

Dentigerous Cyst Associated with a Mesiodens: A Case Report and Review of Literature

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ABSTRACT

Background: Dentigerous cysts are the second most common odontogenic cysts after radicular cysts and are most commonly seen in association with third molars and maxillary canines. Only 5% of dentigerous cysts involve supernumerary teeth, of which mesiodens is the most frequent type. This paper presents a case of dentigerous cyst associated with a mesiodens that caused a painless swelling in the maxillary ridge of an edentulous 42 year-old male. The patient was treated surgically by enucleation of total cyst and surgical extraction of mesiodens under local anesthesia.

Keywords: Dentigerous cyst, mesiodens, supernumerary tooth.

INTRODUCTION

Dentigerous or follicular cysts are the second most common type of odontogenic cysts, and the most common developmental cysts of the jaws.^[1] The dentigerous cyst is defined as a cyst that originates by the separation of the follicle from around the crown of an unerupted tooth.^[2] Dental follicle associated with unerupted or impacted teeth shows fibrous connective tissue with remnants of reduced enamel epithelium. Dentigerous cysts are caused by expansion of dental follicles resulting from accumulation of fluid between tooth crowns and epithelial components.^[3]

This cyst most frequently occurs in patients between 10 to 30 years of age with greater incidence in males with a 1.6:1 ratio.^[1,2] The cysts most often involves impacted mandibular third molars, followed by maxillary canines, mandibular

premolars, and occasionally supernumerary teeth or odontomas.^[2,4]

The clinical examination reveals a missing tooth or teeth and occasionally a hard swelling, sometimes resulting in facial asymmetry and possible pathologic fracture. Dentigerous cysts are usually diagnosed on routine dental radiographs.^[5] Radiographically, the cyst appears as a unilocular radiolucent shadow with a well-defined sclerotic border associated with the crown of an unerupted tooth, but an infected cyst will show ill-defined borders.^[6] Only 5% of dentigerous cysts are associated with supernumerary teeth. The usual age of clinical presentation of dentigerous cyst due to supernumerary tooth is in the first four decades of life.^[7]

Supernumerary teeth are most common in the maxilla with a strong predilection for the anterior region, which is termed a mesiodens.^[1,2] The

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incidence of mesiodens is only 0.15 % to 1.9 % in general population. Moreover only 5-6% of dentigerous cyst are associated with mesiodens. This paper presents a case of dentigerous cyst associated with a mesiodens in an 42-year- old edentulous male.

CASE REPORT

A 42 year-old male patient presented with the chief complaint of a painless swelling in front region of the upper jaw, which became evident after extraction of his upper anterior teeth a month before. The intraoral clinical examination detected a firm labial swelling in the right maxillary anterior region of size 10mm x 05mm.

The IOPA radiograph showed well-defined radiolucent lesion having sclerotic borders. (Figure 1). The cystic cavity was overlapped by the nasal septum and was present in midline with more extension on right side. The differential diagnosis considered was of residual cyst, midline cyst, odontogenic keratocyst, and adenomatoid odontogenic tumor.

The lesion was surgically enucleated along with the supernumerary tooth under local anesthesia. Intraoperatively a small conical tooth like structure attached to cyst, part of which was inside the cystic lumen and some part was outside the capsule. The tooth like structure was thought to be a supernumerary tooth - a mesiodens. The specimen was sent for histopathological examination. The submitted specimens consisted of a single bit of hard tissue with soft tissue attached to it. (Figure 2)

Decalcified H & E stained section revealed cyst wall of loosely arranged fibrocellular connective tissue, lined by 2-3 layers of flattened non-keratinizing stratified squamous epithelium (Figure 3). The epithelium and the connective tissue interface appeared flat. A few clear cells too were evident in the cystic lining suggestive of mucous cells. No evidence of malignant change was noted.

The clinical, radiographic and histopathological features led to the final diagnosis of dentigerous cyst associated with a mesiodens. The patient was followed up for six months. The post-operative period was uneventful.



Fig 1: IOPA radiograph shows a large unilocular radiolucency in the anterior maxilla.



Fig 2: Gross pathology specimen showing the soft tissue attached to hard tissue.

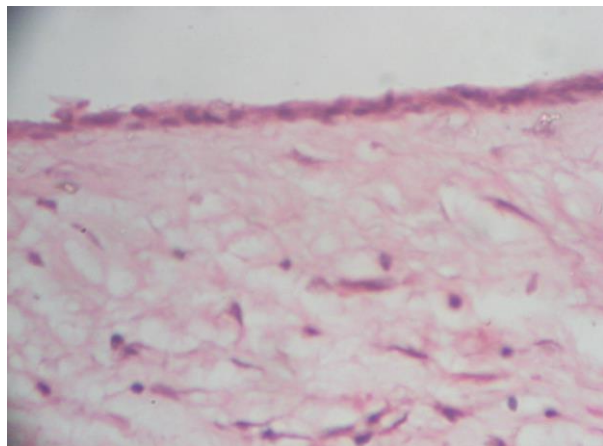


Fig 3: Photo micrograph showing cystic wall with lining of non-keratinizing squamous epithelium (H & E stain $\times 400$).

DISCUSSION

Swelling of the upper lip may result from different conditions including infections, allergic diseases, neoplasms (especially of salivary origin), granulomatous diseases, and different types of cysts.^[8]

Dentigerous cyst is a common oral lesion caused by fluid accumulation between the reduced enamel epithelium and the crown of an unerupted tooth.^[2] Most reports have shown a peak incidence of dentigerous cysts in the second and third decades of life, with a slightly higher predilection for males. This gender preference might be related to a smaller jaw size and a greater tendency for prophylactic extraction of third molars in females.^[9]

Radiographic examination of dentigerous cyst reveals a unilocular radiolucency enclosing the crown of an unerupted tooth. The radiolucency usually arises in the cemento-enamel junction of the tooth.^[9] If a follicular space on the radiograph is more than 5 mm, an odontogenic cyst can be suspected. Differential diagnoses of such radiolucency include radicular cyst, residual cyst, odontogenic keratocyst, and odontogenic tumors such as ameloblastoma, Pindborg tumor, odontoma, odontogenic fibroma, and cementomas.^[10]

Although dentigerous cyst is a common developmental cyst, its association with supernumerary teeth is rare and estimated to constitute 5-6% of all dentigerous cysts.^[4] Mesiodens is the most frequent type of

supernumerary tooth and situated in the maxillary anterior incisors region. It is a rare entity with a prevalence of 0.15-1.9% in general population and a slight male predilection.^[2,8,11] Mesiodens may be single or multiple, erupted or impacted and is rarely seen associated with a dentigerous cyst.^[12] An unusual case of a large dentigerous cyst associated with an impacted mesiodens, resulting in a slow-growing swelling in the upper lip was reported by Scolozzi et al ^[8] and Khan et al ^[13]. Dinkar et al^[14] described an unusually early presentation of multiple mesiodens with associated dentigerous cyst. Large dentigerous cysts arising from unerupted mesiodens should be kept in mind in the differential diagnosis of upper lip swellings, particularly if associated with dental anomalies of the maxillary incisors such as malposition and diastema.

A case of a dentigerous cyst associated with an impacted inverted mesiodens that developed secondary to trauma to its predecessor, a non-vital permanent maxillary central incisor was reported by Sharma et al.^[15] As a consequence of trauma, the central incisor's root development was prematurely arrested and the open apex lied close to the follicle of the underlying inverted mesiodens. The presence of mesiodens causes complications such as delayed eruption of permanent teeth, rotations, retention, root resorption, pulp necrosis, and diastema as well as formation of dentigerous and primordial cysts.^[16]

Therefore, to prevent the development of a dentigerous cyst and to avoid unwanted effects on neighboring teeth, early diagnosis and treatment of mesiodens is crucial.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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