

## Dentigerous cyst associated with an impacted mesiodens in a 45-year-old woman: a case report

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### Abstract

Dentigerous cysts are the most common odontogenic cysts of the jaws. The dentigerous cyst arise from around the crown of impacted, embedded, or unerupted teeth. Most often they involve mandibular third molars followed by maxillary canines, maxillary third molars. The main reason of dentigerous cyst is unknown but it rarely occurs around a supernumerary tooth. Only 5% of dentigerous cysts involve supernumerary teeth, around a mesiodens in the anterior of maxilla. Mesiodens is a developmental problem that occasionally find in children and results malocclusion. Most of mesiodens are related to a complication and only 26.9% were asymptomatic. The incidence of mesiodens which is a supernumerary in the midline of upper central incisors varies between 0.09% and 2.05% in different researches. This paper describes a case of dentigerous cyst associated with a mesiodens in a 45-year-old woman that caused a painless swelling in maxillary anterior region.

**Keywords:** Dentigerous cyst, Mesiodens, Supernumerary tooth

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### Introduction

Dentigerous or follicular cysts are the most common developmental cysts of the jaws. The dentigerous cyst arising from the crown of impacted, embedded, or unerupted teeth. Most often involve mandibular third molars followed by maxillary canines, maxillary third molars, and mandibular second premolars (1). Dentigerous cysts rarely involve unerupted deciduous teeth. The pathogenesis of this cyst is uncertain (2). These cysts are caused by expansion of dental follicles resulting from accumulation of fluid between the reduced enamel epithelium and the tooth crown (3).

Dentigerous cysts are the second most common odontogenic cysts after radicular cysts, accounting for approximately 24% of all true cysts in the jaws (4). Dentigerous cysts most frequently occurs in patients between 10 and 30 years of ages and there is a slight males predilection (5). Clinically, Small dentigerous cysts are usually asymptomatic and are discovered on a routine radiographic examination or to determine the reason for the failure of a tooth to erupt. Dentigerous cysts can grow to a considerable size, and large cysts may be associated with a painless expansion of the bone in the involved area (6). Radiographically, dentigerous

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cyst typically shows a unilocular radiolucent area with a well-defined sclerotic border associated with the crown of an unerupted tooth (7). First named by Bolk in 1917 Mesiodens is common supernumerary tooth occurring in anterior maxillary region (8). It is a rare entity with a prevalence of 0.15-1.9% in general population with males being affected twice (9). Mesiodens is a kind of supernumerary tooth that bring about median diastema and cause delayed eruption of the permanent central, thus mesiodens is a common supernumerary tooth occurring. Dentigerous cysts around supernumerary teeth account for 5% of all dentigerous cysts in anterior region of maxilla (10). This paper report a rare case of dentigerous cyst associated with a mesiodens in an 45-year-old woman.

### Case Report

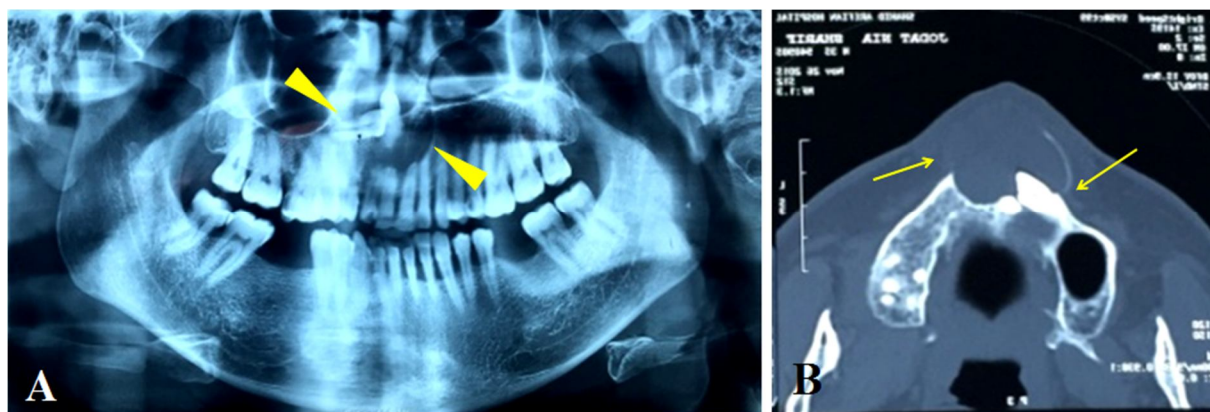
A 45-year-old woman patient referred to the Department of Oral and Maxillofacial Surgery, School of Dentistry at Urmia University of Medical Sciences,

Urmia, Iran, with the chief complaint of a painless swelling in maxillary anterior region since 8 month ago. The patient had no systemic disease. Trauma and familial history we're not seen.

Extra oral examination revealed asymmetry due to the swelling in the upper anterior region of the face. The swelling was slightly fluctuant, diffuse and non tender from midline to the left maxilla.

The intra oral clinical examination revealed a solitary swelling involving labial and palatal of left central incisor to the canin with palatal cortical plates expansion.

Intra oral panoramic radiograph showed well-defined unilocular radiolucency with sclerotic borders attached to the crown of the impacted mesiodens in the left alveolar process of the anterior maxilla (figure1). Computed tomography (CT) scan, in axial and coronal section showed a large unilocular lesion with crown of mesiodens in the anterior maxilla (figure1).



**Figure 1:** Panoramic radiograph shows a well- defined unilocular radiolucency in the anterior maxilla crossing the midline (a). The CT in axial section showed showed unilocular lesion with crown of mesiodens in the anterior of maxilla (b).

The radiographic findings suggested a diagnosis of dentigerous cyst associated with mesiodens. Before surgery, fine needle aspiration (FNA) cytology of the swelling performed. Aspiration biopsy findings, showed

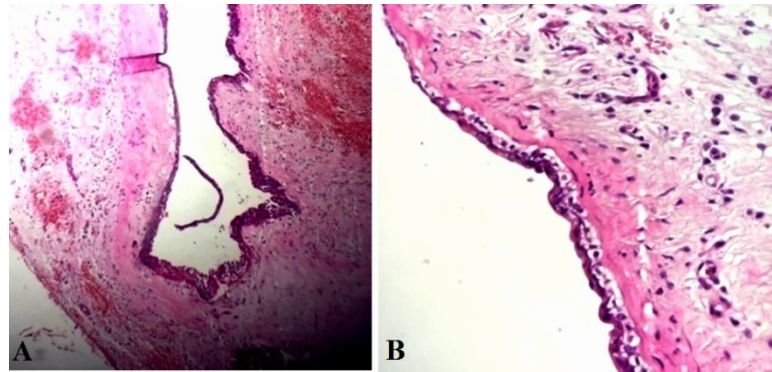
a viscous yellow – brown colored fluid and few inflammatory cells.

Under local anesthesia palatal, the lesion was totally enucleated together with the supernumerary tooth, and specimens were sent to the Department of Oral and

Maxillofacial Pathology to evaluate the lesion. According to the clinical, radiographic findings differential diagnosis was periapical cyst, dentigerous cyst, nasopalatin duct cyst and odontogenic tumor.

The histopathological examination showed a cystic lumen lined by layers of flattened non-keratinizing

stratified squamous epithelium with underlying stroma consisting of loosely fibrovascular connective tissue, the junction of the epithelium and the connective tissue was flat and without rete ridges (Figure 2). No evidence of malignant changes was noted.



**Figure 2:** Histopathological section of the lesion (H&E,  $\times 10$ ) (A). Histological appearance revealed cyst walls composed of loosely arranged fibrovascular connective tissue, lined by flattened non-keratinizing stratified squamous epithelium(H&E  $\times 40$ )(B).

According to the clinical, radiographic and histopathological features confirmed the final diagnosis of dentigerous cyst associated with a mesiodens. The

patient was followed up for 9 months and no symptoms of recurrence was observed (figure 3).



**Figure 3:** The patient followed up, no symptoms of recurrence was observed

## Discussion

Swelling of the maxillary 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)

(11). The dentigerous cyst is the most common type of developmental odontogenic cyst and second most common type of odontogenic cyst is after the radicular cyst. This cyst is defined as a cyst that originates by the separation of the follicle from around the crown of an unerupted tooth (1). Dentigerous cysts are typically asymptomatic and may be large with a painless expansion of the bone in the involved area. In this

patient large swelling was visible in maxillary anterior region. Dentigerous cysts occurs most frequently in patients between 10 and 30 years of age with a slightly predilection for males and the cysts usually involve mandible (6). Our case was woman and diagnosed at a much later age also, the cyst was in maxillary anterior region. Dentigerous cysts association with supernumerary teeth is rare and account for 5% of all dentigerous cysts. Mesiodens may occur as single, multiple, unilateral or bilateral and it has slight tendency in male (10). Our patient was woman.

Morphologically, mesiodens is known to have conical or peg shaped, tuberculate and supplemental (2). The presence of mesiodens causes various complications such as delayed eruption permanent teeth, crowding, spacing,, abnormal root formation, median diastema, cystic lesions, intraoral infection, rotation, root resorption (4). According the results of studies Asaumi (11% of cases) and Hurlen (7% of cases), dentigerous cyst formation associated with the supernumerary teeth (7,9). Radiographically, the dentigerous cyst typically shows a unilocular radiolucent well-circumscribed and sclerotic border area around the crown of an impacted tooth (7). Water's, panoramic and CT skull can be used in lesions diagnosis (3). One of the most difficult conditions to distinguish in the dentigerous cysts is hyperplastic follicle. If a follicular space around the crown of an unerupted tooth on the radiograph to be more than 5 mm, an odontogenic cyst can to be considered (11). Differential diagnoses of such radiolucency that must be excluded include radicular cyst, odontogenic keratocyst, and odontogenic tumors such as ameloblastoma, odontoma (8). The standard treatment for a dentigerous cyst is careful 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 (9). Considering much of

researches has been written about the possibility that the lining of a dentigerous cyst might undergo neoplastic transformation therefore several potential complications must be considered such as ameloblastoma, squamous cell carcinoma, mucoepidermoid carcinoma (1).

## Conclusion

Although the dentigerous cyst associated with an impacted supernumerary tooth is rare but early diagnosis and treatment of mesiodens are necessary to prevent harmful complications on the neighboring teeth and possible cystic development also, cause of the neoplastic transformation the lining of a dentigerous cyst probability presence of malignant tumors must be considered.

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