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Original Research

Histopathological Assessment of Soft Tissue Tumors

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ABSTRACT
Background: Soft tissue tumors are defined as mesenchymal proliferations which occur in the extraskeletal non-epithelial tissues of the body. The present study was conducted to evaluate soft tissue tumors (STT) histopathologically. **Material & Methods:** The present study was conducted on 225 cases of soft tissues tumors in both genders. Specimens were retrieved and blocks were prepared and special stains like PAS, Masson's trichrome, PTAH, iron hematoxylin, reticulin were employed wherever necessary. **Results:**There were 145 STTs in males and 80 in females. Maximum cases were seen in age group 20-30 years in males (55) and females (24) followed by 30-40 years in males (40) and females (20). Out of 195 benign lesions, 123 were seen in males and 72 in females and out of 30 malignant lesions, 22 were seen in males and 8 in females. The most common type of benign tumor was lipomatous tumor seen in 78 cases followed by fibrous tumors in 32, blood vessel tumor in 25 and synovial tumors in 22 cases. Malignant tumors were lipomatous seen in 8 and peri-vascular in 6 cases. The difference was significant (P< 0.05). **Conclusion:** Authors found that most STTs were benign and there was male predominance. Age group 20-30 years had maximum cases in both genders. Lipomatous type of benign and malignant lesions was the most commonly occurring STTs.

Key words: Benign, Malignant**,** Soft tissue tumors.

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INTRODUCTION

Soft tissue tumors (STT) are a complex group of neoplasms with differentiation towards mesenchymal tissue occurring in all age groups. Soft tissue tumors are defined as mesenchymal proliferations which occur in the extraskeletal non-epithelial tissues of the body, excluding the viscera, coverings of brain and lymphoreticular system.[1] Although pathologically diverse, they frequently exhibit similar clinical presentations and radiological features. Soft tissue sarcomas (STSs) comprised of <1% of overall adult cancers and nearly 15% of all pediatric malignancies. These are complex, heterogeneous, and diagnostically challenging tumors. They show >50% mortality rates and even higher morbidity rates, as a result of recurrences and metastasis, making their accurate pretreatment pathologic evaluation, crucial, for appropriate management.[2]

Soft tissue sarcomas occur more commonly in males, but gender and age related incidences vary among the histologic types. They may occur anywhere but three fourth are located in the extremities (most common in the thigh). One third of the benign tumors are lipomas, one third are fibrohistiocytic and fibrous tumors, 10 % are vascular and 5% nerve sheath tumors.[3]Fine needle aspiration cytology (FNAC) is fairly specific and sensitive in the diagnoses of primary, recurrent, and metastatic STT. Other techniques like immunohistochemistry, electron microscopy flow cytometry and cytogenetics, has increased insight into the tumor biology and has provided tools for greater diagnostic accuracy. Although surgery with radiation therapy has been considered as the most common modality of treatment, certain sarcomas, mostly in pediatric patients and some in adults are treated with specific chemotherapy regimens and are associated with variable chemosensitivity, respectively.[4] The present study was conducted to evaluate soft tissue tumors (STT) histopathologically.

MATERIAL & METHODS

The present study was conducted in the department ofl Pathology. It consisted of 225 cases of soft tissues tumors in both genders. All were informed regarding the study. Ethical clearance was obtained from institutional ethical committee.

General information such as name, age, gender etc. was recorded. Specimens were retrieved and blocks were prepared and special stains like PAS, Masson's trichrome, PTAH, iron hematoxylin, reticulin were employed whenever necessary. Results thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

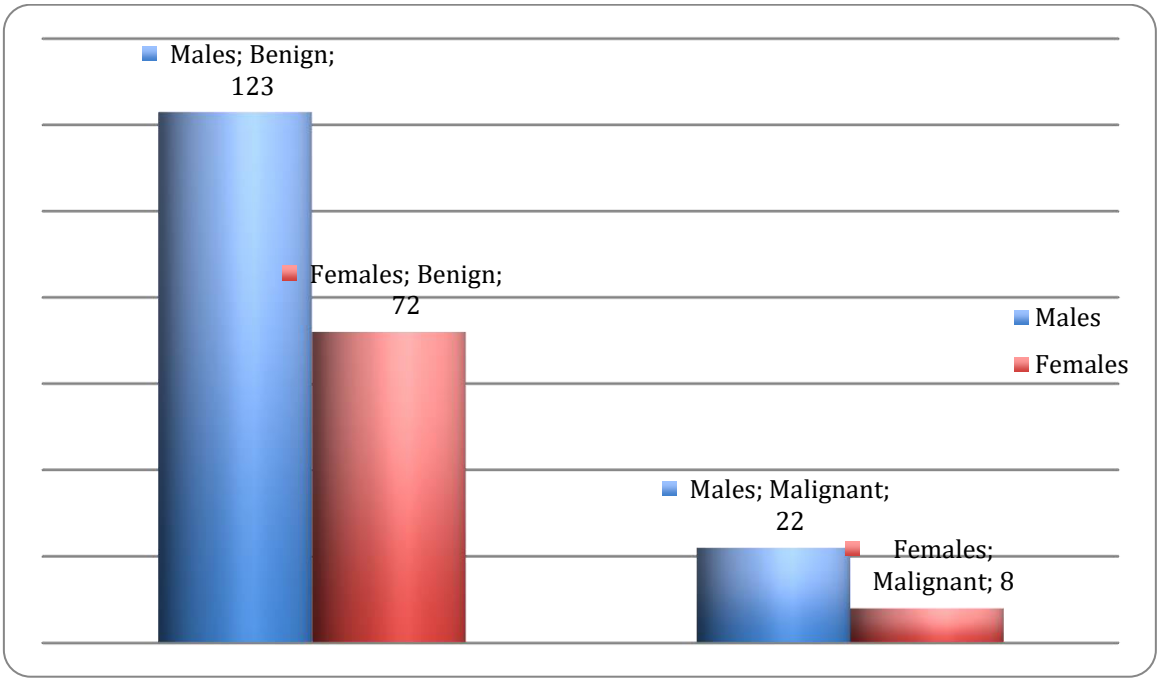
RESULTS

Table I shows that there were 145 STTs in males and 80 in females. Maximum cases were seen in age group 20-30 years in males (55) and females (24) followed by 30-40 years in males (40) and females (20). The difference was significant (P< 0.05).

Table I Age & Gender wise distribution of STT

Age groups (years)	Males	Females	P value
10-20	10	18	0.05
20-30	55	24	
30-40	40	20	
40-50	28	12	
>50	12	6	
Total	145	80	

Graph I Nature of STT



Graph I shows that out of 195 benign lesions, 123 were seen in males and 72 in females and out of 30 malignant lesions, 22 were seen in males and 8 in females.

Table II Histological types of STT

Tumor	Benign	Malignant	P value
Fibrous	32	4	
Lipomatous	78	8	0.01
Blood vessel	25	3	
Peri- vascular	2	6	
Synovial tumor	22	4	
Smooth muscle	7	0	
Lymph nodes	12	1	
Miscellaneous	17	4	
Total	195	30	

Table II shows that most common type of benign tumor was lipomatous tumor seen in 78 cases followed by fibrous tumors in 32, blood vessel tumor in 25 and synovial tumors in 22 cases. Malignant tumors were lipomatous seen in 8 and peri- vascular in 6 cases. The difference was significant (P< 0.05).

DISCUSSION

Soft tissue can be defined as non-epithelial, extra-skeletal tissues of the body exclusive of the reticulo-endothelial system, glia and supporting tissues 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 peripheral nervous system.[5]

Immunohistochemistry is used to detect tumor specific alterations which add significantly to histological interpretation, but several groups of tumors still lack reliable immunohistochemical markers. At times, there is a challenge in diagnosing these tumors with limited biopsy sample, by a nonspecialized pathologist, which can result in inappropriate medical management, in more than 70% patients. Trucut core needle biopsy is a safe diagnostic modality of choice for diagnosis of STSs, with an accuracy rate up to 98%, with contrasting results from some other studies.Histopathologic review and second opinion by a pathologist, who specializes in

STSs, are crucial, before initiating a definite treatment in these cases.[6] The present study was conducted to evaluate soft tissue tumors (STT) histopathologically.

In present study, there were 145 STTs in males and 80 in females. Maximum cases were seen in age group 20-30 years in males (55) and females (24) followed by 30-40 years in males (40) and females (20). Badanale et al[7] found that most cases (82%) were sarcomas followed by benign tumors (9%) and intermediate malignancies. Within STTs, liposarcomas, neural tumors, and undifferentiated pleomorphic sarcomas were relatively more frequently associated with discrepancies.

We found that out of 195 benign lesions, 123 were seen in males and 72 in females and out of 30 malignant lesions, 22 were seen in males and 8 in females. The most common type of benign tumor was lipomatous tumor seen in 78 cases followed by fibrous tumors in 32, blood vessel tumor in 25 and synovial tumors in 22 cases. Malignant tumors were lipomatous seen in 8 and peri- vascular in 6 cases. Baig[8] found that there were 113 benign soft tissue tumors (82.48%) and 24 malignant soft tissue tumors (17.52%). The soft tissue tumors were more common in males comprising 52.55% as compared to females 47.44%. Malignant soft tissue tumors occurred with an equal frequency in both male and female patients accounting for 12 cases each. The most common benign soft tissue tumors was adipose tissue tumor (52) followed by vascular tumors (20), fibrous tumors (18), peripheral nerve sheath tumors (8), synovial tumors (5), fibrohistiocytic tumors (4), smooth muscle tumors (3). In soft tissue sarcomas, malignant fibrous histiocytic tumors were the commonest tumors (5), followed by PNET and related lesions (4). These were followed by adipose tissue and perivascular tumors (3), and fibrous and vascular tumours (2). Majority of soft tissue sarcomas were grade-2 accounting for 10 cases (43.47%).

Harpal et al[9] found that out of 200 cases of soft tissue tumors, 169 cases (84.5%) were benign, 20 cases (10.0%) were malignant and 11 (5.5%) were classified under intermediate category. Adipocytic tumors formed the largest group constituting 92 cases (46%).Vascular tumors were the second commonest (18%) followed by peripheral nerve sheath tumors (10.5%). The benign tumors were seen in younger age as compared to malignant tumors.

CONCLUSION

Authors found that most STTs were benign and there was male predominance. Age group 20-30 years had maximum cases in both genders. Lipomatous type of benign and malignant lesions were the most commonly occurring STTs.

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