COMPOUND COMPOSITE ODONTOME WITH MESIODENS - A CASE REPORT

Mittal M*, Sultan A, Batra R***, Bhargava D.******

Odontomas are considered to be developmental anomalies rather than true neoplasms. They have been termed compound composite odontomas when there is at least superficial anatomic similarity to normal teeth. A supernumerary tooth in the maxillary anterior region is termed a mesiodens. This case report presents an unusual case of occurrence of a compound composite odontome along with a mesiodens, causing impaction of permanent central incisor in a 14 year old boy. Both odontome and mesiodens were surgically removed along with the impacted central incisor.

Key words: Compound composite odontome, Mesiodens, Impaction, Surgical removal.

Odontomas comprise 22% of odontogenic tumours of the jaw[1]. Odontomas are considered to be developmental anomalies rather than true neoplasms. When fully developed, odontomas consist chiefly of enamel and dentin with varying amount of pulp and cementum[2]. As it is composed of more than one type of tissue, it has been called a composite odontoma[3].

The degree of organization into recognizable tooth like configurations determines the label placed on the tumour[4]. They have been termed compound composite odontomas when there is at least superficial anatomic similarity to normal teeth.

On the other hand, when the calcified dental tissues are simply an irregular mass bearing no morphologic similarity even to rudimentary teeth, the term complex composite odontoma is used[2].

Odontomas occur somewhat more frequently in the maxilla than the mandible. Although compound and complex odontomas may be found in any site, the compound type is more often seen in the anterior maxilla[3]. The relative frequency of compound odontoma among odontogenic tumours varies between 9% and 37% [5]. The majority of cases appear before the age of 20, making it a lesion of childhood/ adolescence[5].

A supernumerary tooth is one that is additional to normal series and can be found in almost any region of the dental arch[6]. Almost 90% of supernumerary teeth are present in the maxilla with a strong predilection for the anterior region[3]. A supernumerary tooth in the maxillary anterior region is termed a mesiodens[3]. Mesiodens are the most common types of supernumerary teeth[7].

Mesiodens may occasionally be found high and inverted into the palate or in a horizontal position. In most cases, however, the long axis of the tooth is normally inclined. It can result in rotation or displacement of the permanent incisor, but rarely delays eruption[2].

Supernumerary teeth are detected either by routine radiographic examination, or as a result of clinical signs, such as delayed eruption or displacement of the permanent dentition[8]. Early diagnosis is important, so as to enable treatment planning and assure good prognosis[9].

This case report presents an unusual case of occurrence of a compound composite odontome along with a mesiodens.

Case Report

A 14 year old male reported to the Deptt. of Pedodontics, SGT Dental College, Gurgaon, with complaint of missing maxillary left permanent central incisor.

*Professor
**Reader
***Professor
****Professor, Department of Oral Pathology, SGT Dental College, Gurgaon, Haryana, India.



Figure 1 Retained left deciduous central incisor.



Figure 4 Odontome as seen after raising flap.

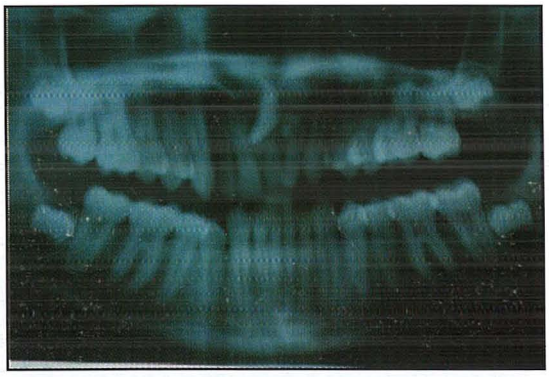


Figure 2 Preoperative orthopantomogram.

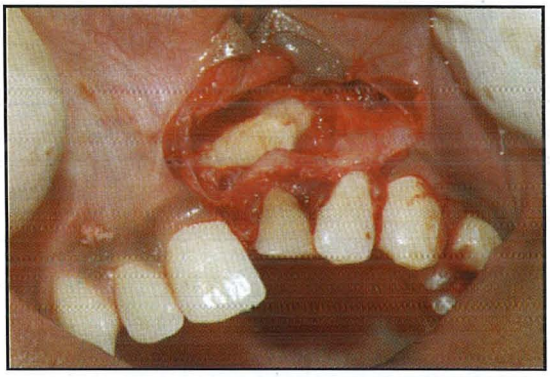


Figure 5 Permanent incisor seen diagonally placed.



Figure 3 Preoperative IOPA X ray.

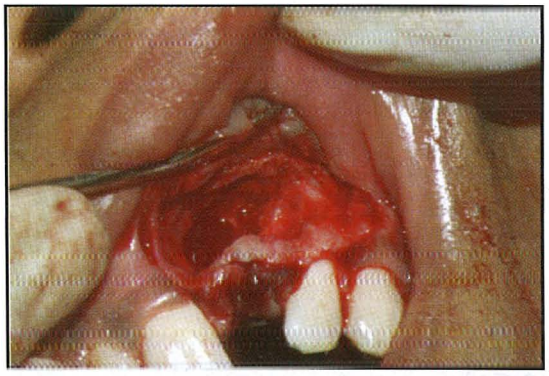


Figure 6 Surgical site after removal of incisor and mesiodens.



Figure 7 Removed odontome (10 tooth like structures).

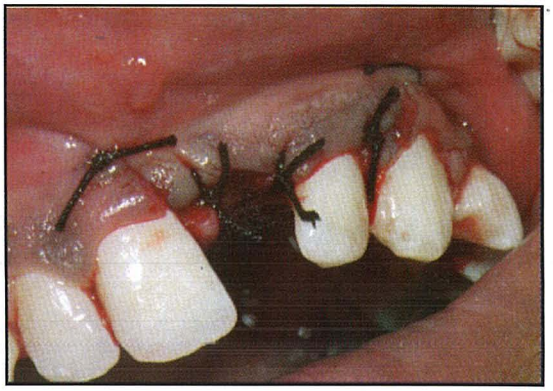


Figure 9 Suturing done.



Figure 8 Bifid root of central incisor.

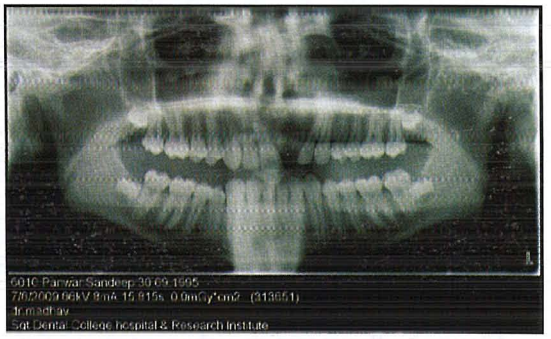
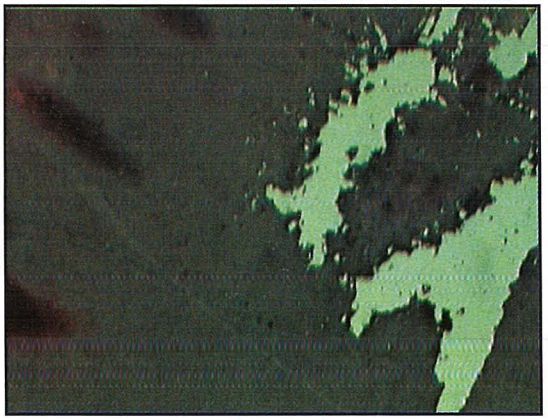


Figure 10 Post operative OPG.



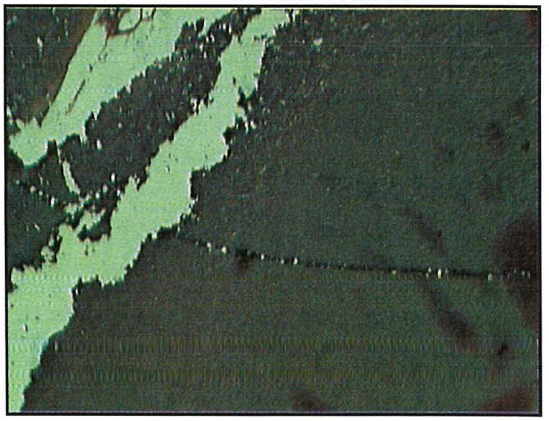


Figure 11 & 12 H & E section showing tubular dentin with empty pulp space.

Family and medical history was non contributory. Initial examination findings included a class I malocclusion with deep overbite and an unerupted maxillary left central incisor with retained deciduous central incisor (Fig. 1).

Panoramic radiograph showed several tooth like structures above the impacted and rotated central incisor. A mesiodens was also seen lying impacted. A provisional diagnosis of compound composite odontoma was made. Further radiographic examination (Clark's and occlusal technique) revealed that odontoma like lesion was buccal to the impacted central incisor while mesiodens was palatal (Fig. 2&3).

Under local anaesthesia, without any premedication, the odontoma was removed surgically raising buccal flap. The impacted central incisor was seen rotated and placed diagonally (Fig. 4 to 9). It had short, bifid root and was also removed along with the mesiodens.

Histopathological examination was done for the odontoma which showed abnormal enamel with enamel clefts. Section also exhibited tubular dentin with empty pulp space. These findings permitted the histopathological diagnosis of compound composite odontoma (Fig. 10 to12).

Patient was evaluated again after 1 month for prosthetic rehabilitation. As patient had deep bite and also space available was less for fabrication of prosthesis, the patient was referred to the Deptt. of Orthodontics for correction.

Discussion

Most odontomas are asymptomatic, although occasionally signs and symptoms relating to their presence do occur. These generally consist of unerupted or impacted teeth, retained deciduous teeth, swelling and evidence of infection[2].

The canines, followed by upper central incisors and third molars, are the most frequent teeth impacted by odontomas[10].In the present case, there was retained deciduous central incisor and impacted permanent central incisor.

The etiology of odontomas is unknown. Hitchin[11] suggested that an anomaly of tooth form such as composite odontoma can occur by interference with the mechanisms whereby genes control tooth formation and form, by a mutation in the genes concerned or by inheritance of those abnormal genes. Levy[12] produced a complex odontoma by inducing trauma to developing first molars in rats. He further mentioned that whether trauma would produce hypoplasia, odontome or a supernumerary depended on the stage of development of the cells traumatized.

Radiographically, the compound odontoma appear as a collection of tooth like structures of varying size surrounded by a narrow radiolucent zone[3]. Based on the radiographic appearance, a provisional diagnosis of compound composite odontoma was made.

There is no seeming predilection for occurrence of the odontome in particular sites of the oral cavity. It does not appear to be associated especially with supernumerary teeth, as might be suggested were it to occur with great frequency between the maxillary central incisor or distal to maxillary third molars[2]. In the present case, however, a supernumerary tooth was also found palatal to the odontome making it an unusual case.

The treatment of odontoma is surgical removal, and there is no expectancy of recurrence[2]. An odontome has a limited growth potential, but it should be removed because it contains various tooth formulations that can predispose to cystic change, interfere with eruption of permanent teeth and cause considerable destruction of bone[13]. In the present case both odontoma and mesiodens were extracted as they were causing impaction of permanent central incisor. If the impacted tooth is localized very much ectopically, it should be removed together with the odontome. In this case the permanent central incisor was rotated and diagonally placed, thus was also extracted. Kaban[4] states that odontomas are easily enucleated and adjacent teeth that may have been displaced by the lesion are seldom harmed by

the excision since they are usually separated from the lesion by a septum of bone.

The removed odontome had ten small tooth like structures which were single rooted. According to Shafers[2], if morphologic resemblance to teeth does exist, the structures are usually single- rooted.

Morning[14] found that malformation of the root of adjacent teeth was more common than crown malformation. This may be the result of inadequate space for continued root formation due to the impaction. The presence of short, bifid root of the impacted permanent central incisor could be explained on that basis.

Presence of primordium of the odontome might have inhibited the normal sequence of cytological events in the follicle of the unerupted incisor, causing delay in its eruption[15].

It is thus recommended that an individualized radiographic examination of any pediatric patient that presents clinical evidence of delayed permanent tooth eruption or temporary tooth displacement, with or without a history of previous dental trauma, should be performed. Early diagnosis of odontomas allows adoption of less complex and less expensive treatment and ensures better prognosis[5].

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