

A Study of Pattern of Distribution of Soft Tissue Tumors in a Population of Bhavnagar District.

Dr.KinjalBera¹, Dr.MayuriV.Thaker²

¹(2nd year Resident, Department of Pathology, Government Medical College, Bhavnagar, India)

²(Assistant professor, Department of Pathology, Government Medical College, Bhavnagar, India)

Abstract:

Introduction: Soft tissue tumours, a highly heterogeneous group of tumours are classified on a histogenetic basis according to the adult tissue they resemble. Within the various histogenetic categories, they are usually divided into benign, intermediate and malignant forms.

Objective: The purpose of our study was to evaluate pattern of distribution of the soft tissue tumours in relation to different age groups, sex and site distribution.

Material And Method: The present study has been done in Histopathology section of Pathology Department of Government medical college & Sir T General Hospital ,Bhavnagar for the period of 3 years from 01/01/2013 to 31/12/2015.Total 131 cases were studied.

Results: In the present study, soft tissue tumours constitutes 2% of total yearly histopathological specimens.The incidence of benign soft tissue tumours is 93.13% and that of malignant tumours is 6.87%. Ratio of benign to malignant STT is 13.5:1.Commonest age group for benign tumors was 30-50 years& for malignant lesions above 50 yrs age.Overall incidence of soft tissue tumors is slightly higher (53.4%) in males in comparison of females (46.5%). The most common benign soft tissue tumour was lipoma followed by ganglion and neurofibroma.

Conclusion: With our study we are able to study pattern of distribution of various soft tissue tumours in relation to age, sex and location.

Keywords: Soft tissue tumors(STT),benign STT, malignant STT, lipoma.

I. Introduction

STT are defined as mesenchymal proliferations that occur in the extraskelatal , non epithelial tissues of the body ,excluding the viscera, coverings of the brain, and lymphoreticular system .The field of soft tissue tumors (STT) is enormously vast, and yet relatively undiscovered. Because of rarity of primary tumors of soft tissue and large range of different types of tumors,the diagnosis and classification of soft tissue tumors become most difficult areas in surgical pathology . The annual clinical incidence (number of new patients consulting a doctor) of benign soft tissue tumours has been estimated as up to 3000/million population [1]. The fact that many benign tumours, such as lipomas and hemangiomas, do not undergo biopsy makes direct application of data from most hospital series invalid for the general population. Sarcomas account for less than 1% of all new malignancies detected every year [2,3].Benign tumors are more common than malignant ones in ratio of 100:1.[2]

Although most benign soft tissue tumors are asymptomatic and present in the form of a painless nodule or mass, tumors like schwannoma & glomus tumors are painful. Benign soft tissue tumours have a limited capacity for autonomous growth, but some of them exhibit little tendency to recur or, to invade locally or have potential to be converted into malignancy.Such benign tumours should be evaluated thoroughly and are to be kept in close follow up and also,there is a diverse range of benign soft tissue tumours that may mimic soft tissue sarcomas. Because of this, the diagnosis of soft tissue sarcoma may be unsuspected at the time of presentation and an inappropriate biopsy is performed. Early recognition, correct histological diagnosis and early surgical intervention are the most important factors regarding the prognosis in patients of malignant STTs. Outcome of the tumor also depends upon the age at presentation, size and site of the tumors, tumors' grade and histological subtype (5, 6).Old patient (> 60 years)tumor size (>5 cm) and high grade histology with deep seated tumors (7) are associated with poor prognosis. The purpose of present study is to evaluate the frequency & pattern of distribution of soft tissue tumours in relation to different age groups, sex and location and to compare the obtained data with those obtained in other series by different authors.

II. Materials And Methods

The present study has been done in Histopathology section of Pathology Department of Government medical college & Sir T General Hospital, Bhavnagar for the period of 3 years from 01/01/2013 to

31/12/2015. Total 131 cases were studied. All specimens (including biopsy specimen) were fixed in 10% formalin. Sections were stained with H& E stain (Harry's hematoxylin). Data has been collected from records and analysed. Complete clinical details examination findings were studied in all the cases. In majority of the cases radiological investigation reports are not available. No cases of recurrences has been noted in present study.

III. Aims And Objectives

1. To study the pattern of distribution of soft tissue tumors in a population of Bhavnagar district. (1)
2. To study prevalence of soft tissue tumours in Bhavnagar district.
3. To know frequency of benign and malignant soft tissue tumours.
4. To know about association of soft tissue tumours in relation to age, sex & location if any.

IV. Results And Analysis

Total 131 cases of soft tissue tumors were studied. Table-1 shows that benign soft tissue tumours are common in the age group of 30-50 years while malignant tumours have two spikes, one is above the 50 years of age & the other between 18-30 years age group. Table -2 shows that overall incidence of soft tissue tumors is slightly higher (53.4%) in males in comparison of females (46.5%). Highest % of tumour occurrence is above 50 yrs in males whereas in females, it is seen in age group of 30-50 years. Benign soft tissue tumors are more commonly occurring in males as compared to females whereas malignant lesions occur more commonly in females. (Table-3)

Table-1 (Age group wise distribution of STT)

AGE GROUP (Yrs.)	BENIGN (%)	MALIGNANT (%)
<18	13 (10.65)	00 (00)
18-30	32 (26.25)	04 (44.44)
30-50	44 (36.06)	00 (00)
>50	33 (27.04)	05 (55.56)
TOTAL	122 (100)	09 (100)

Table-2 (Age group wise distribution of STT in males & females)

AGE GROUP (Yrs.)	MALE (%)	FEMALE (%)
<18	08 (11.42)	05 (8.19)
18-30	18 (25.72)	18 (29.51)
30-50	19 (27.14)	25 (40.98)
>50	25 (35.72)	13 (21.32)
TOTAL	70 (100)	61 (100)

Table-3 (Sexwise distribution of benign & malignant STT)

SEX	BENIGN (%)	MALIGNANT (%)
Male	66 (54.09)	04 (44.44)
Female	56 (45.91)	05 (55.56)
TOTAL	122 (100)	09 (100)

Table-4 shows that the commonest soft tissue of origin of both benign & malignant tumors is adipose tissue followed by fibrous tissue tumors. Overall benign soft tissue tumours are more common than malignant soft tissue tumors and among benign tumors lipoma is the commonest with highest incidence rate of (56.49%) (Table-5).

Table-4 (soft tissue of origin of tumor)

TISSUE OF ORIGIN	NO. OF BENIGN CASES	NO. OF MALIGNANT CASES
Adipose tissue	84 (68.85)	03 (33.33)
Fibrous tissue & histiocytic	19 (15.57)	04 (44.44)
Muscle	02 (1.64)	01 (11.11)
Vascular tissue	06 (4.92)	01 (11.11)
Synovium	02 (1.64)	00 (0.00)
Tendon sheath	09 (7.38)	00 (0.00)
Total	122 (100.00)	09 (100.00)

TABLE-5 (frequency of soft tissue lesions)

DIAGNOSIS	NO. OF CASES (%)
Lipoma	74 (56.49)
Ganglion	09 (6.89)
Synovial cysts	02 (1.53)
Neurofibroma	07 (5.35)

Fibrolipoma	05(3.82)
Angiofibroma	03(2.29)
Fibroma	05(3.82)
Dermatofibroma	03(2.29)
Dermatomyositis	02(1.52)
Angiolipoma	03(2.29)
Vascular lesions	06(4.59)
Nodular fasciitis	01(0.76)
Myolipoma	01(0.76)
Spindle cell lipoma	01(0.76)
Pleomorphic liposarcoma	01(0.76)
Malignant spindle cell tumour	01(0.76)
Tendinousxanthoma	01(0.76)
Low grade fibromyxoid sarcoma	01(0.76)
Pleomorphic undifferentiated sarcoma	01(0.76)
Liposarcoma/MFH	02(1.52)
Pleomorphic MFH/Pleomorphic RMS/Pleomorphic LMS	01(0.76)
Malignant hematopoietic tumour-granulocytic sarcoma/ Malignant round cell tumour	01(0.76)
TOTAL	131(100)

For simplification of analysis of average size, lesions have been divided into three categories that are in benign lesion: lipoma & other than lipoma & malignant tumors. Malignant tumors have larger size as compare to benign lesions.(**Table:6**)

Table: 6 (Average size of the lesion)

TYPE OF LESION	Average Size (in cm).
Lipoma	4.8
Benign lesions other than lipoma	4.0
Malignant lesions	5.6

Trunk (especially backside of trunk) is the commonest site of origin for benign STT followed by lower extremities & upper extremities & head neck region. For malignant lesions ,lower extremities are the commonest site followed by upper extremities & trunk.(**Table:7**)

Table: 7 (Commonest site for benign & malignant STT)

SITE	BENIGN LESIONS (%)	MALIGNANT LESIONS (%)
Trunk	74(60.66)	02(22.23)
Lower extremities	24 (19.68)	04 (44.44)
Upper extremities	12 (9.83)	03 (33.33)
Head & neck	12 (9.83)	00(00)
Total	122(100)	09(100)

V. Discussion

The main purpose of this study is to assess hospital based data of benign and malignant soft tissue tumours with respect to age, sex, site distribution and to compare this with other similar studies. (**Table-8**)

Table-8 (comparison of present study with other similar studies)

Points to be compared	Present study	Batra et al(1)	Bhartiramnani et al (2)	G.KrishnaKanth h et al.(3)
Common age group (benign)	30-50 years	21-50 years	31-40 years	21-30 years
Common age group (malignant)	>50 years	31-40 years & 51-70 years	-	40-50 years
Sex distribution (benign)	Male >Female	Male >Female	Male >Female	Male >Female
Benign/Malignant	Benign>Malignant	Benign>Malignant	-	Benign>Malignant
Common site for benign tumours	Trunk (Back side)	Upper limb	Trunk	trunk
Common site for malignant tumours	Lower limb	Lower limb	-	Lower extremities
Lipoma incidence(%)	56.48		50.8	52

Incidence of soft tissue tumors in present study is 2% (131/6521specimens/3 yrs). Most benign soft tissue tumours are seen in the age group of 30-50 years in the present study which is also seen in the results of study by Batra et al and Bharti et al &G.KrishnaKanthh et al. In comparison to benign tumours, Malignant tumours are commonly seen in two age groups i.e. above 50 years followed by 18-30 yrs.

In Present study & all other compared study (**Table-8**) show that the incidence of benign soft tissue tumours are more in males than in females while for malignant tumours the incidence is slightly higher in

females in present study whereas in other studies same in both sexes. The maximum number of patients of soft tissue tumours are having benign tumours amongst which tumours arising from the adipose tissue are most common. Incidence of lipoma in present study is (56.49 %) which is comparable to other studies.

Commonest site for benign tumours in present study & other similar studies shown in table is trunk (backside) followed by lower limbs while lower limbs are common site for malignant soft tissue tumours in present study and other compared studies. Ratio of benign to malignant STT is 13.5:1 in present study whereas it is 4.3:1 in G.KrishnaKanth et al, 3:1 in B. Hassawi et al, 8.2:1 in Batra et al study.

VI. Conclusion

In the present study, soft tissue tumours contributes 2% of total yealyhistopathological specimens. The incidence of benign soft tissue tumours is 93.13% and that of malignant tumours is 6.87%. Ratio of benign to malignant STT is 13.5:1. Commonest age group was 30-50yrs in benign soft tissue tumors & above 50 yrs in malignant cases. Benign tumours are more common in males than females while malignant tumours show slightly higher incidence in females. M:F ratio of is 1.17:1 in benign soft tissue tumors & 0.8:1 in malignant ones. Adipose tissue is the commonest soft tissue of tumor origin. The most common benign soft tissue tumor is lipoma followed by ganglion & neurofibroma. The most common site for occurrence of benign tumours was backside of the trunk and for malignant tumours was lower limbs.

References

- [1]. Batra et.al/Pattern of Soft Tissue Tumours In A Rural Population Of Central India, Innovative Journal of Medical and Health Science 3 : 3 May – June. (2013) 124 - 126.
- [2]. Bharti G Ramnani et al., Clinicopathological Profile of Benign Soft Tissue Tumors: A Study of 120 Cases in a Tertiary Care Hospital in Western India, Journal of Clinical and Diagnostic Research. 2014 Oct, Vol-8(10): FC01-FC04
- [3]. Dr.G.V.R.N.KrishnaKanth, A Histopathological Study of Soft Tissue Tumors, IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), Volume 14, Issue 7 Ver. II (July. 2015), PP 82-85.
- [4]. Yüçetürk et al. The prevalence of bone and soft tissue tumors ,Acta Orthop Traumatol Turc 2011;45(3):135-143
- [5]. Allen et al, Giant lipomas of the upper extremity, Can J Plast Surg Vol 15 No 3 Autumn 2007
- [6]. Sam Moore ,Hugo Heij, Malignant Soft Tissue Tumours
- [7]. Dr.D.Abhivardhan et al, Clinical Study of Soft Tissue Sarcoma Cases in A South-Indian Teaching Hospital, JMSCR Volume 03 Issue 05 May
- [8]. Bashar A. Hassawi, Soft tissue tumors - Histopathological study of 93 cases, Annals of the College of Medicine Vol. 36 No. 1 & 2 2010
- [9]. Rajanya Banerjee et al, Epidemiology, Pathology, Types and Diagnosis Of Soft Tissue Sarcoma, Asian J Pharm Clin Res, Vol 6, Suppl 3, 2013, 18-25