Research Article

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Assessment of Clinico- Pathological Analysis of Patients Presenting with Dentigerous Cyst in Tertiary Care Health Centre

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ABSTRACT

Background: A dentigerous cyst (DC) is one that encloses the crown of an unerupted tooth by expansion of its follicle, and is attached to its neck. The present study was clinico- pathological correlation of dentigerous cyst.

Materials & Methods: This study was conducted on 42 cases of dentigerous cysts in both genders. Parameters such as lesion location, presenting symptoms and treatment outcomes were recorded. Orthopantomogram (OPG) was done in all patients.

Results: Out of 42 patients, males were 30 and females were 12. The most common location was 3rd molar in 20, canine in 8, premolar in 3, supernumerary teeth on 10 and incisor in 1 case. The difference was significant (P< 0.05). Common type was central in 22, lateral in 12 and circumferential in 8 cases. The difference was significant (P< 0.05).

Conclusion: Authors found that most commonly involved tooth with DC was mandibular third molar followed by supernumerary teeth.

Keywords: Dentigerous cyst, mandibular third molar, Supernumerary teeth.

INTRODUCTION

A dentigerous cyst (DC) is one that encloses the crown of an unerupted tooth by expansion of its follicle, and is attached to its neck. It is the second most common odontogenic cyst after radicular cysts, accounting for approximately 24% of all true cysts in the jaws. They are usually associated with impacted teeth. In some instances they may be associated with supernumerary teeth and odontomas. Dentigerous cysts are often discovered incidentally when radiographs are taken to investigate a failure of tooth to erupt, a missing tooth or mal-alignment.[1]

A typical DC presents clinically as an asymptomatic unilocular radiolucency enclosing the crown of an unerupted or impacted tooth; the radiolucency usually arises in the cementoenamel junction (CEJ) of the tooth.[2] In most cases, the diagnosis of a DC is straightforward; but even a radiographically 'typical' DC can be found to be something else, such as a dental follicle, hyperplastic dental follicle, odontogenic keratocyst (keratocystic odontogenic tumour, KCOT) or unicystic ameloblastoma on histological analysis. Multiple DCs were thought to be rare and exclusively associated with syndromes or systemic conditions, such as mucopolysaccharidosis and cleidocranial dysplasia.[3]

It is proposed that dentigerous cyst arises from pooling of inflammatory exudate, which is derived from the obstructed follicular veins of an unerupted tooth and accumulates between the reduced enamel epithelium and the crown of the tooth.[4] It enlarges by unicentric expansion from the hydrostatic

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pressure of its contents. It may also occur due to fluid accumulation between the layers of the enamel organ.[5] Another theory proposes that degeneration of stellate reticulum at an early stage of tooth development results into formation of a cyst associated with enamel hypoplasia.[6] The present study was clinico- pathological correlation of dentigerous cyst.

MATERIALS & METHODS

This study comprised of 42 cases of dentigerous cysts in both genders. All the DCs have been reviewed histologically to confirm the diagnosis. All patients were informed regarding the study and their consent was obtained. The permission of the study was obtained from institutional ethical committee.

General data such as name, age, gender etc. was recorded. Parameters such as lesion location, presenting symptoms and treatment outcomes were recorded. Orthopantomogram (OPG) was done in all patients. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I: Distribution of patients

Total- 42		
Gender	Males	Females
Number	30	12

Table I shows that out of 42 patients, males were 30 and females were 12.

Table II: Location distribution of DCs

Location	Number	P value
3rd molar	20	0.01
Canine	8	
Premolar	3	
Supernumerary	10	
Incisor	1	

Table II, graph I shows that most common location was 3rd molar in 20, canine in 8, premolar in 3, supernumerary teeth on 10 and incisor in 1 case. The difference was significant (P< 0.05).

Graph I: Location distribution of DCs.

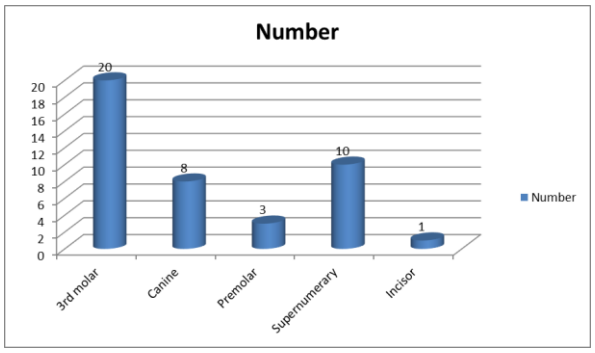
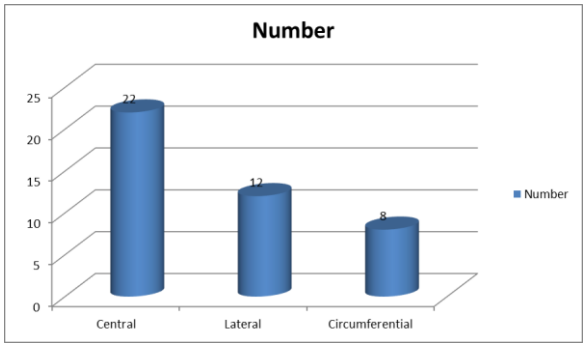


Table III: Type of DCs.

Type	Number	P value
Central	22	0.01
Lateral	12	
Circumferential	8	

Table III, graph II shows that common type was central in 22, lateral in 12 and circumferential in 8 cases. The difference was significant (P< 0.05).

Graph II: Type of DCs.



DISCUSSION

Dentigerous cyst is most commonly associated with mandibular third molars followed by maxillary canines, mandibular second premolars and maxillary third molars in decreasing order of frequency.[7] Since majority of these cysts are asymptomatic they are frequently discovered as an incidental finding on radiographs when these are taken because a tooth has failed to erupt or a tooth is missing, or because teeth are not aligned. Patients may also notice them because of appearance of slowly enlarging swellings.[8] The exact pathogenesis is not known however most authors favour a developmental origin related to the developmental crypt that surrounds the crown of an unerupted

tooth of a normal or a supernumerary dentition.[9] The present study was clinico- pathological correlation of dentigerous cyst.

In present study, there were 42 cases, of which males were 30 and females were 12. We found that most common location was 3rd molar in 20, canine in 8, premolar in 3, supernumerary teeth on 10 and incisor in 1 case. Sharma et al[10] in their study 14 cases of dentigerous cysts were diagnosed. The mean age of occurrence of dentigerous cyst was 23.35 years. Out of 14 cases 5 (35.71%) were females, and 9 (64.29%) were males. The most common site for DC was the mandibular molar region. Conclusion: The most frequent involved site was the posterior region of the mandible and the most commonly associated tooth was the third molar tooth. The cysts had a tendency to displace associated and/or adjacent teeth. Enucleation and marsupialization were successful treatment modalities with no recurrence seen in any of the patients.

We found that common type was central in 22, lateral in 12 and circumferential in 8 cases. Zhang et al[11] found that multiple DCs, representing 2.5% of the cases, are not associated with any syndromes or systemic conditions. 0.5% DCs were associated with other cysts or tumours at the same site or the opposite side of the jaw. The authors report the first series of cases presenting clinically as bilateral DCs, but histologically as an odontogenic tumour or another type of odontogenic cyst. DCs can co-exist with other more serious conditions, such as odontogenic keratocyst or cystic ameloblastoma. This association with more significant conditions indicates the importance of histologically confirming any jaw cyst, even when it presents clinically as a classic DC.

Enucleation and marsupialization are two treatment modalities indicated. MacDonald et al[12] found that the mean age was 28.6 years. There was a 58:42 predilection for men and a 64:36 predilection for the mandible. This predilection was significantly greater for Caucasians than for Asians. Among Asians, Chinese people had a significantly greater predilection for the maxilla.

The limitation of study is small sample size.

CONCLUSION

Authors found that most commonly involved tooth with DC was mandibular third molar followed by supernumerary teeth.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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