ORIGINAL ARTICLE

Study of Bone Tumors

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ABSTRACT
BACKGROUND AND OBJECTIVES: To study histopathological features of bone tumors and clinico-radiological correlation of them with their relative frequencies, age and sex wise distribution in Tertiary Hospital of Ahmedabad. **METHODS:** : The study was carried out at Tertiary Hospital from October 2014 to September 2016 (2 years). A total of 150 bone tumors were analyzed. Bone biopsy was performed after detailed clinical and radiological examination. After fixation, decalcification, processing and H & E staining; histopathological diagnosis was made. **RESULTS:** Out of all 150 cases, benign tumors accounted 33.31% of cases, most common benign tumor in study was Giant Cell Tumor followed by Osteochondroma. Malignant tumors accounted for 66.69% of cases, highest incidence among malignant tumors was Osteosarcoma. This study showed that bone tumors occurred predominantly in 2nf decade of life with male preponderance. **CONCLUSION:** Though bone tumors are less common, if viewed in perspective of clinic-radiology and histopathology, correct diagnosis can be made.
Keywords: Bone Tumors, Osteosarcoma, Giant Cell Tumor

INTRODUCTION

In comparison to the other tumors, bone tumor is relatively uncommon, consisting only 0.5% of total world cancer incidence.[1,2] Bone tumors remain a daunting challenge to the orthopedic surgeons and the pathologists.[3] The challenge is heightened in the developing countries due to limited diagnostic and therapeutic facilities as well as due to ignorance.[4-8] As already mentioned bone cancer is not a common malignant disease and perhaps for this reason its etiology is not very clear. Furthermore very few studies have been conducted in this field.[9] The clinicians and the pathologists handling management responsibility must have high index of suspicion as the nature of bone lesion in order to establish the diagnosis of the bone tumors. The purpose of this study is to determine the pattern of bone tumors including their relative frequencies, age, sex distributions in tertiary hospital of Ahmedabad.[10]

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MATERIALS AND METHODS

A retrospective review of the all the histologically confirmed bone tumors at Civil hospital and Gujarat cancer research institute, Ahmedabad, was done covering the period of last two years. The clinical data such as the age, sex, radiological findings were studied in detailed before histopathological examination. All specimens were fixed in 10%formalin. Soft parts of specimen were studied by routine method of haematoxylin and eosin staining. Hard specimens were decalcified using 5-15% nitric acid. Bony material was kept in nitric acid for 6-96 hours depending on the nature of specimen.

OBSERVATIONS

Incidence of Bone Tumors:

Table 1: Age Wise Distribution

Age	<20 Year	20-40 Year	40-60 year	>60 year
Osteosarcoma	20	11	5	0
Ewing's Sarcoma	9	5	1	0
Chondrosarcoma	0	3	8	3
Admantinoma	0	2	0	0
Plasmacytoma	0	2	3	4
Metastati carcinoma	0	4	6	15

Table 2 & Graph 1: Malignant

Name	Male	Female	Total	Perecentage
Osteosarcoma	30	6	36	24%
Ewing's Sarcoma	9	6	15	10%
Chondrosarcoma	5	9	14	9.3%
Admantinoma	2	0	2	1.3%
Plasmacytoma	5	4	9	6%
Metastati carcinoma	17	7	24	16%
Total	**68**	**32**	**100**	**66.6%**

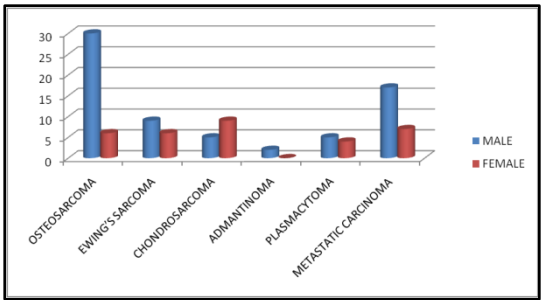


Table 3 & Graph 2: Benign Tumors

Name	Male	Female	Total	Percentage (%)
Giant Cell Tumor	13	4	17	11.33%
Osteochondroma	9	3	12	8%
Aneurysmal Bone Cyst	8	3	11	7.33%
Simlple Bone Cyst	1	3	4	2.66%
Eosinophilic Granuloma	2	0	2	1.33%

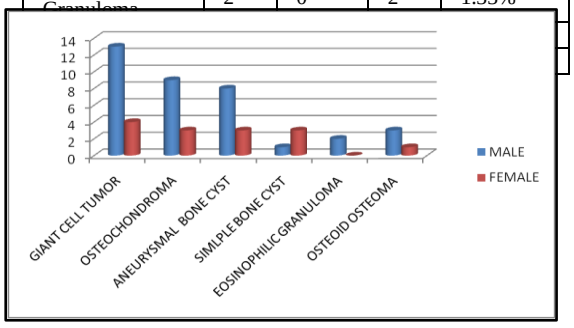


Table 4: Malignant Cases

Malignant Tumors	Comparison Study	Present Study
Osteosarcoma	11.11%	24%
Ewing's Sarcoma	5.13%	10%
Chondrosarcoma	5.13%	9.3%
Metastatic Carcinoma	11.11%	16%

Table 5: Benign Cases

Benign Tumors	Comparison Study	Present Study
Giant Cell Tumor	20.51%	11.33%
Osteochondroma	22.22%	8%
Osteoid Osteoma	4.27%	2.66%

Table 6: Age Wise Comparison

Age	Comparison Study	Present Study
<20 Years	33.32%	35.98%
20-40 Years	35.06%	32.66%
40-60 Years	21.36%	17.33%
>60 Years	11.11%	14.66%

Figure 1: Osteosarcoma

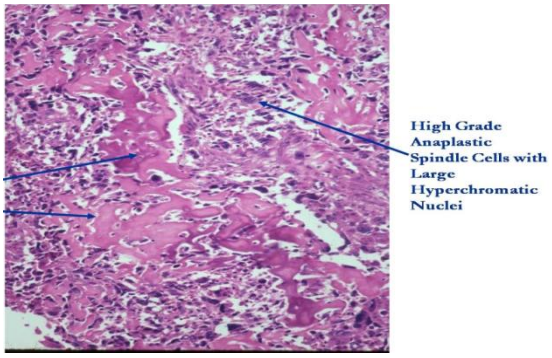


Figure 2: Ewing Sarcoma

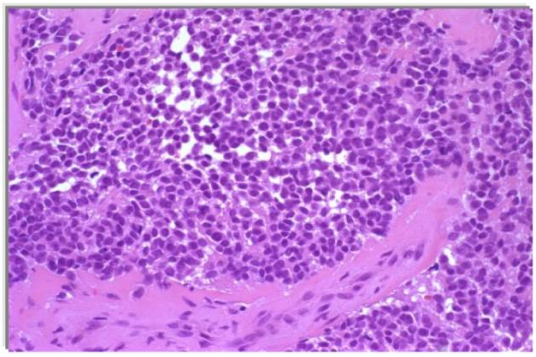


Figure 3: Giant Cell Tumor

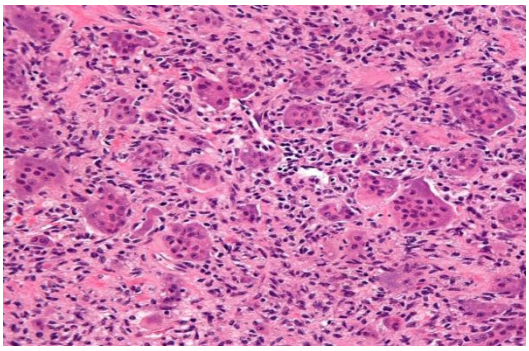
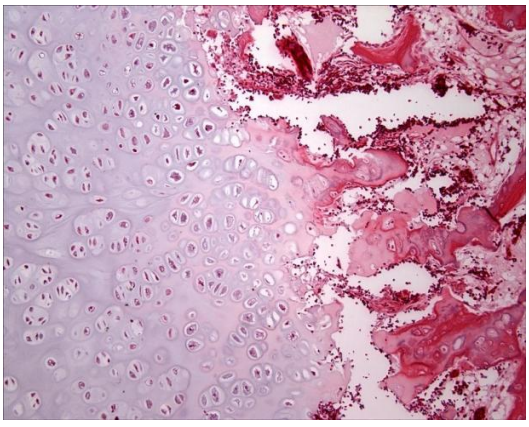


Figure 4: Osteochondroma



DISCUSSION

Overall incidence of malignant tumors was higher than benign tumors.[11-15] Among the malignant tumors osteosarcoma is most

common malignant tumor, and more common in <20 years age with male preponderance. In comparison with a study carried out in a tertiary care hospital of south India is as compared above table 4, 5 &6. [16]

CONCLUSION

In the present study total 150 cases studied. Out of 150 cases benign tumors accounted 33.31% of cases and malignant tumors accounted for 66.6% of cases. Most common benign tumor in present was giant cell tumor followed by osteochondroma. In the series of malignant bone tumors incidence of osteosarcoma was highest. This study showed that bone tumors occurred predominantly in 2ndand 3rddecade of life with male preponderance.

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