

ODONTOGENIC TUMORS: ANALYSIS OF 100 CASES FROM JAMMU AND KASHMIR

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ABSTRACT

Aim: To analyse the relative frequency of different types of odontogenic tumors and to compare the data with published literature.

Background and objectives: odontogenic tumours represent an uncommon group of lesions which arise from the tooth-forming apparatus. They pose a great challenge in diagnosis and treatment. There is a lack of data among Jammu and Kashmir population. Thus the aim of the study was to establish the prevalence of odontogenic tumors.

Material and Methods: Data collected from several different hospital and colleges in the region of Jammu and Kashmir from year 2011 to 2017. Age, gender and site prevalence were also studied.

Results: A total of 100 patients met the criteria for being classified as odontogenic tumors. Ameloblastoma was the most frequently found tumour after which was KCOT and odontoma. No case of malignant OTs was found. Males were affected more in all the types of Odontogenic tumor. The most frequently site is posterior site of the mandible

Conclusion: This is not a large series of odontogenic tumors which can reveal the similarities and differences with those of previous studies of the populations in Africa, Americas and Asia. The findings of the present study is only useful as a guide for clinicians for diagnosis prior to biopsy and for the probable diagnosis. A comprehensive tumour database should be initiated so that cross referring of cases would be easier and the patients, surgeons and the pathologists would be able to safeguard the information about the tumour for future reference. Many private hospitals lack the facility to store

and catalogue histopathological evidences for a prolonged period of time.

KEYWORDS: classification, epidemiology, odontogenic tumors

INTRODUCTION

The Jaws in humans are considered as the common site for the presence of odontogenic cysts and tumors which originate from the remnants of the tooth forming apparatus or as a result of inflammation.¹ Moreover these lesions can also show neoplastic alterations and aggressive clinical behaviour.² Odontogenic tumors represent a rare group of lesions which constitute a group of heterogeneous diseases that range from hamartomatous tissue proliferations, benign neoplasms to malignant tumors with some metastatic potential.³ While they are uncommon, they pose a significant diagnostic and treatment challenges. They are generally classified according to their tissue of origin (e.g., epithelial, mesenchymal, or mixed lesion).⁴ There have been several attempts to reclassify odontogenic tumors according to their histopathological features. In 2005 the World Health organisation reclassified odontogenic keratocysts and calcifying odontogenic cysts as tumors. Published cases of odontogenic tumors have been found to show different epidemiological prevalence.^{5,6} Despite the importance of the issue, little inclusive data are available regarding the prevalence of odontogenic tumors in Jammu and Kashmir. Thus the aim of the present study was to establish the prevalence of odontogenic tumors concerning the age, gender distribution and the site of the lesions

for a period of 7 years in Jammu and Kashmir using the histopathology archives from the Colleges and associate hospitals.

METHODOLOGY

The pathology departments of various hospitals in Jammu and Kashmir were contacted by the investigators and data of the odontogenic tumours were collected by them. Full specimen samples were archived. 100 cases were recovered with full records and histopathology slides. All the slides were reviewed. Parakeratinised keratocyst was renamed as Keratocystic odontogenic tumour. The data was checked for age, gender and site. Prevalence was tabulated and analysed.

RESULTS

A total of 100 patients met the criteria for being classified as odontogenic tumors. Ameloblastoma was the most frequently found tumour after which was KCOT and odontoma. No case of malignant OTs was found. Males were affected more in all the types of Odontogenic tumor. The most frequently site is posterior site of the mandible

TABLE 1- Distribution of Odontogenic Tumours Based On Age

AGE (YEARS)	<20 YEARS	20-40 YEARS	>40 YEARS
AMELOBLASTOMA (n=54)	2(3%)	38(70%)	14 (27%)
ODONTOME (n=16)	16%	1168%	318%
KCOT (n=30)	8 (27%)	18(60)	4(13%)

TABLE 2: Distribution of Odontogenic Tumours Based On Gender

Presence	male	female
AMELOBLASTOMA(n=54)	44(81.48%)	10(18.51%)
ODONTOME (n=16)	12(75%)	4(25%)
KCOT (n=30)	21(70%)	9(30%)

TABLE 3: Distribution of Odontogenic Tumours Based On Site

PRESENCE	MANDIBLE	MAXILLA
AMELOBLASTOMA(n=54)	50 (92.59%)	4 (7.40%)
ODONTOME (n=16)	14 (87.5%)	2 (12.5%)
KCOT (n=30)	22 (73.33%)	8 (36.36%)

TABLE 4 : Histological Distribution Of Ameloblastoma

Types Of Ameloblastoma (n-54)	Numbers
Follicular	32 (59.25%)
Plexiform	8(14.81%)
Desmoplastic	2(3.70%)
Unicystic	10 (18.51%)
Acanthomatous	2(3.70%)

DISCUSSION

Large series of odontogenic tumors have been conducted for different populations, the age, gender and site of the lesions have been reported, and the regional differences have been observed.^{7,8} Due to the differences in the classification, exclusion method and lack of uniform nomenclature among pathologists and surgeons it becomes difficult to calculate the prevalence of odontogenic tumors.⁹ A limited number of studies are available for the states in India specially Jammu and Kashmir. To our knowledge the present study represents the first study to gather the prevalence of odontogenic tumors. These may also represent only a small percentage of the biopsies that are sent to histopathology laboratories in Jammu. The current study represents cases selected from 2011 to 2017. Interestingly in all the cases of odontogenic lesions, odontogenic cysts outnumbered odontogenic tumors. Out of all the diagnosed

cases of odontogenic lesions, only 40% cases were of odontogenic tumor. In our study the most common tumor identified was Ameloblastoma (54%), followed by KCOT (30%) and Odontome (16%). Reports which were published prior to the latest update of WHO classification criteria for odontogenic tumors did not include KCOT thus it is an important consideration when comparing different studies. In the current study, the most frequent OT identified was Ameloblastoma then KCOT then Odontome. In the present study, no case of malignant tumors was diagnosed. However, the perception of malignant OTs to be extremely rare is misleading. Therefore malignant transformation of benign tumour should be suspected when a lesion exhibits atypical clinical or histopathological features.¹⁰ Various studies from Africa, Asia and South America have Ameloblastoma as the most commonly diagnosed OT^{11,12,13,14}. Few studies which were conducted according to 2005 WHO classification exhibited KCOT as the most common OT.^{15,16,17,18} In Europe and North America Odontoma is the most common OT.^{19,20} It is a well-known fact that geographic variations exist in the incidence of Odontoma, and Ameloblastoma. The relatively lower incidence of Odontoma in developing countries like in our study was attributed to the less submission of biopsy when compared to the developed countries. Thus every pathological tissue should be submitted for histopathological Examination. In our study the age range was 10 to 70 years, the peak incidence of OT was third and fifth decades of life. These results are consistent with those of previous reports.^{11,21,22} Male dominance for OTs was found to be statistically significant, and this is consistent with earlier population.^{11,20} In addition the posterior mandible was identified as the most frequently affected site, consistent with the results of other studies.^{11,13,21,17} Malignant OTs are typically rare which goes in accordance with our study. But Studies of United States (1.5%), Turkey (1.1%) also showed low incidence but higher incidence was reported in Egypt (3.7%),²⁵ Nigeria (5%),¹² and China (5.1%).¹²

CONCLUSION

This analysis of a relatively small series of OTs revealed some similarities and some differences between our findings and those of previous studies of populations in Africa, Asia, and the Americas. The findings of the present study may be useful as a guide for clinicians who need to make clinical judgments prior to biopsy about the most probable diagnosis, and need to anticipate

the risks associated with certain types of lesions. Further studies are also needed to characterize the incidence of OTs in different regions of the Saudi Arabia.

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