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RESEARCH ARTICLE

**DENTIGEROUS CYST ASSOCIATED WITH AN IMPACTED ANTERIOR MAXILLARY
 SUPERNUMERARY TOOTH.**

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Abstract

Dentigerous cyst is a type of odontogenic cysts and generally occurs in the ages of twenties or thirties. Dentigerous cyst always includes a tooth which cannot complete the eruption process and occurs around the crown by the fluid accumulation between the layers of enamel organ. 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.

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Introduction:-

Dentigerous cyst is a type of odontogenic cysts and has a rate between 20% and 24% in all the jaw cysts.^[1] These cysts form between the enamel epithelium and the enamel of the crown of the affected tooth, and the fluid accumulation occurs in the related area.^[2,3,4] Dentigerous cyst always includes the crown of an unerupted or impacted tooth, and it is commonly observed in the mandibular third molar region.^[2,3,4,5] These cyst often show no symptoms, and they are generally detected by a radiographic examination to find the reason for the delayed eruption. In the radiographic examination, dentigerous cyst lesion has a well-defined sclerotic border, and a well-demarcated unilocular radiolucency which is surrounding the crown of an unerupted tooth is observed. ^[2,6,7]

The ages of twenties or thirties are the most common periods when the ages of the Dentigerous cyst cases are considered whereas these cysts are rare in the first decade.^[3,8] Different options were advised for the treatment of these cysts such as the elimination of the damage on the affected permanent tooth, enucleation of all pathological tissues with the removal of the involved tooth, or Marsupialisation. In these options, the removal of the cystic lesion and the extraction of the unerupted tooth is the main treatment to prevent the recurrence of the cystic lesion.^[1,7,9] The aim of this report is to present a case of Dentigerous cyst with an unerupted mandibular left first premolar and its surgical treatment in a child patient.

Case Report:-

A 12-year-old boy reported to the Department of ENT with chief complaint of a painless swelling in the upper jaw for duration of 6 months. At the time of his presenting, the patient had no systemic disease. On general examination, the patient was apparently healthy without any significant past medical history and routine hematological tests were within the normal limits.

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

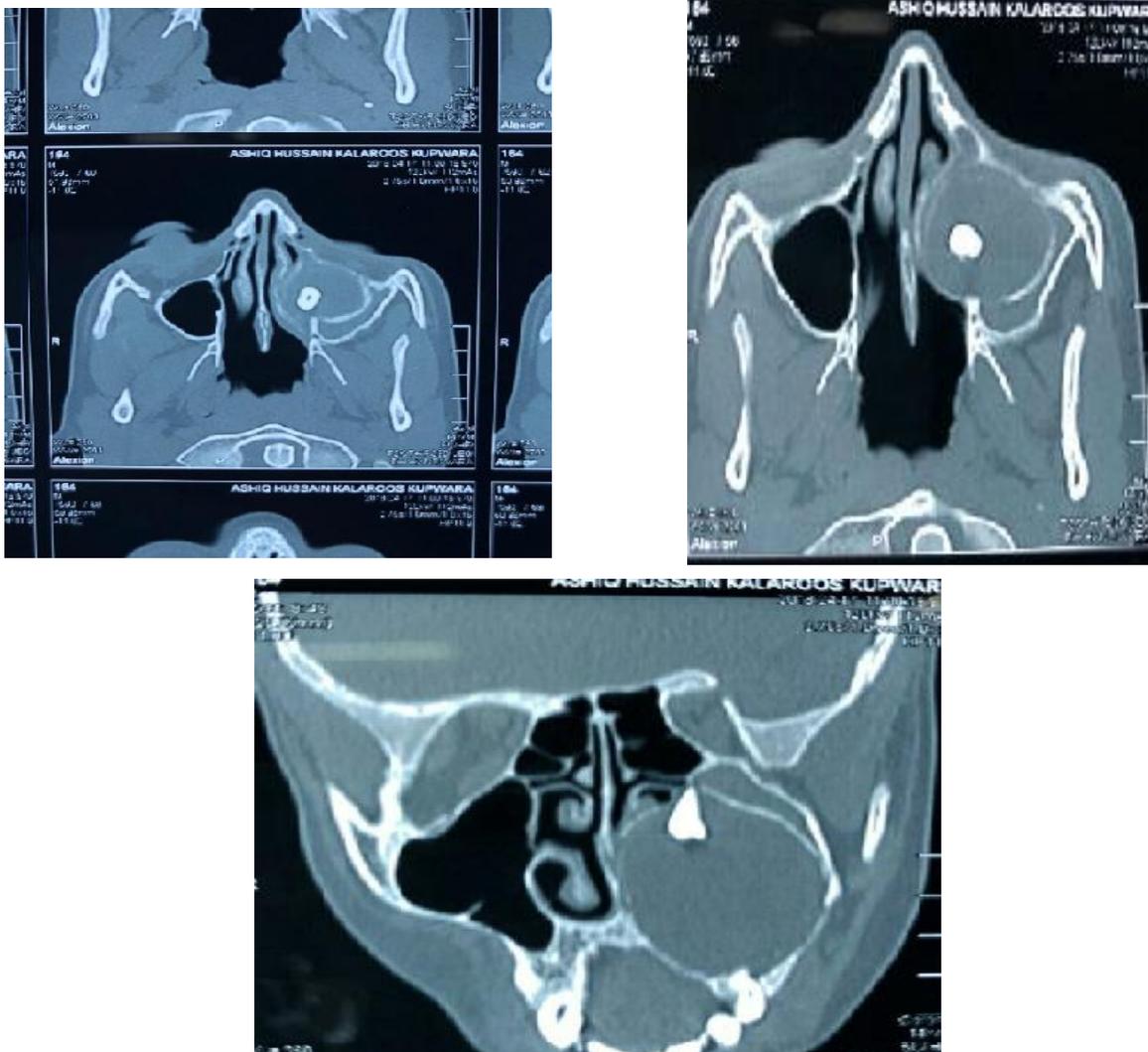
Investigations:-

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. Divergence of the roots of the central incisors was also noted on the radiograph. The supernumerary tooth had a cone-shaped crown.

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 uncinat process of ethmoidal bone with mild extension into the right maxillary antrum. Inferior subluxation of right lateral central 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 1)

Figure 1:-Radiological View Of Dentgerous Cyst



Treatment:-

Surgical enucleation of the cyst was chosen as the treatment of choice. The surgical intervention was carried out with a general anesthesia. The primary maxillary left first molar tooth was extracted before the disclosing of the cyst cavity by opening a flap. After the flap opening process, the cyst cavity was identified [Figure 2], and the contents of the cyst were removed with the unerupted premolar tooth. The flap was sutured for closing the wound primarily. The specimen was prepared and sent for histopathological examination. (Histopathological report confirmed the diagnosis of dentigerous cyst.



Figure 2:-Intraoperative view of the cyst cavity



Figure 3:-View of the unerupted tooth crown and cystic contents

Discussion:-

Dentigerous cysts most commonly occur in the in the ages of twenties or thirties.[^{5,8,10}] However, the frequency in children is relatively low, and 4–9% of these cysts occur in the first 10 years after birth.[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.³⁻⁷

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 etiology 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.²

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 cement-enamel junction of the tooth. Differential diagnoses of such radiolucency include radicular cyst, odontogenic keratocyst and odontogenic tumors such as ameloblastoma, Pindborg tumor, 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 desirable¹³ For a large cyst, enucleation followed by an immediate bone grafting procedure is usually recommended.

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

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