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PATTERN OF SOFT TISSUE TUMOURS IN A RURAL POPULATION OF CENTRAL INDIA

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ABSTRACT

Aim: To study the pattern of soft tissue tumours in a rural population of Central India.
Method: This was a prospective study, carried out in the Department of Surgery, Mahatma Gandhi Institute of Medical Sciences, Sevagram, Wardha. A total of 157 patients of soft tissue tumours who attended Surgery OPD were included in the study with informed consent. The main stay of diagnosis was clinical followed by ultrasonography and FNAC. The diagnosis was confirmed by Histopathological examination if operated and by Tru Cut biopsy if inoperable.
Conclusion: The incidence of benign soft tissue tumours in the study was 89.2% and malignant tumours were 10.8%. Males outnumbered females in both the categories i.e. benign and malignant tumours. Male: Female for benign tumours was 2.1:1 while for malignant tumours it was 1.8:1. The most common site for occurrence for benign tumours was upper limb followed by head, neck and face. Lower limb and back were the most common sites for malignant tumours followed by chest and abdominal wall and head, neck and face.

INTRODUCTION

Soft Tissue can be defined as non epithelial extra skeletal tissue of the body exclusive of the reticuloendothelial system, glia, and supporting tissue of various parenchymal organs. It is represented by the voluntary muscles, fat and fibrous tissue, along with the vessels serving these tissues. By convention it also includes the peripheral nervous system because tumours arising from nerves present as soft tissue masses. Benign soft tissue tumours outnumber malignant tumours by a margin of about 100:1 in hospital population [1]. Soft tissue sarcomas occur more commonly in males, but gender and age related incidences vary among the histologic types. Sarcomas account for less than 1% of all new malignancies detected every year [2,3]. In this study we have reported our experience of distribution of soft tissue tumours in rural teaching hospital in central India.

EXPERIMENT WORK

This was a prospective study, carried out in the Department of Surgery during the period of three years. A total of 157 patients of soft tissue tumours who attended Surgery OPD were included in the study with informed consent. The main stay of diagnosis was clinical followed by ultrasonography and FNAC. The diagnosis was confirmed by Histopathological examination if operated and by Tru Cut biopsy if inoperable. A thorough clinical history was obtained and a detailed clinical evaluation was carried out as per the standard proforma. Other radiological investigations namely CT scan and MRI were done where needed. Treatment was individualized.
Written informed consent in their language was obtained from all the participants.

RESULTS

Most patients of benign soft tissue tumours were in the age group of 21 to 50 years (61.8%) where as the patients with malignant soft tissue tumours were in 31-40 years of age (23.5%) and between 51-70 years (41.1%) (Table 1)

Table 1.Types of soft tissue tumour with corresponds to various age groups

Age Group (in Yrs)	Benign	Percentage	Malignant	Percentage	Total
0-10	7	5%	00	00%	7
11-20	15	10.7%	01	5.9%	16
21-30	31	22.1%	01	5.9%	32
31-40	29	20.7%	04	23.5%	33
41-50	30	21.4%	02	11.8%	33
51-60	11	7.9%	04	23.5%	14
61-70	11	7.9%	03	17.6%	14
71-80	6	4.3%	02	11.8%	8
Above 80	0	0%	00	00%	0
Total	140	100%	17	100%	157

Incidence of benign tumours was more in males (67.9%) than in females (32.1%). Similarly the incidence of

malignant tumours was 64.7% in males and 35.3% in females.

Most of the soft tissue tumours were found in the upper limb, followed by back, head, neck, face, chest and abdominal wall, lower limb and intra-abdominal site. While benign tumours were most common in upper limb (26.4%) followed by head neck face region and back (21.4% each). Malignant tumours were most commonly seen on back and lower limb (29.4% each) followed by chest and abdominal wall (17.6%). (Table 2)

Table 2. Site of soft tissue tumours

Site	Benign	Percentage	Malignant	Percentage	Total
Head, Neck, Face	30	21.4%	2	11.8%	32
Chest & Abdominal Wall	24	17.1%	3	17.6%	27
Upper Limb	37	26.4%	0	0%	37
Lower Limb	19	13.6%	5	29.4%	24
Abdomen	0	0%	2	11.8%	2
Back	30	21.4%	5	29.4%	35
Total	**140**	**100%**	**17**	**100%**	**157**

Most common malignant tumours in present study were malignant spindle cell neoplasm, malignant fibrous histiocytoma, Leiomyosarcoma and liposarcoma, each amounting for 17.6% of all the tumours. Rhabdomyosarcomas, fibrosarcomas, clear cell sarcomas, dermatofibrosarcoma protuberance and malignant peripheral nerve sheath tumours (MPNST) amounted for 5.9% each

On histopathology it was observed that the most common benign soft tissue tumours were lipomas which constituted 65.7%.This was followed by neurofibromas which comprised 15.7%, Desmoid tumours (5.7%), benign fibrous histiocytoma (4.3%). Others were benign spindle cell neoplasm (3.7%), cutaneous leiomyoma (2.1%), hemangioma (1.4%), Schwannoma and lymphangioma (0.7% each). (Table 3)

Table 3. Types of soft tissue tumours observed

Benign		Malignant	
Type	Number	Type	Number
Lipoma	92 (65.7%)	Malignant Spindle Cell Neoplasm	3 (17.6 %)
Neurofibroma	22 (15.7%)	Malignant Fibrous Histiocytoma	3 (17.6 %)
Desmoid tumour	08 (5.75 %)	Leiomyosarcoma	3 (17.6 %)
Benign Fibrous Histiocytoma	06 (4.3 %)	Liposarcoma	3 (17.6 %)
Others *	12 (8.6 %)	Others **	5 (29.6%)
Total	**140 (100 %)**		**17 (100 %)**

(* Includes hemangioma, schwannoma, cutaneous leiomyoma,benign spindle cell neoplasm)

(** Includes rhabdomyosarcoma, fibrosarcoma, clear cell sarcoma, dermatofibrosarcoma protuberance, MPNST)

DISCUSSION

Soft tissue is derived principally from the mesoderm, with some contribution from neuroectoderm. Soft tissue tumours are a highly heterogeneous group of tumours that are classified on histogenetic basis according to adult tissue they resemble. Benign soft tissue tumours outnumber malignant tumours by a margin of about 100:1 in hospital population. Maximum number of patients of soft tissue tumours was in the age group of 21-50 years. The maximum numbers of patients of benign soft tissue tumours were in the age group of 21 to 50 years (61.8%) where as the number of patients with malignant soft tissue tumours were in 31-40 years of age and between 51-70 years (41.2% each). Similar pattern of age distribution was also reported by Bezabih [4], Leffert [5]. Russell et al [6] recorded a peak frequency over the age of 55 years with 64% occurring after 35 years of age in cases of soft tissue sarcomas in their study. While in another study by Gangane [7], maximum number of patients of malignant soft tissue tumours was in the age group of 51-70 years, which is similar to the present study.

In the present study incidence of Soft Tissue Tumours was more in males with a ratio of 2.1:1. But for malignant tumours it was 1.8:1 which was similar to the study of Leffert [5] in his study of soft tissue tumours. For malignant tumours in the present study, the results are marginally higher than the findings of Weiss and Goldblum [1] and Russell et al [6] who observed that males and females were equally affected with only marginal difference in male: female ratio (**1.1:1**)

The present study showed that most of the soft tissue tumours were present in the upper limb, followed by back, head neck face, chest and abdominal wall, lower limb and intra abdominal site. The benign tumours were most common at upper limb (26.4%) followed by head neck face region and back (21.4% each) and malignant tumours were most commonly seen at back and lower limb (29.4% each) followed by chest and abdominal wall (17.6%). In a study done by Bezabih [4] it was shown that benign tumours were roughly distributed equally throughout the body with a slight predilection for upper parts; head & neck (26.2%), trunk (26.4%).

On histopathological examination 140 tumours were benign and accounted for 89.2% of all soft tissue tumours. Lipoma was the commonest soft tissue tumour and accounted for 65.7% of all the benign tumours followed by neurofibromas , desmoid fibromatoses and benign fibrous histiocytoma. These observations are well comparable to those recorded [4]. In yet another study done by Dey et al [9] though lipoma was the commonest tumour but accounted for 33.3% followed by Schwannoma (26%), fibromatoses and neurofibromas (18.5% each) and fibrous histiocytoma (3.7%).

On histopathological examination in present study there were a total of 17 malignant soft tissue masses in which Malignant Spindle cell Neoplasm, Liposarcoma, Malignant Fibrous Histiocytoma and Leiomyosarcoma each accounting for 17.6%. Other tumours i.e. Fibrosarcoma and MPNST accounted for 5.9% , which is well comparable to the data recorded in Memorial Sloan Kettering Cancer Centre [10] in which authors observed that Liposarcomas were 18%, Malignant Fibrous Histiocytoma 18%, Leiomyosarcoma 17% , MPNST 3% and Fibrosarcomas 11% and other rare varieties accounted for 26%. In yet another study by Gangane [7] the most common malignant tumour was fibrosarcoma (27.7%), liposarcoma (18.5%), rhabdomyosarcoma (18.5%), malignant hemangioendothelioma (11.3%), malignant hemangiopericytoma (5.6%), MFH (5.6%), synovial sarcoma (3.7%), malignant schwannoma (3.7%), clear cell sarcoma of tendon & aponeurosis (1.8%), malignant mesothelioma (1.8%), alveolar soft part sarcoma (1.8%) .

CONCLUSION

The incidence of benign soft tissue tumours in the study was 89.2% and malignant tumours was 10.8%. Males outnumbered females in both the categories i.e. benign and malignant tumours. Male: Female for benign tumours was 2.1:1 while for malignant tumours it was 1.8:1. The most common site for occurrence for benign tumours was upper limb followed by head, neck and face. Lower limb and back were the most common sites for malignant tumours followed by chest and abdominal wall and head, neck and face.11.8% patients had intra abdominal malignancy. None of the patients had involvement of upper extremity.

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