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Research Article

MARSUPALISATION OF LARGE CYST IN PEDIATRIC PATIENTS

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ABSTRACT

A dentigerous cyst or follicular cyst is an odontogenic cyst associated with the crown of an unerupted tooth. Such cyst remain initially completely asymptomatic unless when infected. The purpose of this case report was to describe the diagnosis and management of dentigerous cyst in a 9-year-old boy. The chosen treatment was cyst marsupalisation.

INTRODUCTION

A cyst is a pathologic cavity having fluid, semifluid, or gaseous contents that are not created by the accumulation of pus; frequently, but not always, is lined by epithelium**.** Dentigerous cysts are odontogenic cyst, which enclose the crown and are attached to the neck of the tooth. Thus, they generally appear during tooth development in young patients. The frequency of dentigerous cysts in children has been reported low in dental literature. Dentigerous cysts occur predominantly in the third molar region of the mandible. These cysts are often asymptomatic unless there is an acute inflammatory exacerbation and, therefore, these lesions are usually diagnosed on routine radiographic examination.[1] Swelling, tooth mobility, teeth displacement, and sensitivity may be present if the cyst reaches the size larger than 2 cm in diameter[.2] Radiographs show a unilocular radiolucent lesion with well-defined sclerotic margins that is associated with the crown of an unerupted tooth. Radicular resorption of teeth in the region of the lesion is common. The complications associated with dentigerous cyst include pathologic bone fracture, loss of permanent tooth, bone deformation, and development of squamous cell carcinoma. Since the cyst may increase in size, the indicated treatment is surgical removal of lesion and involved teeth, or decompression to salvage the involved teeth.[3]

Acc. to Edward Ellis III

There are two basic goals of surgery

1. Eradication of pathologic condition
2. Functional rehabilitation of the patient

Excision of some oral pathology necessitates an aggressive approach that must sacrifice adjacent structures in an attempt to thoroughly remove the lesion, using this approach on a simple cyst is not justified. It is therefore imperative to identify the lesion histologically with a biopsy before undertaking any major extirpative procedure. Only then can the appropriate surgical procedure be chosen to eradicate the lesion with as little destruction of adjacent normal tissue as is feasible. The best results are obtained when future reconstructive procedures are considered before excision of lesions.

The present case reports focuses on the conservative management of dentigerous cyst considering the regenerative potential and eruption strength of incompletely formed roots, thus facilitating the esthetic and functional rehabilitation of the patient.

Case Report 1

A 9 year old boy presented with the chief complaint of painless swelling of 2 months duration on the right cheek. The swelling gradually increased in size.

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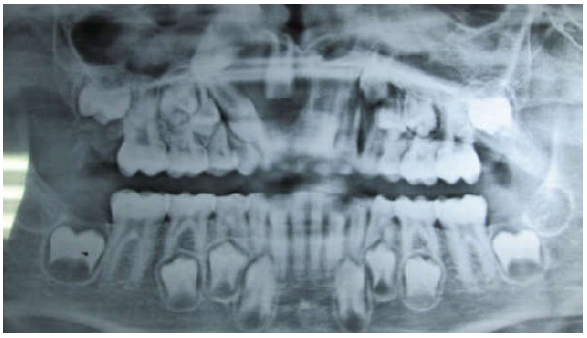
On extra oral examination, facial asymmetry was appreciated on the right side of face along with the elevation of nasal wing. Intra-oral examination revealed an expansion of the right maxillary buccal cortical plate extending from retained primary central incisor to canine. Abscess in relation to primary lateral incisor was present.

Clinical pre operative view



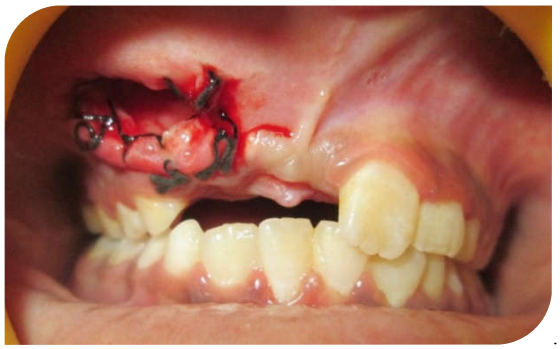
Panoramic radiograph revealed a well defined circular radiolucent area

FNAC show blood stained straw coloured fluid

Based on clinical, radiological and aspiration biopsy an provisional diagnosis of dentigerous cyst was made. Because size of the swelling was large and natural eruption was possible it was decided to perform marsupialization.

- A circular incision was given.
- Since bone was expanded and thinned, the initial incision was extended through the bone in to the cystic cavity. The cyst membrane was sutured to oral mocosa to create a window.
- A specimen of cyst was sent for histopathological examination which revealed the absence of keratinized epithelium confirming the lesion was dentigerous cyst.
- Patient was instructed to irrigate the cavity twice a day with an oral antiseptic rinse.

Cystic cavity



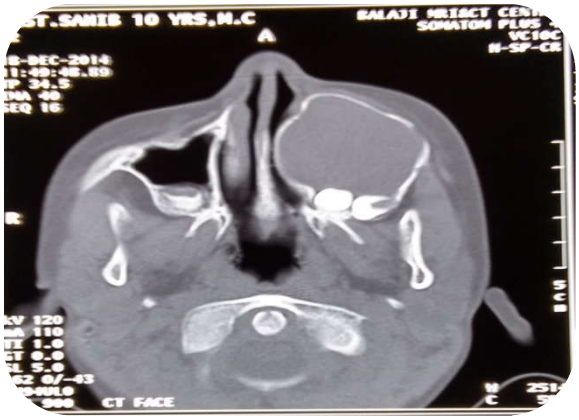
Cavity healed uneventfully

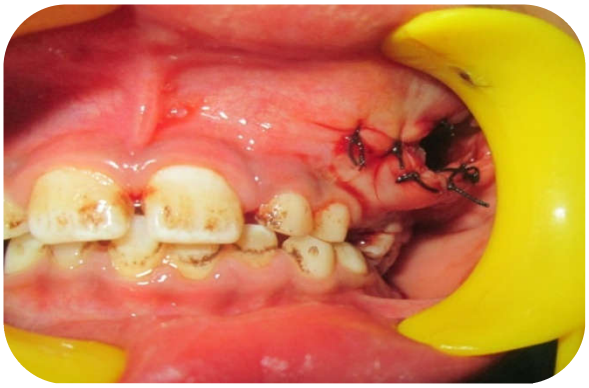
Permanent central incisor and lateral incisor erupted in oral cavity in about 9 months.

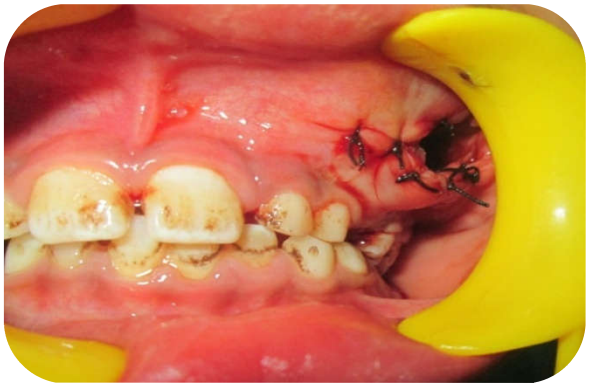
Case report 2

A 8 year old boy presented with chief complain of swelling and pain on his right cheek since 1 month. The extra-oral examination revealed swelling which was extending from lower infra orbital margin till middle of the face. Swelling was fluctuant, tender and has gradually increased to present size Intra-oral examination revealed expansion of maxillary buccal cortical plate along with the obliteration of buccal sulcus. Left first primary molar was grossly decayed.

Panoramograhic view showed a unilocular radiolucency involving first premolar but this radiolucency has displaced permanent canine and second premolar bud. CT axial bone window revealed a well defined expansile lesion of mixed density involving the maxillary sinus. Medial wall is pushed towards the maxillary sinus, Floor of maxillary sinus apperas to be intact.







Marsupalisation was planned. Circular incision into cystic cavity was made and cystic lining was sutured with oral epithelium. Patient was advised to rinse cavity with oral antiseptic solution twice daily and dressing was changed biweekly till cavity healed in about 4 months.

DISCUSSION

Though the pathogenesis of DC appears to be acceptable widely as developmental, two types of DCs are reported, namely, developmental and inflammatory in origin. Benn and Altini proposed two different processes for cystic degeneration: The first phenomenon is usually associated to the compression promoted by the tooth eruption at the pericoronary follice, which induces fluid accumulation between this tissue and crown The second mechanism is associated to an apical inflammation in the primary predecessor whose cytokines stimulates cystic degeneration of the permanent teeth [4,5] Consequently, the findings in our case reveal the cyst as an inflamed DC and can postulate that the necrotic pulpal inflammation could be the source of inflammation present at the root apex which eventually involved the follicle of the unerupted immature permanent successor. Therefore, the appearance of IDC is most commonly found involving the mixed dentition stage, similarly in our case also both the children were in mixed dentition stage, and the cyst had

involved the successor permanent teeth impeding their path of eruption therefore necessitating conservative management like marsupialization /decompression.

However, as proposed by Kozelj and Sotosek leaking out of cystic fluid during an extraction of a primary tooth or during a decompression respectively, confirms the clinical impression of the cyst, but to ascertain the type of cyst for proper management and to prevent morbidity, histopathologic confirmation is mandatory. So in both the cases here a FNAC was done in the initial appointment which was sent for histopathological examination and gave an evidence of inflammotory cyst, which were then planned for marsupialization.

Marsupialization / decompression was the treatment of choice because enucleation in such case would sacrifice impacted permanent teeth in an adolescent female. Tooth loss at a young age will affect the occlusion, function, and esthetic appearance Mandibular cysts are normally marsupialized into the oral cavity , although maxillary cyts can be marsupialized into the max sinus or nasal cavity as well as the oral cavity .[6,7] Marsupialization had been recommended in the treatment of the high recurrent cysts When a marsupialization procedure is performed , the risk of eruption failure remains which can lead to the need of removal of cyst associated permanent teeth . As a result patient must wait longer than necessary before a treatment plan can be determined.

Marsupialization offers various benefits that includes preservation of oral tissues, avoidance of surgical damage to vital structures, maintainence of pulp vitality, prevention of dental extractions of developing tooth, gradual decrease in size of pathology, decrease in the incidence of pathological fractures and minimal surgical morbidity. However disadvantages like pathologic tissue left in situ without thorough histologic examination and a long followup with oral hygiene maintainence of cavity is a limitation to this treatment plan.

CONCLUSION

In a study by kalaskar *et al* the frequency of IDC was reported to be 1.7% and 79% of these children had history of dental caries associated with the pathology. Such data necessitates the importance of maintainence of Primary dentition for prevention of such devastating sequelae.

Although marsupialization therapy has an advantage in preserving a cyst associated tooth and promoting spontaneous eruption of involved tooth, but an accurate predictive indicators of tooth eruption should be formulated to reduce patient distress and the waiting period for orthodontic intervention.

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