CASE REPORT

Dentigerous cyst associated with an impacted anterior maxillary supernumerary tooth

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SUMMARY

Most typical dentigerous cysts are commonly seen in association with third molars and maxillary canines. Only 5–6% of dentigerous cysts are associated with supernumerary teeth. We report a rare case of dentigerous cyst associated with an impacted anterior maxillary supernumerary tooth. The patient was treated surgically by enucleation of the cyst.

BACKGROUND

Dentigerous cysts are the most common developmental cysts of the jaws and the second most common type of odontogenic cysts after radicular cysts.[1] Dentigerous cyst, also known as follicular cyst, is caused by fluid accumulation between the reduced enamel epithelium and the enamel surface of a formed tooth and it originates by separation of the follicle from around the crown of an unerupted tooth.[2] A greater incidence in young men has been reported with a ratio of 1.6:1.[1 2] It is usually associated with impacted or unerupted teeth. Mandibular third molars, maxillary canines and mandibular premolars are involved most frequently. Rarely, a dentigerous cyst is associated with odontome, deciduous teeth and supernumerary teeth.[2 3]

A mesiodens is a supernumerary tooth located in the maxillary central incisor region and its prevalence is between 0.15% and 1.9%. The association of a dentigerous cyst with supernumerary teeth constitutes only 5–6% of all dentigerous cysts.[4]

We hereby report a rare case of a 18-year-old boy with dentigerous cyst associated with an impacted anterior maxillary supernumerary tooth.

CASE PRESENTATION

An 18-year-old boy reported to the Department of Oral Medicine and Radiology, with chief complaint of a painless swelling in the upper jaw for a duration of 1 year. At the time of his presenting, the patient had no systemic disease.

There was no history of trauma to the maxillary anterior region; however, the patient noticed gradual retroclination of maxillary right central incisor and concurrent gradually increasing swelling on palatal side.

Intraoral clinical examination revealed a firm, diffused, non-tender palatal swelling in the maxillary anterior region, on the right side of the midline and retroclined right maxillary central incisor which was not showing discolouration. A slight obliteration of the labial vestibule was also noted. The overlying palatal and labial mucosa were normal (figure 1).

Figure 1 Intraoral view.

INVESTIGATIONS

A wide array of investigations was carried out.

A fine needle aspiration cytology (FNAC) was performed at the time of examination.

On aspiration, yellow colour fluid was obtained which showed inflammatory cells along with scanty cholesterol crystals, suggestive of cystic lesion (figure 2).

Radiographic investigation was carried out to confirm type and extent of cystic lesion.

The panoramic radiograph revealed a large, well-defined unilocular radiolucent lesion with sclerotic borders in the anterior maxilla. The lesion extended from the right second premolar to the left lateral incisor region. A supernumerary tooth was visible in the left aspect of the cyst, resulting in resorption of cortical bone at this region. Divergence of the roots of the central incisors was also noted on the radiograph. The supernumerary tooth had a cone-shaped crown and a shortened root (figure 3).

CT scan confirmed an abnormal well-defined hypodense non-enhancing cystic lesion in the alveolar cortex of the maxilla in the region of central and lateral incisor measuring approximately 2.8×2×2.5 cm. The lesion was causing smooth expansion of the alveolar cortex of maxilla and was abutting the posteriolateral wall and floor of maxillary sinus, the uncinate process of ethmoidal bone with mild extension into the right maxillary antrum. Inferior subluxation of right lateral central

Figure 2 Fine needle aspiration cytology aspirate.

Figure 3 Panoramic view.

Figure 4 Coronal and axial CT views.

incisor was seen. Presence of radiopaque tooth like structure was noted. Posteroinferiorly the lesion was abutting the hard palate but no erosion was seen. The lesion was protruding roof of the oral cavity (figure 4).

DIFFERENTIAL DIAGNOSIS

On the basis of these clinical and radiographic characteristics, differential diagnosis included the hypothesis of radicular cyst, dentigerous cyst, adenomatoid odontogenic tumour or nasopalatine cyst.

TREATMENT

The clinical presentation and subsequent investigations led to the final diagnosis of dentigerous cyst associated with a mesiodens.

Therapeutic approach included endodontic treatment of the affected anterior maxillary teeth. The lesion was totally enucleated together with the supernumerary tooth under local anaesthesia.

Surgically enucleated specimens were sent to the Department of Oral and Maxillofacial Pathology for histopathological evaluation. The submitted specimens consisted of multiple fragments of soft tissue (figure 5).

Microscopic findings revealed odontogenic epithelium lining which was 2–3 cell layer thick. Connective tissue capsule was collagenous with mild inflammatory cell infiltrate. No evidence of malignant changes was noted (figure 6).

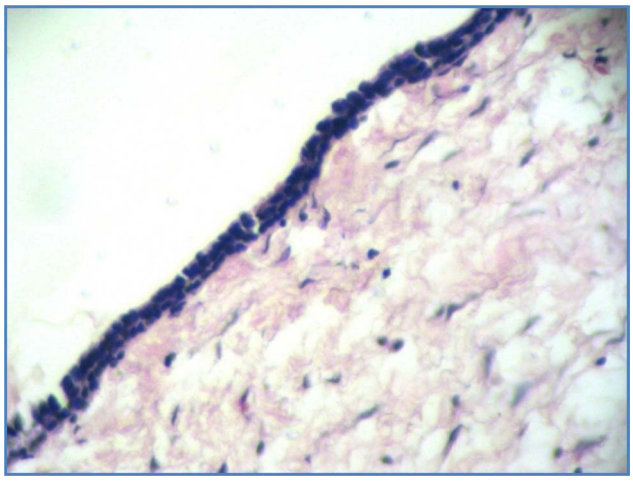

Figure 6 Photomicrograph of lesion.

OUTCOME AND FOLLOW-UP

The patient was followed up for 6 months. The postoperative period was uneventful.

He has been advised orthodontic management for malposed maxillary anterior teeth.

DISCUSSION

Dental literature says that palatal swelling can be because of infections, allergic diseases, cysts, tumours or any other mucosal or bony abnormalities.[2] Our case had malposed maxillary anterior teeth which turned out to be a significant finding as supernumerary teeth are commonly located in the anterior maxillary region and can often cause developmental and eruption disturbances of adjacent permanent teeth, leading to crowding, displacement, diastema and, in some cases, radicular resorption and dentigerous cyst formation.[5–7]

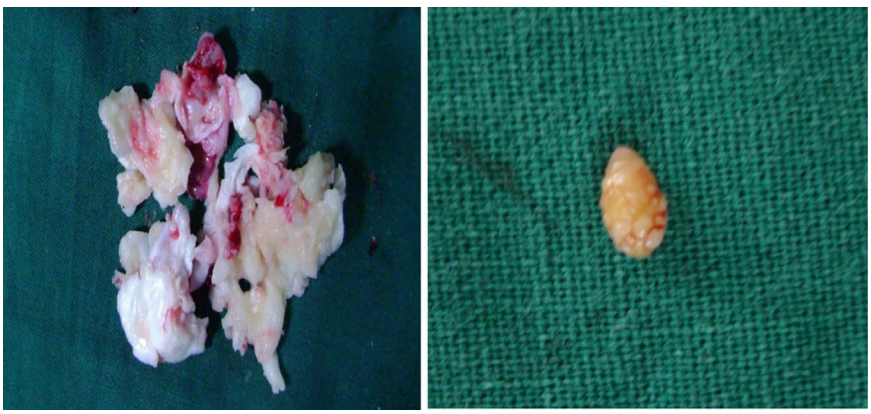

Figure 5 Surgical specimens.

Dentigerous cysts account for approximately 16.6% of all jaw cysts. About 95% of these cysts involve permanent dentition and only 5% are associated with supernumerary teeth. The exact aetiology of supernumerary teeth is still unknown but it can be a result of local, independent or conditioned hyperactivity of dental lamina.[4] Mesiodens, first named by Bolk in 1917, is the most frequent type of supernumerary tooth and is situated in the maxillary anterior incisors region. It is a rare entity with a prevalence of 0.15–1.9% in the general population and a slight male predilection.[8]

Dentigerous cysts associated with mesiodens are easily diagnosed radiographically because of their radiopaque image. CT is necessary and valuable, not only to identify the pathology of the dentigerous cyst and the exact location of the impacted tooth, but also to determine the full extent of the lesion as well as to identify erosion of cortical bone and invasion into adjacent soft tissues, thus contributing to proper treatment planning as well.[9]

Radiographically, dentigerous cyst may appear as well-defined unilocular or multilocular radiolucency enclosing the crown of an unerupted tooth.[10] The radiolucency usually arises in the cemento-enamel junction of the tooth. Differential diagnoses of such radiolucency include radicular cyst, odontogenic keratocyst and odontogenic tumours such as ameloblastoma, Pindborg tumour, odontoma and cementomas.[11]

Enucleation is the standard treatment for a dentigerous cyst along with extraction of the associated supernumerary tooth.[3 12] Marsupialisation is recommended for a large cyst when a single draining may not be effective and complete removal of the surrounding structure is not desirable[13] For a large cyst, Scolozzi *et al*[14] recommended enucleation followed by an immediate bone grafting procedure.

In the present case, surgical removal of the impacted supernumerary tooth and enucleation without using bone grafting of the associated cyst was performed.

In conclusion, early diagnosis and proper treatment planning for such uncommon cases is necessary to avoid further complication.

Learning points

- Gradual migration of tooth and concurrent soft tissue swelling may be suggestive of cystic lesion.
- Impacted supernumerary teeth are more likely to be associated with a pathology (as in this case).
- Early diagnosis and proper treatment planning for such uncommon cases is necessary to avoid further complication.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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