

A CASE REPORT OF DENTIGEROUS CYST ASSOCIATED WITH MANDIBULAR PREMOLAR IN PAEDIATRIC PATIENT

Basavaraj C Sikkerimath¹, Mustafa I Merchant², Semmia Mathivanan^{3*}, Sriram Kaliamoorthy⁴

¹Professor &HOD, Department of Oral & Maxillofacial Surgery, P.M.N.M Dental College & Hospital, Bagalkot, 587 101, Belgaum, Karnataka, India.

²Consultant, Oral & Maxillofacial Surgeon, ³Senior Lecturer, ⁴Senior Lecturer, Dept of Oral & Maxillofacial Surgery, Chettinad Dental College and Research Institute, Chettinad Health City Campus, Kelambakkam, Kancheepuram District, Tamilnadu 603103, India.

Article Info

Received 15/03/2015

Revised 27/03/2015

Accepted 25/04/2015

Key words: Dentigerous cyst; Odontogenic cyst.

ABSTRACT

Odontogenic cyst of the jaw can be benign or malignant. Dentigerous cyst is benign developmental cyst associated with an unerupted tooth. They are more common in second and third decade of life, however 9% of cases can occur in mixed dentition. We hereby discuss a clinical case of dentigerous cyst in the mandibular premolar of a 10-year-old child.

INTRODUCTION

Dentigerous cyst is a developmental abnormality formed by fluid accumulation between the tooth crown and the reduced enamel epithelium of an unerupted tooth. Clinically they usually present as painless, well defined, unilocular lesion surrounding crown of the affected tooth causing root resorption or displacement of the adjacent teeth. Pulpal infection of the primary teeth can progress as periapical lesion and infect the dental follicle of the underlying permanent successor teeth which subsequently result in development of dentigerous cysts in relation to relevant permanent teeth [1,2].

Case Description

A male patient aged 10 years reported to the Department of oral and maxillofacial surgery, P.M.N.M Dental College with complaint of pain in the left lower back tooth region since 15 days. Patient's family and medical history were non contributory.

Intra oral examination revealed patient with mixed dentition, obliteration of the vestibule is seen in relation to 74 to 36 and was tender on palpation. Orthopantomograph revealed unerupted 34, 35 surrounded by well defined, single unilocular radiolucency, extending from the mesial root of the 74 distally upto the mesial surface of 36. Lesion was found to be attached to the cement-enamel junction of the 34 and displacement of 35 towards the inferior border of the mandible was seen. (Figure -1)

Based on the clinical and radiographic features a provisional diagnosis of dentigerous cyst was made and complete enucleation of the cyst was planned under general anesthesia and surgical enucleation of the cyst was done by giving vestibular incision extending from 33 to 36. Impacted 34 and displaced 35 were also extracted and inferior alveolar nerve was carefully preserved. Primary closure was done using vicryl. Gross specimen showed cystic lesion attached to the CEJ of the 34. (Dentigerous relation) (Figure 2 A & B). Microscopic examination of the H&E stained sections of excised specimen basically showed cystic lining composed of thin non - keratinized epithelium consisting 2 - 4 layers of flattened cells and

Corresponding Author

Semmia Mathivanan
drsemmia@gmail.com



surrounding connective tissue capsule. The epithelium – connective tissue interface appeared flat and numerous islands of odontogenic epithelial cell rests were seen in the

fibrous capsule. (Figure – 3) One year post operative follow-up revealed satisfactory healing and no recurrence of the lesion. (Figure - 4)

Figure 1. Orthopantomogram (OPG) showing well defined, unilocular radiolucency, associated with unerupted 34 & 35.



Figure 2. Surgical enucleation of the lesion (A), Enucleated cystic lesion attached to the CEJ of the extracted 34



Figure 3. Cystic lining composed of epithelium (2 to 4 layers of flattened cuboidal cells) and fibrous capsule

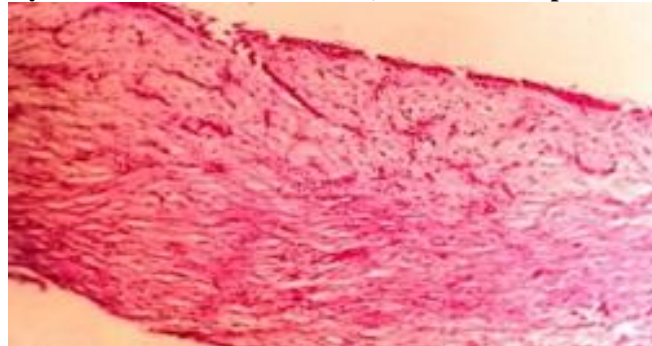


Figure 4. Post operative OPG showing satisfactory healing (1 year follow up)



DISCUSSION

The most common lesions which lead to jaw swellings are odontogenic cysts and tumors. Dentigerous cyst is an epithelial – lined developmental cyst that encloses crown of an unerupted tooth at cemento-enamel junction and thus it is also named “tooth containing cyst” [1]. They are more commonly associated with impacted third molars followed by maxillary canine [2].

Dentigerous cyst usually grows asymptotically to large size however small cysts are usually found as incidental findings in radiograph taken to evaluate the missing or unerupted tooth. Early diagnosis of this type of cyst in children is important, as growth can be rapid and can cause complication such as bone fractures and resulting jaw deformation. Also histopathological complications such as mural ameloblastoma can arise from its epithelial lining in long standing dentigerous cyst lesions [3]. The common pathogenesis of dentigerous cyst in mixed dentition is believed to be periapical infection of primary molars causing inflammation of the pericoronal dental follicular tissue surrounding the unerupted permanent teeth [4]. Other suggested theory states that the crown of a permanent tooth may erupt into radicular cyst of a primary tooth resulting in the formation of an extra follicular dentigerous cyst. But this process appears to be

rare” [1]. Radiographically the characteristic feature is radiolucency surrounding the crown of an impacted tooth [5]. The differentiation from the normal dental follicle, for early lesion is essential and literatures suggest that any follicular space of more than 4mm to be considered as dentigerous cysts.

Radiographically the cyst can be described as central, lateral and circumferential type based on its relationship to the unerupted/impacted crown. Most common differential diagnosis of dentigerous cyst includes enlarged dental follicle, odontogenic keratocyst, adenomatoid odontogenic tumor and unicystic ameloblastoma. Also some odontogenic tumours such as calcifying epithelial odontogenic tumour, ameloblastic fibroma can present itself in dentigerous relation. Multiple dentigerous cysts may be seen in syndromes with characteristic feature of multiple impacted teeth e.g., maroteaux lamy syndrome [5]. Histopathological features includes non-keratinized thin epithelial lining comprising 2-4 layers of cuboidal - flattened cells, surrounded by loose fibrous capsule consisting excess glycosaminoglycans and odontogenic epithelial cells rests islands. Keratin metaplasia, ciliated cells, mucous cells and sebaceous cells also can be seen occasionally. Infected cysts shows altered

features such as epithelial hyperplasia, more collagenous capsule with chronic inflammatory cell infiltration [3,6]. The treatment in mixed dentition patient depends on the size and adjacent vital structures and also the position of the impacted tooth. Conservative management option like marsupialization which allows the teeth to erupt if it is in the favourable position is the treatment of choice in young patients. However in our patient complete enucleation and removal of the impacted tooth in relation to 34 and 35 was done since eruption seemed unlikely. One year follow up

showed that the wound healed satisfactorily with healthy bone regeneration without any post-operative complications.

CONCLUSION

Pulpal infection and impacted tooth in children are common, hence routine dental examinations and early detection of common jaw lesions such as dentigerous cyst is essential to prevent more serious complications involving jaw.

REFERENCES

1. Nagaveni NB et al. (2011). Inflammatory dentigerous cyst associated with an endodontically treated primary second molar, a case report. *Archives of Orofacial Sciences*, 6(1), 27-31.
2. Bhat S. (2001). Unusual presentation of dentigerous cyst in a young child, a case report. *J Indian Soc Pedo Dent*, 19(1), 21-23
3. Takeda Y et al. (2005). Mucous and ciliated cell metaplasia in epithelial linings of odontogenic inflammatory and developmental cysts. *Journal of Oral Science*, 47, 77-81.
4. Neville BW et al. (2009). Odontogenic cysts and tumors In, Neville BW, Damm DD, Allen CM, Bouquot JE. *Oral and Maxillofacial Pathology*. 3rd ed., Ch. 15. Philadelphia, Saunders, an Imprint of Elsevier, 679-82.
5. Roberts MW et al. (1984). Occurrence of multiple dentigerous cysts in a patient with the maroteaux-lamy syndrome (Mucopolysaccharidosis, Type VI). *Oral Surg Oral Med Oral Pathol*, 58, 169-75.
6. Chih-Jen Wang et al. (2009). Dentigerous Cyst Over Maxillary Sinus, a Case Report and Literature Review. *J Oral Maxillofac Surg*, 20, 116-124.

