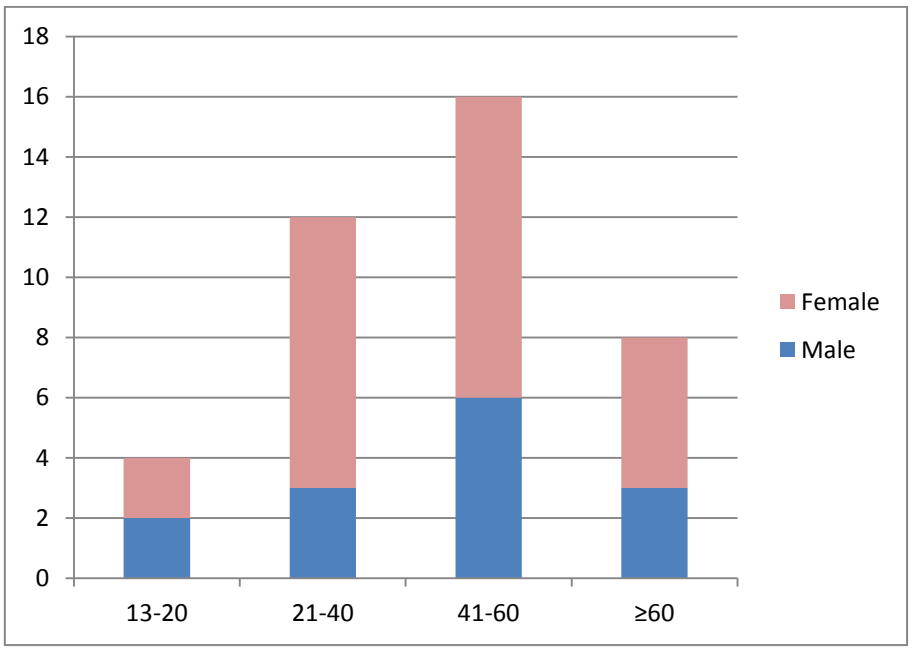

Table 2 show that majority of the patients presented with soft tissue sarcoma involving lower extremities (57.5%) followed by upper extremities (30%), trunk (7.5%) and retroperitoneum (2%).

Table 2: Site of Presentation of Soft Tissue Sarcoma

Clinical features	Number of patients	Percentage
Respiratory distress	54	7.41%
Chest pain	387	53.09%
Shock	38	5.21%
Decreased **breath sounds**	294	40.33%
Surgical emphysema	**268**	**36.76%**
Paradoxical chest movements	**8**	**1.10%**
Hemoptysis	**0**	**0.00%**

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Table 3 shows that the most common type of soft tissue sarcoma in this study was Epitheloid type (10%) followed by Desmoid (7.5%), MPNST (7.5%), synovial (5%) in males.In females, Desmoid type (22.5%) was the most common type followed by liposarcoma (12.5%). The least common type in male was liposarcoma and dermatofibrosarcoma, each of which constituted 2,5% each. In females, the least common type was epitheloid type (5%).

Table 3: Types of Soft Tissue Sarcoma

Types	Male		Female	
	No. of patients	**Percentage**	**No. of patients**	**Percentage**
Dermatofibrosarcoma	1	2.5 %	3	7.5%
MPNST	3	7.5%	4	10 %
Desmoid	3	7.5%	9	22.5%
Epitheloid	4	10%	2	5%
Synovial	2	5%	3	7.5%
Liposarcoma	1	2.5%	5	12.5%
Total	14	35%	26	65%

Table 4 shows that most of the patients presented at Stage III B (27.5%) followed by Stage III A (25%). Only 2.5% of the patients presented at Stage IA.

Table 4: Clinical Stage at diagnosis of Soft Tissue Sarcoma

Clinical Stage at diagnosis	Number	Percentage
IA	1	2.5%
IB	4	10%
II	5	12.5%
III A	10	25%
III B	11	27.5%
IV	9	22.5%

Tabe 5 shows that 35% of the patients underwent Wide local excision as a part of their treatment modality. 7 patients underwent compartmental excision, 6 patients underwent isolated muscle excision and 5 patients underwent above elbow amputation.

Table 5: Treatment modalities of Soft Tissue Sarcoma

Treatment Modality	Number	Percentage
Wide Local Excision	14	35%
Compartmental Excision	7	17.5%
Isolated Muscle Excision	6	15%

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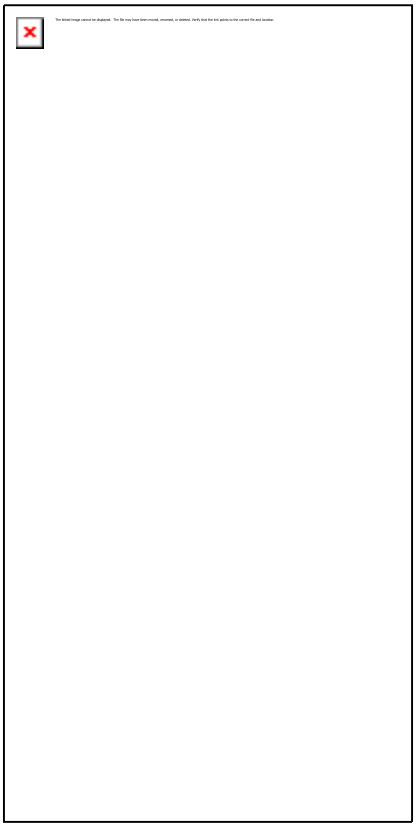
Above Elbow Amputation	5	22.5%

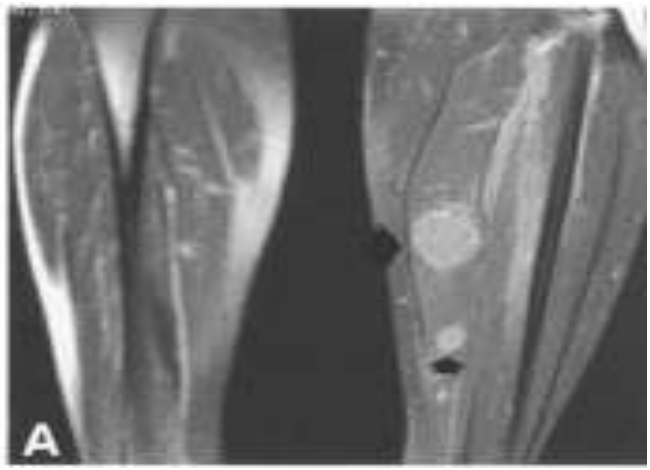
Table 6 shows that majority of the patients were given neoadjuvant chemotherapy (40%). Radiotherapy was given for 12 patients (30%) and adjuvant chemotherapy was received by 12 patients.

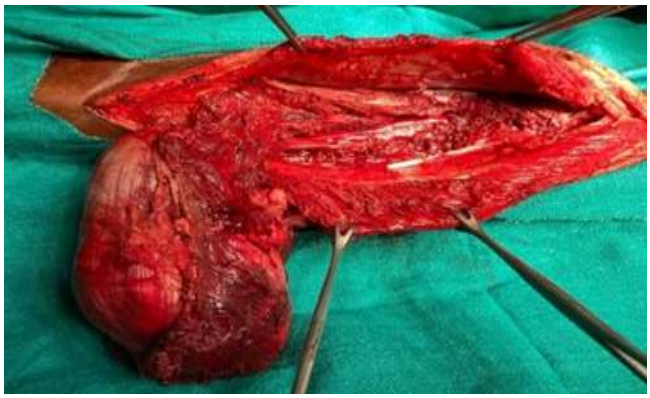
Table 6: Systemic Control of Soft Tissue Sarcoma

Systemic Control	Number	Percentage
Radiotherapy	12	30%
Neoadjuvant Chemotherapy	16	40%
Adjuvant Chemotherapy	12	30%

Figure 2: Clinical picture, imaging and compartmental excision of soft tissue sarcoma of right lower leg







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Discussion

This study is a case series of soft tissue sarcoma from a single referral center in North East India. The most recent Latin American study regarding the epidemiological profile of sarcoma patients was published by the Instituto de Enfermedades Neoplasicas ´ del Perú (INEN). They found a higher incidence of STS in females (60.8%) which was similar to our study (65%) [8]. In another study published by Corey et al. from the United States of America, the authors found the most frequent histological types to be liposarcoma followed by malignant fibrous histiocytoma (undifferentiated pleomorphic sarcoma) [9]. Burningham et al. Summarizing the results of various centers in the United States and Europe present a higher incidence of fibrosarcoma, followed by malignant tumours of the peripheral nerve sheath, which differs considerably from what was presented in our series [10]. Systemic treatments given in a neoadjuvant or adjuvant therapy in selected high-risk STS is still a topic of debate, given the low incidence of this disease, data from multicentric trials is needed. The clinical stages in a study done by García-Ortega DY et al were predominantly locally advanced stages, IIA (51.5%) and IIIB (25.9%) which was similar to our study [11].

Conclusion

Treatment of soft tissue sarcoma requires proper planning starting from imaging to biopsy to the surgery. Plan of possible surgery should be done before biopsy with curative intent and limb sparing in mind. Adequate resection margin should be ensured during surgery to prevent recurrences. Adjuvant RT will not rescue inadequate resection. The role of Adjuvant CT is controversial. Ultimate goal should be to increase survival, decrease local recurrence, maximize limb function and decrease morbidity. The epidemiological characteristics found in this study can be used to improve treatment strategies based on the incidence of the disease, ranging from timely diagnostic approaches, early referrals, personalized treatments and translational research.

Conflict of interest - There is no conflict to disclose.

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