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Original Research

To determine the prevalence of odontogenic cysts and tumors in a rural area

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***ABSTRACT*:**
Background: Odontogenic cysts and tumors comprise an important aspect of oral maxillofacial pathology, as they can be diagnosed in general dental practice. The present study was conducted to determine the prevalence of odontogenic cysts and tumors in a rural area.
Material and methods: The present study was conducted to determine the prevalence of odontogenic cysts and tumors in a rural area. Cases included in the study were diagnosed as odontogenic cysts and tumors retrospectively over the period of two years. Data regarding gender, location were gathered from the clinical records, case notes and follow-up records in the files along with biopsy reports. Data was analyzed using the SPSS — 20 (Chicago, IL-USA)) statistical software for Windows. The critical level of significance was set at $P < 0.05$.
Results: Among the clinical records of 220 maxillofacial cases retrieved retrospectively over a period of two years, only 125 confirmed cases of odontogenic cysts and tumors were detected. odontogenic cysts were 76.8% and odontogenic tumors were 23.2%. Radicular cysts were prevalent in the study. Dentigerous cysts were 29 in no. and OKC were 13 in no. In men cysts were prevalent than women. Radicular cysts were 29 in no. in men and 22 in women. Calcifying odontogenic cysts and glandular odontogenic cysts were present only in males. OKC,OOC, Dentigerous cyst, Calcifying odontogenic cyst was present maximum in posterior mandible. Radicular cyst was maximum in anterior maxilla. Glandular odontogenic cyst was present in posterior maxilla. Unicystic Ameloblastoma was maximum in no. in the study. Ameloblastoma, Unicystic ameloblastoma, Plexiform unicystic ameloblastoma was maximum in males. Adenomatoid odontogenic tumor, Odontoma was present in females. Ameloblastoma, Unicystic ameloblastoma , Odontoma was maximum in posterior mandible. Adenomatoid odontogenic tumor was equally present in anterior maxilla and posterior maxilla. Plexiform unicystic ameloblastoma was present in anterior mandible.
Conclusion: The present study concluded that there was a higher incidence of odontogenic cyst than odontogenic tumors, with a male predilection, posterior mandible being the most common site.

Keywords: Ameloblastoma, dentigerous cysts, odontogenic cyst, odontogenic tumors, odontoma, radicular cysts.

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INTRODUCTION:

Odontogenic cysts and tumors are a diverse group of lesions originating from the tissue remnants of the tooth forming apparatus or due to inflammation.[1,2] A cyst is defined as a "pathological cavity having fluid, semi fluid or gaseous contents and which is not created by the accumulation of pus". Most cysts but not all are lined by epithelium.[3] Odontogenic cysts have been classified based on origin as inflammatory and developmental. These cysts are unique in that they only affect the maxillofacial region, arise from the embryological remnants of dental organ and have typical histopathological features.[4] Odontogenic tumors comprise a heterogeneous group of lesions that develop on the gnathic bones that ranges from hamartomas to benign and malignant neoplasms of variable aggressiveness. They are classified as epithelial, ecto-mesenchymal, and mesenchymal tumors, among which the most frequent odontogenic tumors are ameloblastomas, and odontomas.[5,6] It has been reported that Odontogenic tumors(OT) have a predilection for the entire facial region specifically, for the mandible and maxila.[7] The treatment of choice for OT is surgical operation; extirpation and curettage for benign type, and segmental resection for malignant type of OT. If left untreated, it could result in death within four to six months of diagnosis.[8] The present study was conducted to determine the prevalence of odontogenic cysts and tumors in a rural area.

MATERIAL AND METHODS:

The present study was conducted to determine the prevalence of odontogenic cysts and tumors in a rural area. Before the commencement of the study ethical approval was taken from the Ethical Committee of the institute. Cases included in the study were diagnosed as odontogenic cysts and tumors retrospectively over the period of two years. Data regarding gender, location were gathered from the clinical records, case notes and follow-up records in the files along with biopsy reports. Classification of the diagnosis was based on the International Statistical Classification of Diseases and Related Health Problems (ICD-10) published by World Health Organization. Data was analyzed using the SPSS — 20 (Chicago, IL-USA)) statistical software for Windows. Descriptive statistics and test of significance were appropriately applied and used. The critical level of significance was set at $P < 0.05$.

RESULTS:

Among the clinical records of 220 maxillofacial cases retrieved retrospectively over a period of two years, only 125 confirmed cases of odontogenic cysts and tumors were detected. odontogenic cysts were 76.8% and odontogenic tumors were 23.2%. Radicular cysts were prevalent in the study. Dentigerous cysts were 29 in no. and OKC were 13 in no. In men cysts were prevalent than women. Radicular cysts were 29 in no. in men and 22 in women. Calcifying odontogenic cysts and glandular odontogenic cysts were present only in males. OKC,OOC, Dentigerous cyst, Calcifying odontogenic cyst was present maximum in posterior mandible. Radicular cyst was maximum in anterior maxilla. Glandular odontogenic cyst was present in posterior maxilla. Unicystic Ameloblastoma was maximum in no. in the study. Ameloblastoma, Unicystic ameloblastoma, Plexiform unicystic ameloblastoma was maximum in males. Adenomatoid odontogenic tumor, Odontoma was present in females. Ameloblastoma, Unicystic ameloblastoma, Odontoma was maximum in posterior mandible. Adenomatoid odontogenic tumor was equally present in anterior maxilla and posterior maxilla. Plexiform unicystic ameloblastoma was present in anterior mandible.

Table 1: Distribution of odontogenic cysts and tumors among a sample

Variable	N(%)
odontogenic cysts	**96(76.8%)**
odontogenic tumors	**29(23.2%)**
Total	**125(100%)**

Table 2: Frequency of odontogenic cysts

Odontogenic cysts	N (%)
OKC	**13**
OOC	**1**
Dentigerous cyst	**29**
Radicular cyst	**51**
Calcifying odontogenic cyst	**1**
Glandular odontogenic cyst	**1**
Total	**96**

Table 3: Distribution of odontogenic cysts according to gender

Odontogenic cysts	Male	Female	Total
OKC	**11**	**2**	**13**
OOC	**1**	**0**	**1**
Dentigerous cyst	**16**	**13**	**29**
Radicular cyst	**29**	**22**	**51**
Calcifying odontogenic cyst	**0**	**1**	**1**
Glandular odontogenic cyst	**0**	**1**	**1**

Table 4: Distribution of odontogenic cysts according to location

Odontogenic cysts	Location			
	Anterior maxilla	Posterior maxilla	Anterior mandible	Posterior mandible
OKC	1	1	1	10
OOC	0	0	0	2
Dentigerous cyst	4	3	1	11
Radicular cyst	20	8	6	17
Calcifying odontogenic cyst	0	0	0	1
Glandular odontogenic cyst	0	1	0	0

Table 5: Frequency of odontogenic tumors

Odontogenic tumors	N(%)
Ameloblastoma	9
Unicystic ameloblastoma	14
Adenomatoid odontogenic tumor	2
Plexiform unicystic ameloblastoma	3
Odontoma	1
Total	29

Table 6: Distribution of odontogenic tumors according to gender

Odontogenic tumors	Male	Female	Total
Ameloblastoma	5	4	9
Unicystic ameloblastoma	9	5	14
Adenomatoid odontogenic tumor	0	2	2
Plexiform unicystic ameloblastoma	3	0	3
Odontoma	0	1	1

Table 7: Distribution of odontogenic cysts according to location

Odontogenic tumors	Location			
	Anterior maxilla	Posterior maxilla	Anterior mandible	Posterior mandible
Ameloblastoma	0	0	1	8
Unicystic ameloblastoma	0	0	4	10
Adenomatoid odontogenic tumor	1	1	0	0
Plexiform unicystic ameloblastoma	0	0	2	1
Odontoma	0	0	0	1

DISCUSSION:

Among the clinical records of 220 maxillofacial cases retrieved retrospectively over a period of two years, only 125 confirmed cases of odontogenic cysts and tumors were detected. Odontogenic cysts were 76.8% and odontogenic tumors were 23.2%. Radicular cysts were prevalent in the study. Dentigerous cysts were 29 in no. and OKC were 13 in no. In men cysts were prevalent than women. Radicular cysts were 29 in no. in men and 22 in women. Calcifying odontogenic cysts and glandular odontogenic cysts were present only in males. OKC, OOC, Dentigerous cyst, Calcifying odontogenic cyst was present maximum in posterior mandible. Radicular cyst was maximum in anterior maxilla. Glandular odontogenic cyst was present in posterior maxilla. Unicystic Ameloblastoma was maximum in no. in the study. Ameloblastoma, Unicystic ameloblastoma, Plexiform unicystic ameloblastoma was maximum in males. Adenomatoid odontogenic tumor, Odontoma was present in females. Ameloblastoma, Unicystic ameloblastoma, Odontoma was maximum in posterior mandible. Adenomatoid odontogenic tumor was equally present in anterior maxilla and posterior

maxilla. Plexiform unicystic ameloblastoma was present in anterior mandible.

In one study conducted in France by Meningaud et al., the files of patients operated upon under general anesthesia for odontogenic cysts were analyzed. It has been shown that the mean age of the patients was 41.8 ± 15.8 years. The lesions were more common in the mandible than in the maxilla (in a mandible to maxilla ratio of 3:1) with male predominance. The most frequently diagnosed odontogenic cysts found were radicular cysts (53.5%), dentigerous cysts (22.3%) and odontogenic keratocysts (19.1%).[8]

Radicular cyst also known as periapical cyst is the most common inflammatory cyst that results from epithelial proliferation within an inflammatory focus, due to dental caries resulting in pulpal infection leading to death and necrosis of the pulp.[9]

Radicular cyst accounted for 56.9% and 60.3% of all cysts, occurring more frequently in the anterior maxilla in the study done by Koseoglu et al.[10] and Jones et al.[11] respectively.

Some studies in North America[12] and Asia[13] showed a higher incidence of these tumors in females.

Mandible was the main anatomical location with a mandible:maxilla ratio of approximately 2.8:1[14].

CONCLUSION:

The present study concluded that there was a higher incidence of odontogenic cyst than odontogenic tumors, with a male predilection, posterior mandible being the most common site.

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