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Case Report

Bilateral dentigerous cyst involving mandibular first molars- a case report

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ABSTRACT:

Dentigerous cyst is one of the common odontogenic cysts and they are associated with unerupted or impacted teeth. However, multiple dentigerous cysts are rare and they are usually associated with syndromes such as basal cell nevus syndrome, mucopolysaccharidosis (type VI) or cleidocranial dysplasia. Very few cases of multiple dentigerous cysts involving first permanent molars are reported.

This report is of a rare case of bilateral dentigerous cyst involving mandibular first molars in a non- syndromic 7 year old male patient. A provisional diagnosis of a dentigerous cyst was given based on clinical finding of missing 36 and 46 with buccal cortical plate expansion and presence of a pericoronal radiolucency attached to the CEJ irt to 36 and 46 on panoramic image. The computed tomographic finding revealed a well defined expansile cystic lesion in right and left mandibular molar regions. Enucleation of the cyst with extraction of 36 and 46 was done and the specimen was sent for histopathological examination which confirmed the diagnosis of dentigerous cyst.

Key words: Bilateral dentigerous cyst, basal cell nevus syndrome, cleidocranial dysplasia mucopolysaccharidosis (type VI), mandible.

Introduction

Dentigerous cysts (DC) are associated with unerupted or impacted teeth mainly mandibular third molars followed by maxillary canine and maxillary third molars. [1]The occurrence of multiple dentigerous cysts is rare and they are usually associated with syndromes such as basal cell nevus syndrome, mucopolysaccharidosis (type VI) or cleidocranial dysplasia. [1] This presentation is of nonsyndromic bilateral DC involving mandibular first molars.

Case report

A 7 year old boy presented with pain and swelling on the left side of face since 1 month. The swelling was of primary incidence, insidious in onset , initially it was small and gradually increased to the present size. The swelling was associated with a dull pain which was mild in intensity and used to appear on chewing food and subside on its own after some time. No other related history was significant. General examination was normal.

On inspection a diffuse swelling of the left side of the face was seen measuring 3X3 cm, extending from the angle of the mouth to the tragus of the ear,2 cm below the infra orbital margin to lower border of the mandible (fig 1).

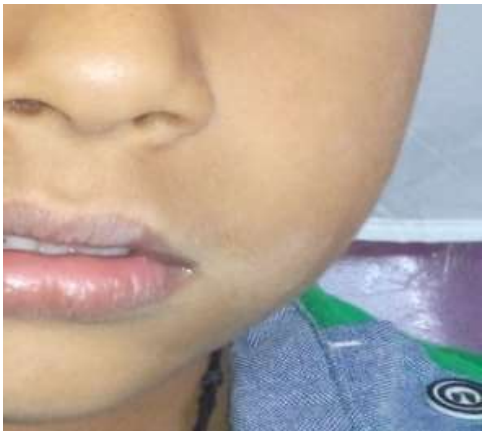

Fig 1: Extra oral photograph showing a diffuse swelling on the left side of the face

The skin over the swelling appeared normal. On palpation there was no local rise in temperature.The swelling was non tender, non pulsatile, soft and in some areas it was bony hard.

Intraorally hard tissue examination revealed deep dental caries irt to 74 and 75 which were tender on percussion and non mobile. There was missing 36 and 46 (figure 2 and figure 3).

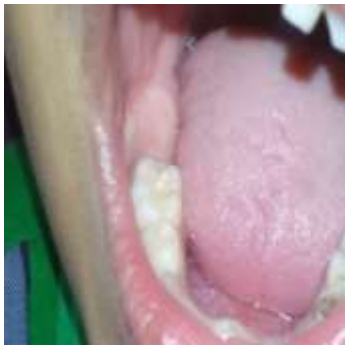
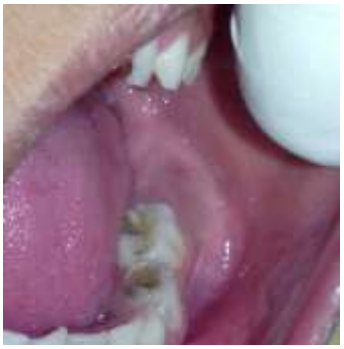

Fig 2 and Fig 3: Intra oral photograph right and left side

On soft tissue examination, vestibular obliteration was noted extending from 75 region to the left retromolar area. The alveolar ridge irt missing 36 region appeared swollen and was in continuation with vestibular obliteration. The overlying mucosa appeared normal. On palpation there was buccal cortical plate expansion in missing 36 region and the mucosa was tender and soft in consistency. However in the retromolar area it was bony hard in consistency. 84 and 85 were normal.

Based on the history and clinical findings a provisional diagnosis of radicular cyst irt 75 was given.

The differential diagnosis of DC irt unerupted 36, Ameloblastic fibroma ,Keratocystic odontogenic tumour were considered.

Needle aspiration yielded straw coloured blood tinged fluid. On occlusal radiograph buccal cortical plate expansion was noted extending from the distal aspect of 75 and beyond 36. Thinning of the cortical plate was noted with no evidence of perforation. Lingual cortical plate appeared normal (fig 4).

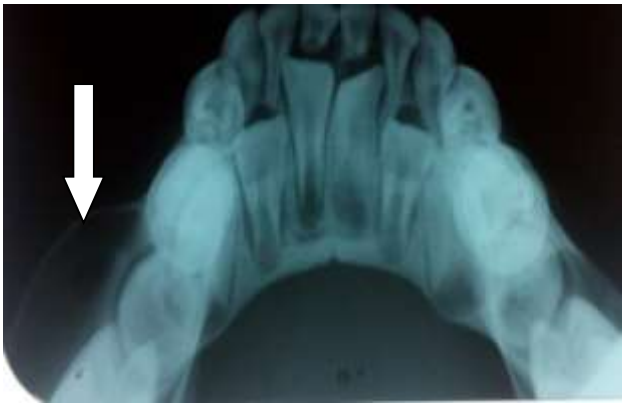

Fig 4 : Occlusal radiograph showing buccal cortical plate expansion

Panoramic radiograph showed solitary, unilocular, pericoronal radiolucency irt to unerupted 36 measuring 1.5x1.5 cm encircling the entire coronal aspect at its cementoenamel junction (CEJ). Corticated borders were noted on the mesial and distal aspect of the radiolucency, with break in cortical outline in the superior aspect. The internal structure was completely radiolucent. Distal root resorption was noted irt to 75. A similar pericoronal radiolucency was noted irt to unerupted 46 with distal root resorption irt to 85(fig 5).

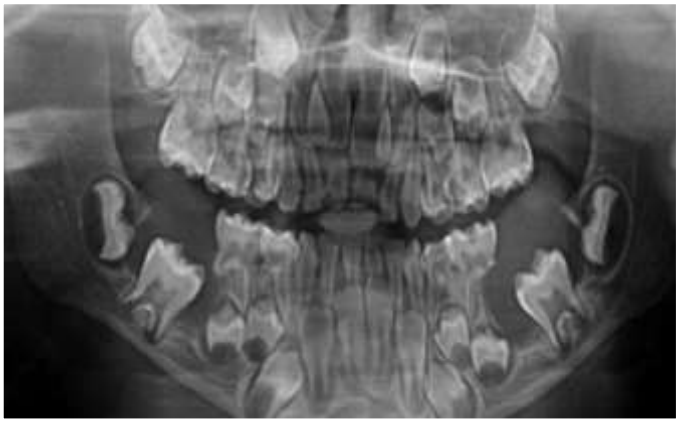

Fig 5: Panoramic radiograph showing pericoronal radiolucency on both right and left side.

Computed tomography (CT) revealed a well defined expansile cystic lesion measuring 18x19x15mm in the left unerupted mandibular 1st molar region with mild displacement of first molar and 9x8x8mm in the right unerupted mandibular 1st molar region. There was no evidence of adjacent soft tissue lesion or cortical break(figure 6 and figure 7).

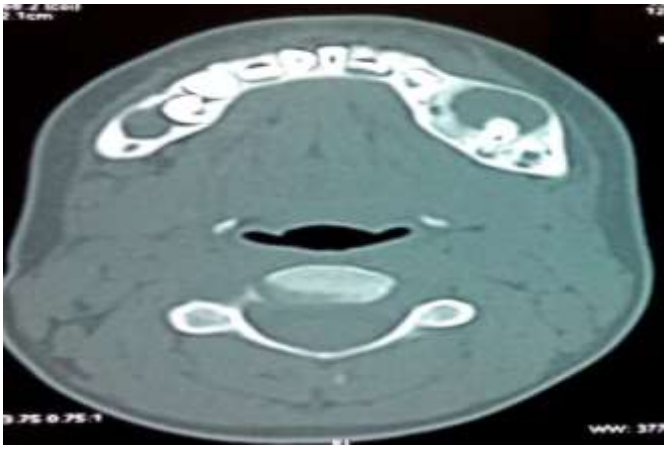
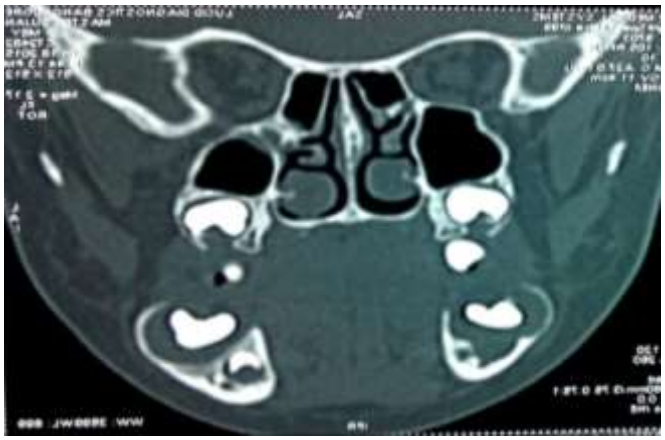

Fig 6 and Fig 7: CT scan images

Based on the imaging findings a diagnosis of bilateral DC involving 36 and 46 was given. Radiographic differential diagnosis included ameloblastic fibroma ,unicystic ameloblastoma, keratocystic odontogenic tumour ,calcifying epithelial odontogenic tumour and adenomatoid odontogenic

tumour .

Enucleation of the lesion with extraction of 36 and 46 was carried out and the surgical specimen was sent for hitopathological examination(figure 8).

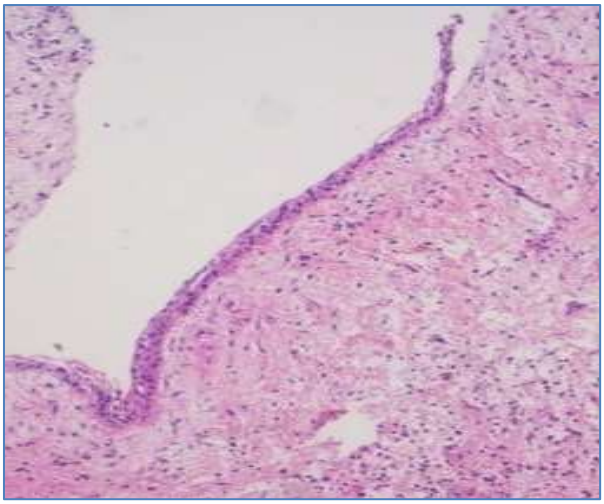

Fig 8: Histopathological photomicrograph showing features of dentigerous cyst

Histopathology

The hematoxylin and eosin stained sections reveal a cyst lined by flattened non keratinized stratified squamous odontogenic epithelium which is 3-4 layers thick and resembling reduced enamel epithelium. The surrounding capsule is fibrovascular with areas of inflammation. Few epithelial rests are also seen. Features confirmed the diagnosis of dentigerous cyst(figure 9).

DISCUSSION

A DC can be defined as a cyst that encloses the crown of an unerupted tooth, expands the follicle and is attached to the CEJ of the unerupted tooth.[2]DC are the second most common odontogenic cysts after radicular cysts, accounting for approximately 24% of all true cysts in the jaws.[3] Although DC may be encountered in patients across a wide age range, they are discovered most frequently in patients between 10 and 30 years of age.[3] There is a slight male predilection, and the prevalence is higher for whites than for blacks. [3] The reported case is a bilateral DC involving mandibular first molars in a non- syndromic 7 year old male patient.

DC are associated with unerupted or impacted teeth mainly mandibular third molar followed by maxillary canine and maxillary third molar.[1] There are very few reports of non syndromic multiple DC especially in molars.[4] Till 2014, only 29 cases of non –syndromic multiple DC have been reported. [5] The present case is in a nonsyndromic 7 year old male.

Small DC are usually asymptomatic and are discovered only on routine radiographs.[2] However few patients present with symptoms [2] of pain and swelling in the region of a clinically missing tooth. Large DC may be associated with a painless expansion of the bone.[2] On aspiration dentigerous cyst yeilds straw coloured fluid.[2] In the present case the patient presented with pain and swelling on left side of the face and in the region of missing 36. There was bilateral expansion of buccal cortex and the aspiration yielded straw colored fluid.

Radiographically the epicenter of a DC is found just above the crown of the involved tooth. [6]An important diagnostic point is that this cyst attaches at the CEJ.[6] DC causes resorption of adjacent tooth roots in 55% of cases.[6] In the present case there was a unilocular pericoronal radiolucency attached to the CEJ of an impacted mandibular 1st molar blaterally. Also there was root resorption of adjacent primary mandibular 2nd molars.

Differential diagnosis of unicystic ameloblastoma, ameloblastic fibroma, keratocystic odontogenic tumour, calcifying epithelial odontogenic tumor and adenomatoid odontogenic tumour were considered.

Unicystic ameloblastoma is usually seen in 3rd decade of life with equally affecting males and females.[7]Radiographically it presents as a pericoronal radiolucency involving unerupted mandibular 3rd molars (uncommon to involve first molars). [7]It causes knife edge type of resorption of adjacent tooth roots and displacement of teeth. [3]Buccal cortical plate expansion is noted. The CT scans show different CT numbers (cytic and tumor tissue). [7]

Ameloblastic fibroma may present as a large (upto 4cms) unilocular or multilocular radioluceny involving mandibular posterior tooth in the 2nd decade of life. [8] DC can be differentiated from this lesion by the pericoronal radiolucency which envelops the CEJ of the involved tooth.

Keratocystic odontogenic tumour is seen in 2nd and 3rd decade of life, common in males, associated with pain, swelling and discharge in 40% of cases involving more commonly posterior mandible and only 27% involving impacted teeth.[9] It grows in anterior-posterior direction and does not expand the buccal cortex. [9]Adenomatoid odontogenic tumour has narrow age group of 13 to 18 years, female predilection, 40-60% cases seen in an anterior maxilla usually canine.[10] 70% of lesions in mandible occurs in anterior region. Root resorption is rare. Radioopaque foci appears in 2/3rd cases.[10]Both root and crown is enveloped by the lesion.[10]

Other rarities like calcifying odontogenic cyst, calcifying epithelial odontogenic tumor and odontome can be associated impacted tooth however these lesions are characterized by presence of radioopague foci.[9]

Conclusion

Though bilateral dentigerous cyst involving mandibular molars is rare, this entity may cause significant destruction of bone. It may have profound effect on psychology of child. Management of this type of lesion has good prognosis if detected and diagnosed at earliest .

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