Clinico-Pathological Features of Soft Tissue Sarcoma (STS)

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The object of the study was to review the clinico-pathological features of soft tissue sarcoma. The data of 86 patients, who were treated at Clinical Oncology Department Mayo Hospital Lahore, was collected from medical record for the year 1997-98 and analyzed for various parameters. The hospital frequency was 3.51 % of all the malignancies with male to female ratio 1.2:1. Maximum patients were aged between 16-45 years. Two cases had genetically determined neurofibromatosis. Major histopathology noted was Fibrosarcoma (20.93%) followed by Rhabdomyosarcoma and Malignant fibrous histiocytoma 16.28% and 13.95% respectively. In patients with distant metastasis lung was the most common site involved. Lower limb and head & neck were predominantly involved sites 46.51% and 16.28% respectively. Children were having mostly Rhabdomyosarcoma, young adults had Fibrosarcoma and older ones presented with Malignant Fibrous Histiocytoma. Males were having predominantly Fibrosarcoma and females Liposarcomas. It was concluded that frequency of soft tissue sarcoma in our set up is little higher and middle aged patients were affected more. Commonest histopathology was Fibrosarcoma instead of Malignant Fibrous Histiocytoma. Head and neck was second common site involved in our study. The majority of patients presented late which needs mass education about the disease detection.

Key Words:

Sarcoma of soft tissues designate those malignant neoplasms arising from mesenchymal supporting tissues other than bones and does not cover lesions arising from parenchymatous organs and visceras[1]. These supporting tissues include fat, fibrous tissue, vessels, smooth and skeletal muscles. Malignant neoplasm of the nerves is grouped, in papers, with STS as they have similar clinical manifestations, morbid anatomy, natural history and therapeutic options.

Malignant tumors of soft part account for less than 1% of all malignancies and according to American cancer society about 6000 new cases are diagnosed annually with 3100 deaths from disease[2,3,4].

Origin of sarcoma involves participation of one or more of oncogens e.g. N Ras gene in Rhabdomyosarcoma (RMS) and Fibrosarcoma (FS)[5,6]. Trauma at the site of lesion, when associated merely serves to draw attention of the patient. Genetic factors are involved in small proportion of patients. Patients with neurofibromatosis may exhibit a malignant change in one of the fibromas[7] and high frequency of desmoid tumor is noted in familial polyposis[8]. A small number of patients develop STS at the site of therapeutic irradiation[9,10,11].

Soft tissue sarcomas usually present with painless lump. Symptoms occur when the adjacent structures are pressed or infiltrated[12]. Some time's metabolic effects of certain tumors like malignant fibrous histiocytoma (MFH) cause symptoms, which disappear with removal of tumor[13].

Soft tissue sarcoma is common in older patients and least common in patients below 15 years[14,15]. STS are mainly found in extremities in adults while children have head and neck lesions. Retroperitoneal lesions are less common[16]. Fibrosarcoma once the most common histopathology[17] has been replaced by MFH followed by liposarcoma(LIPO), leiomyosarcoma(LMS) and schawnomma (SNM)[18]. Prognosis of these patients depends upon size and grade of tumor. Necrosis, mitosis and degree of differentiation appear to be the best predictor of outcome[19,20].no patient with grade I has nodal metastasis while grade II,III have 2% and 14% chances. For grade III incidence was 3% and 15% for lesions <5cm and >5cm respectively[21]. Lung is the most common site of distant metastasis and metastasis to bones, CNS and other soft tissues are less reported[22].

The object of the study was to review the clinico-pathological features of soft tissue sarcoma.

Patients and Methods

This retrospective study consisted of data of 86 patients collected during the period 1997-98. These patients were treated at Clinical Oncology (Radiotherapy) Department; Mayo Hospital Lahore affiliated with K.E.M.C Lahore. All the patients with proven biopsy were included in the study. The data of 86 patients was collected from medical record and analyzed for various parameters.

Results

Frequency

The hospital frequency of the disease was found to be 3.51% of all the malignancies. In males, the incidence was 4.03 % while in females it was 2.88%. Male to female ratio was 1.2: 1.

Age

Maximum number of the patients (48.84%) were seen between the ages 16-46 years and (36.04%) were above 46 years. Only 15.11% cases were noted in ages below 15 years.

Trauma

Although trauma is not related with the cause of soft tissue sarcoma but 13 who gave the history of trauma at the site of lesion. It could not be judged from the data that the injury inflicted was significant to cause these tumors. Out of these 13 cases, six developed LIPOS, four FS, two MFH and one RMS.

Genetics

Two cases of multiple neurofibromatosis were reported who developed malignant change in their neurofibromas.

Histopathology

Histopathology	n=	%age
Fibrosarcoma	18	20.93%
Rhabdomyosarcoma	14	16.28
Malig.Fibrous Histiocytoma	12	13.95%
Liposarcoma	11	12.79%
Neurogenic	9	10.46%
Vascular	7	8.13%
Unclassified Sarcoma	6	6.98%
Leiomyosarcoma	3	3.49%
Spindle Cell Sarcoma	3	3.49%
Lymphosarcoma	2	2.32%
Synovial Sarcoma	1	1.16%

Metastasis

Nine patients of sarcomas with distant metastasis were seen out of which eight cases had metastasis to the lung and one to liver. Two cases each of RMS and spindle cell sarcoma, one case each of FS, LIPOS, VASCULAR and UNCLASSIFIED SARCOMA were noted to metastasize.

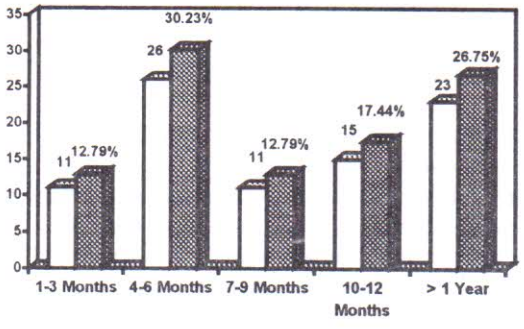
Site

Site	n=	%age
Lower Extremity	40	46.51%
Head And Neck	14	16.28%
Upper Extremity	13	15.12%
Chest Wall	9	10.47%
Abdominal Cavity	7	8.14%
Abdominal Wall	3	3.49%

Duration of Symptoms

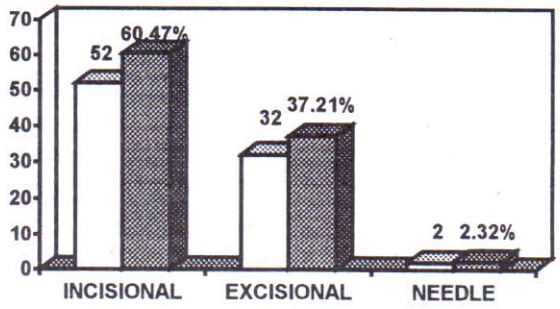
Age and Histopathology

Fibrosarcoma was the commonest histopathology (27.27%) between the ages 16-55 years followed by neurogenic cases and RMS 54.54% and 12.72%. In ages above 55 years of age presented with MFH (38.88%).



below 15 years RMS was commoner (30.76%). Patients

Biopsy



Presentation

Presentation	n=	%age
Painless Lump	49	56.98%
Painful Lump	20	23.26%
Diffuse Swelling	13	15.12%
Others	4	4.65%

Sex and Histopathology

Most common histopathology among the males was FS (22.22%) and RMS (18.52%) followed by equal frequency of neurogenic and MFH each (14.81%). In females, the commonest histopathology noted was LIPOS (21.88%), FS being second pathology.

Discussion

The reported incidence of STS in various studies abroad is less than 1% of all malignancies[2,3,4]. In current study, the frequency is 3.5%, which is little higher compared with others. Male to female ratio is exactly the same i.e. 1.2: 1[16].

In western countries, 40% of the patients were belonging to ages >55 years while disease was noted to be much common in middle aged persons in our study (42%). Lump in young adults should not be assumed benign without definite histological diagnosis[25]. For the patients below 15 years the incidence is same in all papers ie 15% [14,15].

15.12% patients gave history of trauma at site but it could not be judged from data whether it was significant to cause lesions. LIPOS and FS were noted in these patients with history of trauma. Two cases of neurofibromatosis, a genetically determined disorder developed malignant changes in their fibromas. However, these genetic lesions reported are very rare in al the studies.

Regarding histopathology, FS once reported in literature to be the commonest has been replaced by MFH in all other studies[17,18]. In present study main H/P found was FS 20.93% followed by RMS 16.28% and MFH 13.95%.

Lung was the predominant site for metastasis in all

studies including ours2.

In study by Russell et al the lower extremity was the predominant site (40%) while head and neck was the least common site involved. In current study head and neck was the second most common site (16.28%) involved after lower extremity (46.51%).

In ages below 15 years common H/P noted was RMS and this also holds true in our study[17,18]. Patients older than 55 years had MFH which was also reported to be commoner in all other studies[17,18].

In various studies the commonest presentation by the patients was painless lump[12] but in our study (56.98%) patients presented with this feature and (23.26%) had history of painful lump.

The main feature of the study was the late presentation. Our patients neglect their disease or get the treatment from "Hakeems and Quacks". In a study by Cooper[23] the same problem was discussed. Forty three percent of our patients reported during 1-6 months while 56.98% presented very late.

It is concluded that incidence of STS in our setup is relatively higher than Westren studies. Our patients are mostly middle aged instead of older ones and present with H/P of FS instead of MFH. Head and neck was second common site involved while this site is least involved in other studies. Our patients usually present late requiring mass education about the disease.

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