

## DENTIGEROUS CYST ASSOCIATED WITH IMPACTED MESIODENS- A CASE REPORT

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Supernumerary teeth or hyperdontia are a type of developmental disturbances occurring during the period of Odontogenesis due to which teeth are formed in excess of the normal number. The complications associated with mesiodens are delayed or non eruption of permanent incisors, displacement/rotation of teeth, crowding, midline diastema, dentigerous cyst formation.

**KEYWORDS:** Dentigerous cyst, Mesiodens, Supernumerary teeth

**INTRODUCTION**

Supernumerary teeth or hyperdontia are a type of developmental disturbances occurring during the period of Odontogenesis due to which teeth are formed in excess of the normal number. They occur more commonly in the permanent dentition and the Male: Female ratio 2:1.<sup>1</sup>

The most frequent supernumerary tooth is the mesiodens which is present in the premaxilla between two central incisors. The incidence of occurrence of mesiodens is 1.9% for deciduous teeth and between 0.15%-3.8% for permanent teeth.<sup>1</sup> Various complications like delay or non eruption and dilacerations of permanent central incisors or their displacement/rotation; crowding, midline diastema, dentigerous cyst formation and eruption into the nasal cavity.<sup>2, 3, 4</sup>

Dentigerous cyst is a developmental odontogenic cyst which originates through alteration of the reduced enamel epithelium in an unerupted tooth after the crown has been fully formed. About 5% of dentigerous cysts are associated with supernumerary teeth in studies. The usual age of clinical presentation of dentigerous cyst due to supernumerary tooth is the first four decades.<sup>3, 5, 6</sup> Here, we present a case of dentigerous cyst associated with impacted mesiodens which was diagnosed accidentally during routine radiographic examination of a patient.

**Case Report**

A 22 year old male patient presented to the dental Out patient ward, Karnavati School of Dentistry, Uvarsad, Gujarat seeking treatment of malaligned teeth. His

occlusion revealed Angle Class I molar relation and anterior deep bite. As a routine part of diagnosis and treatment plan, OPG was advised.

The orthopantomograph (**Fig.1**) revealed impacted teeth- maxillary left third molar, mandibular left and right third molars. There was a well defined oval radiolucent lesion with regular corticated borders surrounding impacted mesiodens in maxillary anterior region at periapical region of maxillary left central and lateral incisors and maxillary right central incisor. A maxillary occlusal radiograph (**Fig.2**) was advised which showed a well defined oval radiolucent lesion with corticated borders of about 2.5 X 1.5 cm surrounding impacted mesiodens, periapical to maxillary left central and lateral incisors and maxillary right central incisor. There was no displacement or resorption of roots of incisors. Clinically the maxillary incisors were asymptomatic and there was no apparent swelling or any other abnormalities (**Fig 3**). However maxillary left central and lateral incisors showed a delayed response to electric pulp testing.

Based on clinical and radiographic findings, a diagnosis of dentigerous cyst associated with impacted mesiodens was made. Root canal treatment was performed on maxillary left central and lateral incisors and the cyst was enucleated along with mesiodens and specimen sent to histopathologic evaluation. Histopathologic examination confirmed diagnosis of dentigerous cyst (**Fig. 4**). The healing was uneventful and occlusal radiographs were taken after two months of surgery. (**Fig.5**)

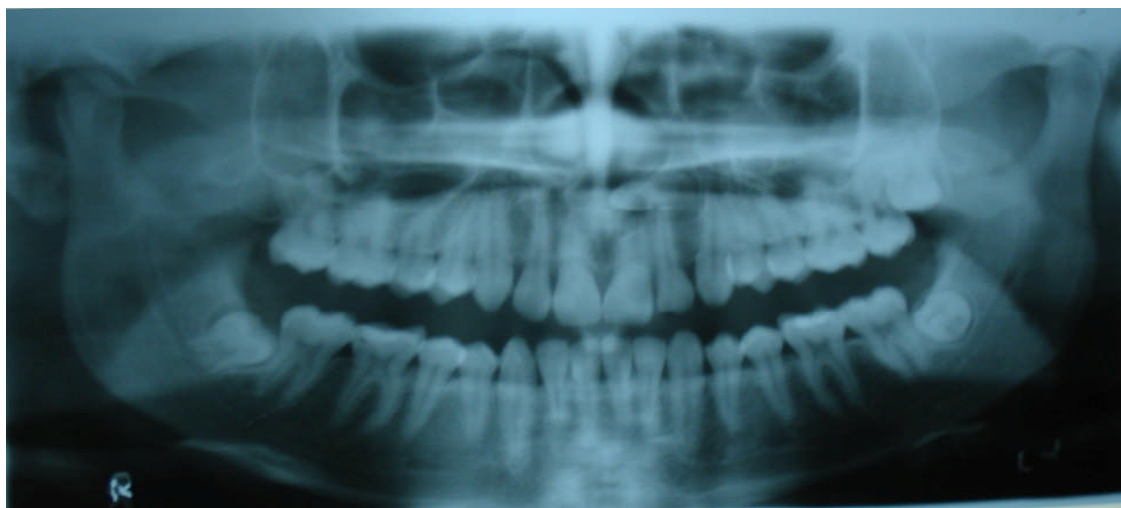


Fig. 1. Orthopantomograph showing well defined oval radiolucent lesion with regular corticated borders surrounding impacted mesiodens in maxillary anterior region'

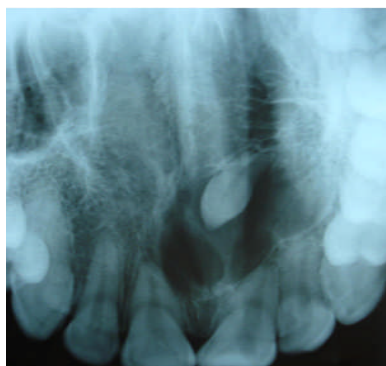


Fig. 2. Maxillary occlusal radiograph showing well defined oval radiolucent lesion with corticated borders of surrounding impacted mesiodens without any displacement or root resorption of maxillary incisors



Fig.3. Clinically normal appearance -- preoperative

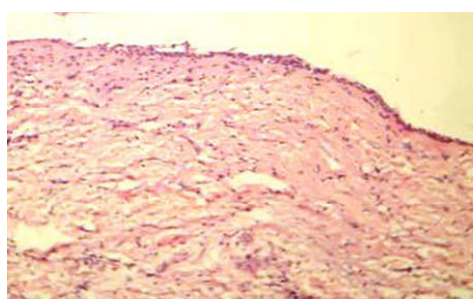


Fig.4. Histopathologic photograph of specimen of lesion

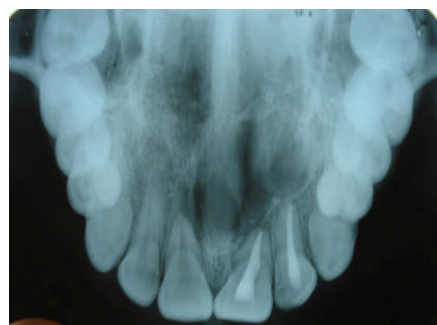


Fig.5. Post operative maxillary occlusal view

## Discussion

Morphologically, mesiodens can be supplemental, conical, tuberculate or molariform. They may be single or multiple, unilateral or bilateral, erupted or unerupted, vertical, horizontal, oblique or inverted.<sup>1,6</sup>

The etiology of supernumerary teeth is not completely understood. One theory states that they develop from a third tooth bud arising from the dental lamina near the permanent tooth bud or probably from splitting of the permanent tooth bud itself.<sup>6</sup> One theory of hyperactivity suggests that supernumeraries are formed as a result of local, independent, conditioned hyperactivity of the dental lamina.<sup>7</sup> Heredity may also play a role as supernumerary teeth are more common in relatives of affected children than general population<sup>6,7</sup>

Generally the mesiodens remain impacted and asymptomatic and are commonly discovered during radiographic examination. Only 25% of mesiodens erupt into the oral cavity. Mesiodens are frequently associated with several craniofacial disturbances including Cleft lip and Palate, Cleidocranial dysostosis and to a lesser extent Gardner's syndrome.<sup>7,8,9</sup>

One of complication of impacted mesiodens is dentigerous cyst. Dentigerous cyst associated with supernumerary teeth are rare and estimated them to constitute 5-6% of all dentigerous cyst with vast majority, approximately 90% being associated with a maxillary mesiodens.<sup>3,6</sup> It arises by accumulation of fluid between the reduced enamel epithelium and the enamel. It has been suggested that the pressure exerted by a potentially erupting tooth on an impacted follicle obstructs the venous outflow and thereby induces rapid transudation of serum across the capillary walls. The increased hydrostatic pressure of this pooling fluid separates the follicle from the crown, with or without the reduced enamel epithelium.<sup>3,6</sup>

Radiologically, well-defined radiolucent lesions with sharp margins occurring in the maxilla and mandible may be odontogenic or non-odontogenic in origin: such as radicular cyst, dentigerous cyst, odontogenic keratocyst, non-odontogenic cysts like simple bone cyst, aneurysmal bone cyst, Stafne cyst or even tumors such as ameloblastoma. On the basis of clinical, radiographic and histopathologic features we ruled out all other differential diagnosis.<sup>3,6</sup>

## SUMMARY AND CONCLUSION

Supernumerary teeth usually present with orthodontic problems in children and young adults. Dentigerous cysts in adults are usually due to unerupted teeth. Our report documents an unusually early presentation of multiple mesiodens with associated dentigerous cyst.

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