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Case Report

A rare entity-lateral inflammatory follicular cyst

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ABSTRACT

Sometimes, there is failure in tooth eruption not because of any physical barrier or abnormal position. The reason for the failure of tooth eruption in this current case is due to uncommon phenomenon. There was a swelling in the lower canine region bilaterally with impacted the 32,33,42 and 43. This case also shares a detailed CBCT report and microscopic features of the rare entity, the lateral inflammatory follicular cyst.

1. Introduction

Movement of the tooth from its position of development in the alveolar process towards its functional position in the mouth is defined as tooth eruption. So, dental follicle plays a coordinated role for resorption and deposition of bone on opposing sides of erupting tooth during the intraosseous movements.[1] Due to the different causes at any stage of tooth development including mechanical interference, failure of eruptive process, Genetic and environmental factors there might be a cessation in the tooth eruption.[2–4] Benn and Altini stated that the non-vital primary tooth produces periapical inflammation thus paving the way for the inflammation which affects the permanent successor resulting into inflammatory follicular cyst.[5] The most commonly affected teeth due to primary failure of eruption are the posterior teeth and unilateral or bilateral involvement with compromised primary or permanent teeth. There was also one review of the literature which reported that the primary failure of tooth eruption is rare and not linked to the alteration of dental follicle.[6]

This case report describes a swelling in the lower canine region bilaterally with impacted 32, 33, 42 and 43 presenting microscopic, clinical and detailed CBCT findings compatible with follicular cystic lesion.

2. Case Report

2.1. Clinical features

A 11-year boy reported with the chief complaint of pain and swelling in lower jaw region. According to patient, swelling had gradually developed over some months. On intraoral examination the swelling was firm in nature in the anterior mandibular region. The overlying mucosa was normal in color and texture. The lesion extends from the mesial portion of apical zone of 44 till the distal portion of apical region of tooth 42. Supero-inferiorly the lesion involving the cervical-middle & upper apical portion of the alveolus. The lesion involves the pericoronal region & labial apical region of developing tooth 43 and vertically impacted tooth 42. The lesion measures approx. 15mm x 8mm x 20mm in the greatest antero-posterior, transverse & supero-inferior dimensions respectively.

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2.2. Radiographic features

OPG investigation revealed that the margins were distinct & non corticated. Internal contents were completely radiolucent with no internal calcifications / septations. Thinning & effacement were seen of the crest of the alveolus. Overlying deciduous teeth showed root resorption. Retained root fragment of 84 was seen supra-crestally. Thinning was also noted of the adjoining labio-buccal cortex. The lingual cortex appeared intact. In 42 there was axial rotation & vertical impaction was seen with mesial third breaching the alveolus. Acute distal dilaceration was seen in the apical third of the root and 43 was axially rotated, vertically aligned and a mid distal dilaceration was seen in the apical third of the root. Open root apex was also seen. A well-defined minimally expansile osteolytic lesion was seen in the left symphysis – para-symphysis region. The lesion extended from the mesial peri-radicular region of 34 till the distal peri-radicular region of tooth 32. Supero-inferiorly the lesion involving the cervical-middle portions of the alveolus. The lesion involved the pericoronal region of developing tooth 33 & vertically impacted tooth 32. The lesion measured approx. 20mm x 11mm x 15mm in the greatest antero-posterior, transverse & supero-inferior dimensions respectively. The margins were distinct with partially corticated margins. Internal contents were completely radiolucent with no internal calcifications / septations. Early endosteal new bone formation was observed along the inferior aspect of the lesion. Effacement was seen of the crest of the alveolus. Tiny osseous / root fragments were seen supra-crestally in the 33 region. Thinning, mild expansion & partial effacement was seen of the adjoining labio-buccal cortex. Thinning was also noted of the mandibular lingual cortex. In 32 the Vertical impaction was seen with incisal 2/3rds emerges from the crest of the alveolus with tooth lingually in position & indents the mandibular lingual cortex. Tooth 33 was vertically aligned in the alveolus with mild axial rotation. Mild distal dilaceration was seen in the apical third of the root. Open root apex was seen. The tooth was displaced mesially. Also, alignment & position of erupting teeth 35, 45 & 37 was within normal limits.

2.3. Macroscopic features

Two soft greyish white tissue two from left side measuring approximately 1.0 cm and 0.5 cm respectively and one from right side measuring approximately 1.0 cm were removed for histological assessment. Figure 1 a, b respectively.

Specimen received in formalin post surgery from the left 1(a) and right 1(b) quadrants of the mandibular arch.

2.4. Histopathology

On left side the H n E-stained sections of specimen from 32-34 region revealed a cystic lumen with a discontinuous odontogenic epithelial lining showing variable appearance. Proliferating epithelium was seen associated with abundant acute and chronic inflammatory cells. Focally scanty REE like epithelium was also seen. The capsule was highly inflammed in the juxtaepithelial zone too with presence of many blood vessels. The deeper areas appear fibrous and free of inflammation. Peripheral bone was also appreciable and On right side stained sections it revealed a cystic lumen with a discontinuous odontogenic epithelial lining

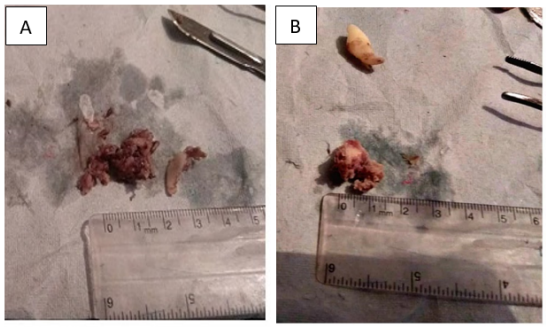

Fig. 1: Macroscopic appearence: **a:** Soft greyish white tissue measuring 1.0 cm ; **b:** Two greyish white tissue measuring 1.0cm and 0.5 cm

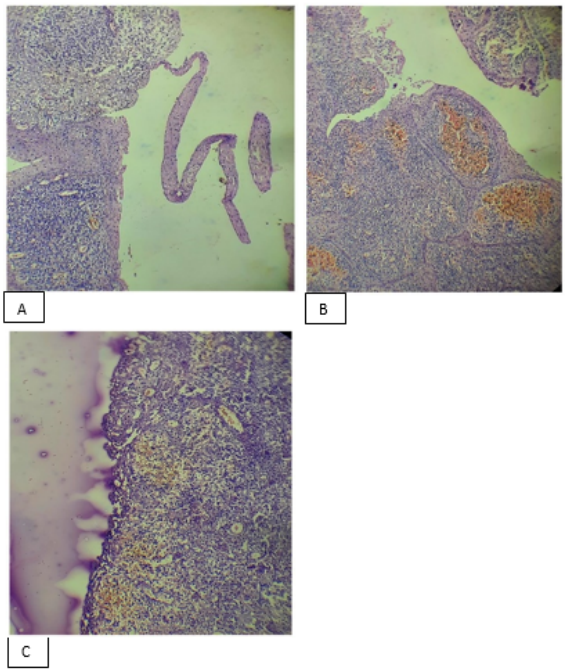

Fig. 2: Histopathology images: a: Photomicrograph depicting detached odontogenic cystic lining with highly inflammed vascular capsular area seen subjacent. (Haematoxylin and Eosin stain; Magnification × 100); **b;c:** Photomicrograph depicting cystic lining proliferating in an arcading fashion enclosing highly inflammed vascular connective tissue cores (Haematoxylin and Eosin stain; Magnification × 100)

showing prominent proliferation in areas associated with abundant mixed inflammatory cells. Other regions also revealed detached REE like epithelium. The capsule was highly inflammed in the juxtaepithelial zone with presence of many blood vessels. The deeper areas appear fibrous and free of inflammation, showing presence of many collections of odontogenic rests. Peripheral bone can also be seen with haemorrhagic areas. (Figure 2 a,b)

Histopathological features in correlation with clinical and radiographic features suggestive of the inflammatory follicular cyst.

3. Discussion

Odontogenic cyst is known as follicular cyst in case the involved tissue example encloses the crown of unerupted tooth due to expansion of follicle.[7] A dentigerous cyst is a developmental odontogenic cyst but Benn and Altini, stated that there exist a inflammatory dentigerous cyst in orgin due to inflammation from a nonvital predecessor variant of primary tooth or other source which spread due to the involvement of dental follicle.[5] Due to this inflammation progressing into the follicular tissue it was noted that there were degenerative or destructive changes in follicle which results in proliferation of the reduced enamel epithelium.[8] There are some complications due to inflammatory dentigerous cyst they are permanent bone deformation and pathological bone fracture, bone destruction or cortical bone expansion with loss of permanent successor. In long-standing cases the development of squamous cell carcinoma, mucoepidermoid carcinoma, and ameoloblastoma can be seen.[9] Main in 1970 stated that the "inflammatory coronal cyst" developing around the partly erupted premolar was due to the intrafollicular spread of periapical inflammation from extracted primary tooth.[10] After 10 years Shaw et al. studied in 13 cases of follicular cyst which involved premolars that were affected by infected primary predecessor.[8] These above all cases showed chronic inflammatory histological findings which was then suggested as inflammatory follicular cyst by Main.[10] Dentigerous cyst enveloping unerupted tooth sometimes may show enamel hypoplasia or may not depending upon the time of beginning of a dentigerous cyst. As enamel hypoplasia is seen when dentigerous cyst begins at the early stage of development of the involving tooth and not seen where the dentigerous cyst develops after tooth completion.[11] The treatment of choice of cyst according to Neville is based on the size of the lesion, location of the cyst, dentition affected, Age of the patient and relationship with the surrounding vital structure and most common treatment are decompression, marsupialization and enucleation.[12]

Thus, in this case report it suggests a rare bilateral inflammatory follicular cyst with its detailed radiographic and histological features.

4. Conclusion

Bilateral inflammatory follicular cyst are rare odontogenic cyst and can be diagnosed by clinical criteria, radiological investigation and histology. This case typically presents the clinical radiological and histological features of bilateral inflammatory follicular cyst.

5. Source of Funding

None.

6. Conflict of Interest

The authors declare no conflict of interest.

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