



Dentigerous cyst associated with an impacted anterior maxillary supernumerary tooth (mesiodens): A case report

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ABSTRACT

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 (mesiodens). A 30-year-old male reported to our Department of Oral Medicine, School of Dentistry at Hamedan University of Medical Sciences, with chief complaint of a painless swelling in the anterior upper jaw (in the region of incisors) for a duration of 3 month. At the time of his presentation, his medical history was unremarkable, with no systemic problems and no report of pain. Although the association of dentigerous cyst with an impacted supernumerary tooth (mesiodens) is rare, prevention of harmful complications as developmental cyst, early diagnosis and treatment is necessary. The standard treatment is Enucleation.

Keywords: Dentigerous cysts; Mesiodens; Supernumerary teeth.

Introduction

Dentigerous cysts are one of the most common developmental types of odontogenic cysts occurring in the oral cavity and often manifest as incidental findings on dental radiographs and/or as asymptomatic swellings [1] dentigerous cyst encompasses about 20-24% of all epithelium-lined cysts of the jaws [2,3]. The dentigerous cyst arises from the crown of impacted, em-

bedded, or unerupted teeth. Most often involve mandibular third molars followed by maxillary canines, maxillary third molars, and mandibular second premolars. These cysts develop from remnants of reduced enamel epithelium around the crown of an unerupted or impacted tooth, attached at the level of the cemento-enamel junction. Most are considered developmental [1]. After the formation of

the crown or root of the tooth, liquid exudates between the residual enamel epithelium and the crown surface form odontogenic cysts [4]. Although usually considered to be of developmental origin, dentigerous cysts (DCs) have been reported to form in response to chronic periapical inflammation associated with primary teeth that have necrotic, infected pulps [5]. DC usually presents as a well-defined and unilocular radiolucency surrounding the crown of an unerupted or impacted tooth [6] as about 95% of dentigerous cysts involve permanent dentition and only 5% are associated with supernumerary teeth as Mesiodens [7]. While supernumerary tooth may be found in any region of the dental arch, the most common site is the palatal midline between the two maxillary central incisors, where it is termed as mesiodens [8].

The usual age of clinical presentation of dentigerous cysts due to supernumerary tooth is during the first four decades [7]. 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 [9]. 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.

Case Presentation

A 30-year-old male reported to our Department of Oral Medicine, School of Dentistry at Hamedan University of Medical Sciences, with chief complaint of a painless swelling in the anterior upper jaw (in the region of incisors) for a duration of 3 months (Figure 1). At the time of his presentation, his medical history was unremarkable, with no systemic problems and no report of pain. Extra oral examination revealed a swelling which was oval in shape. Intraoral clinical examination revealed a smooth surface, nodular, soft consistency, expansible, non-tender, swelling in the buccal vestibule of maxilla, no discoloration showed. The lesion area measured approximately 50mm in width and 50mm in height. An obliteration of the labial vestibule was also noted.

Investigation:

Mobility test, vitality test, aspiration carried out. The amber colored fluid was removed by fine needle aspiration (Figure 2).

Radiograph findings showed an unilocular, well defined, radiolucency with corticated border attached to impacted mesiodens. The lesion extended from left upper lateral incisor to right upper lateral incisor. Radiograph findings suggested diagnosis dentigerous cyst associated with mesiodens.

Different 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 and odontoma.

Treatment:

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



Figure 1. Painless swelling in the anterior upper jaw (in the region of incisors).



Figure 2. The amber colored fluid removed by fine needle aspiration.

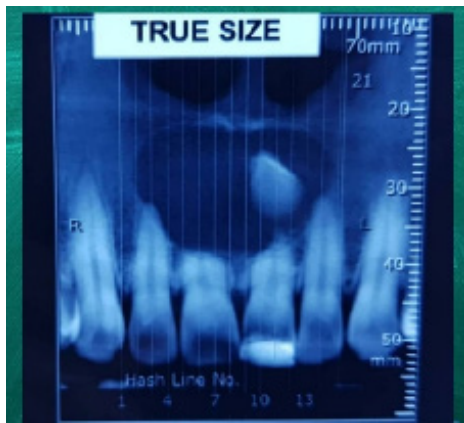


Figure 3. Root resorption of Incisor and buccal plate perforation noted.

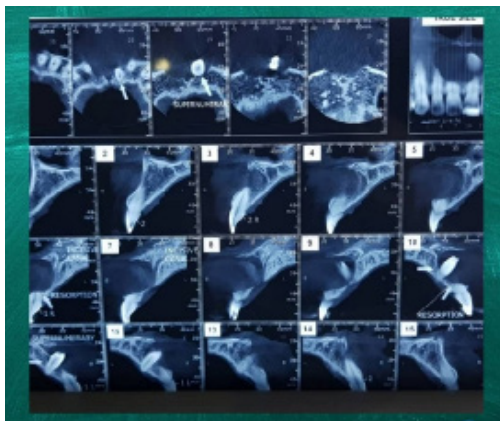


Figure 4. Computed tomography (CT) scan, in axial and coronal section showed a large unilocular lesion with crown of mesiodens in the anterior maxilla.

Discussion and Conclusion

Maxillary large Swelling in anterior region may result from different conditions including types of developmental cysts such as nasopalatine duct cyst, odontogenic cysts such as (dentigerous cyst, glandular odontogenic cyst) and neoplasms such as (ameloblastoma, adenomatous odontogenic tumor, odontogenic kerato cyst, central giant cell granuloma) [10]. Dentigerous cysts or follicular cysts, are slow-growing benign odontogenic cysts that are considered to be developmental cyst. In radiography, present as a well-defined and unilocular radiolucency which surrounding an unerupted or impacted teeth [7]. As about 95% of dentigerous cysts involve the permanent dentition and only 5% are associated with supernumerary teeth as Mesiodens [7] supernumerary teeth mostly appear in the anterior region of the maxilla and are categorized as mesiodens [11]. Various complications associated with mesiodens such as delayed eruption permanent teeth, crowding, spacing, abnormal root formation, median diastema, cystic lesions, intraoral infection,

rotation, root resorption [12] the most prevalent type of developmental odontogenic cyst is the dentigerous cyst. Dentigerous cysts associated with supernumerary teeth is rare and occurs in 5% of all dentigerous cysts. Mesiodens may happen as single, multiple, unilateral or bilateral and it has slight tendency in male [13]. In our case report the Dentigerous cyst associated with an impacted mesiodens causes central incisor resorption and large swelling in anterior region of maxilla. One of the differential diagnosis of Dentigerous cyst is Adenomatoid odontogenic tumor (AOT). Adenomatoid odontogenic tumor (AOT) is a benign odontogenic tumor. AOT is known as “the tumor of two-thirds” because two-thirds of cases are found in the maxilla and patients in their second decade of life [14]. AOT associated with missing or unerupted teeth in two third of cases [15]. AOT mainly occurs in anterior region of maxilla and is associated with unerupted teeth. AOT may cause root resorption like what occurs in Dentigerous cyst [16]. Differentiation between dentigerous cysts is based on histological assessment.

Dentigerous cysts associated with mesiodens are easily diagnosed in radiograph images because of their radiopaque image. CT is crucial and valuable, furthermore identifies the pathology of the dentigerous cyst and the exact location of the impacted tooth, it helps to determine the 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 [17]. In radiograph image, dentigerous cyst may appear as well-defined unilocular or multilocular radiolucency surrounding the crown of an unerupted tooth [18]. To avoid further complications and proper treatment, early diagnosis is necessary. Standard treatment for dentigerous cyst is enucleation. Extraction of supernumerary teeth is recommended. If the lesion is much bigger marsupialization is suggested especially single draining may not be operative and effective [19]. Investigation showed that immediate bone grafting after enucleation is recommended [20]. In this case, surgical removal of the impacted mesiodens and enucleation without using bone grafting of the associated cyst was carried out. The final treatment for a dentigerous cyst (as in Herlen’s article) is enucleation of the cyst together with impacted or unerupted tooth. Large dentigerous cysts can be treated by marsupialization. The prognosis for most dentigerous cysts is excellent, and recurrence seldom is noted after complete removal of the cyst [21]. Although the association of dentigerous cyst with an impacted (mesiodens) is rare, prevention of harmful complications as developmental cyst, ear-

ly diagnosis and treatment is necessary. The standard treatment is Enucleation.

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Conflict of Interest

There is no conflict of interest to declare.

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