

An Erupted Compound Composite Odontoma Associated with Supernumerary Tooth

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Authors' contributions

This work was carried out in collaboration between all authors. Author CSK wrote the draft of the manuscript. Author NSG managed the literature searches. Author VR designed the figures, managed literature searches and contributed to the correction of the draft. Author CSK provided the case, the figures and supervised the work. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Though odontomas are one of the common odontogenic tumors, erupted odontomas are rare. Erupted odontomas may cause disturbance to the developing occlusion like impaction of the underlying teeth, ectopic eruption or displacement of the erupted teeth. This paper presents a case of 12 year old child who had reported with an erupted compound odontoma along with mesiodens not associated with any diseases or syndromes that led to the displacement of the adjacent teeth. The possible etiology, investigations required, clinical features and treatment done have been discussed.

Keywords: Compound odontoma; erupted odontoma; anterior maxilla; supernumerary tooth.

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1. INTRODUCTION

An odontoma is a benign tumour of odontogenic origin [1]. It is composed of normal dental tissue that has grown in an irregular way. The average age of people found with an odontoma is 14 years [1]. The condition is frequently associated with one or more unerupted teeth [2]. Though most cases are found impacted within the jaw, there are instances where odontomas have erupted into the oral cavity [2].

Odontomas erupting in the anterior maxilla can compromise the aesthetics, phonetics and function of the patient which may in turn affect the psychological wellbeing. Early diagnosis of odontomas is important for preventing tooth developmental problems and when accompanied by a proper treatment at the right time will result in a favorable prognosis. This literature gives a comprehensive discussion regarding the consequence of erupted odontoma and the treatment to be done.

2. CASE PRESENTATION

A male patient of age 12 years reported to the department of pedodontics and preventive dentistry with the complaint of irregularly arranged upper front teeth. There was no history of trauma and his family, medical and dental histories were non contributory. Intra oral examination revealed the presence of a tooth like structure in the maxillary central incisor region erupted labially with mesiodens lingual to it in the midline (Fig. 1).



Fig. 1. Intraoral view showing an erupted odontoma and mesiodens

The tooth like structure was white in color, hard in consistency and measured approximately 10 mm mesiodistally and 7 mm labiolingually. As a result, upper left permanent central incisor got displaced into left lateral incisor region and was also distolingually rotated. As a consequence to

this, permanent lateral incisor had erupted palatal to its usual location. Provisionally this tooth like structure was diagnosed as compound odontoma. Intra oral periapical radiograph and orthopantomograph were taken for radiographic evaluation.

2.1 Investigations

Radiographic investigations radiographic interpretation revealed two well defined overlapping radiopacities within the alveolar bone in maxillary left central incisor region. The small radiopacity resembled a tooth structure with crown portion having conical shape and the root portion was overlapped by a larger radiopacity. The larger radiopacity was having a well defined cortical border and on the immediate inner aspect, a thin uniform radiolucent band was present (Figs. 2 & 3).



Fig. 2. Radiograph showing the overlapping radiopacities of odontoma and mesiodens



Fig. 3. OPG showing the presence of odontoma and mesiodens and displacement of the adjacent teeth

The magnitude of radiopacity was similar to the adjacent teeth. Based on these features the smaller and larger radiopacities were diagnosed

as mesiodens and compound odontoma respectively.

Histopathological examination revealed that the haematoxylin and eosin stained decalcified hard tissue section showed collagen meshwork resembling dentinal tubule like structures and along with it hard tissue like structures are also observed (Fig. 4).

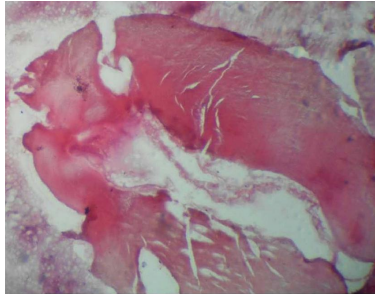


Fig. 4. Histological picture showing dentinal tubules and pulp space (h and e stain, 4x magnification)

These histopathological features were in favour of compound composite odontome confirming the provisional diagnosis.

2.2 Differential Diagnosis

Differential diagnoses based on the clinical features included a complex odontoma which forms as a result of apposition of odontogenic tissues though the tissues are less well organized, fusion, where there is the union of two or more teeth resembling a bigger tooth, supernumerary tooth in which a tooth found additional to normal dentition which may occur in any region of the dental arch and ectopic calcification, which is a pathological deposition of calcium salts in tissues.

2.3 Treatment

The treatment planned was extraction of mesiodens and odontome. Parent consent was obtained and after achieving local anesthesia with 2% lignocaine with 1:100000 adrenaline extractions of odontoma and mesiodens were done (Fig. 5).

The specimens were placed in 10% formalin and sent to the oral pathology department for histological examination.



Fig. 5. Photograph showing the extracted odontoma and supernumerary teeth

2.4 Outcome and Follow-up

Patient was recalled after 1 day and then after 1 week of extraction and the healing was found to be uneventful (Fig. 6).



Fig. 6. Photograph showing uneventful postoperative healing

Orthodontic treatment was started 1 month after extraction for the correction of malocclusion and the patient was kept under regular follow up (Fig. 7).



Fig. 7. Photograph showing subsequent orthodontic treatment

3. DISCUSSION

By definition, odontoma refers to any tumor of odontogenic origin. But it can also be referred as a growth in which both the epithelial and mesenchymal cells exhibit complete differentiation leading to enamel and dentin formation though in an abnormal pattern. This could be due to failure of the odontogenic cells

reaching a normal state of morpho differentiation. Now-a-days the odontoma represents a hamartomatous malformation rather than a neoplasm. As the lesion is composed of more than one type of tissue, it can also be called as a composite odontoma. When enamel and dentin are laid down in such a manner that there is anatomical resemblance to the normal tooth it is called as compound composite odontoma and when they are deposited simply as an irregular mass bearing no morphological similarity even to rudimentary teeth, the term complex compound odontoma is used. A new type known as hybrid odontoma is also reported by some authors. The complex form is less common than the compound type. The odontomas usually remain small, but occasionally they may become large causing bony expansion. Among all the odontogenic tumors, odontomas constitute about 22% tumors of the jaws [3,4]. The compound odontomas have a predilection for anterior jaws and complex odontomas have a predilection for the posterior jaws [5]. Interestingly both types of odontomas occur more frequently on the right side. Complex odontomas commonly occur in women while the compound variety is approximately equally distributed between the males and females [5,6]. The permanent dentition seems to be affected more frequently than deciduous dentition. Its etiology is unknown, but it has been suggested that local trauma or infection may lead to the production of such a lesion. Some times odontomas may manifest as part of syndromes [7]. Clinically, when the odontomas occur inside the bone they are called intraosseous and when they occur in the soft tissues they are called extraosseous odontomas [8]. Rarely they erupt into the oral cavity and are referred to as erupted odontomas. Rumel et al in 1980 described the first case of an erupted odontoma [9] but since then only a few cases have been documented in the literature [10]. The mechanism of odontoma eruption seems to be different from the normal tooth eruption and some feel that an increase in the size of the odontoma over time itself produces a force sufficient to cause bone resorption [11]. Another reason for odontoma eruption could be the bony remodeling of the jaws. Clinically odontomas may be discovered at any age, but the mean age was found to be 14.8 years with the second decade being the most prevalent age [12,13]. Even though asymptomatic, odontomas often cause disturbances in the eruption of teeth such as impaction, delayed eruption, retention of primary teeth or abnormalities in the position of the teeth such as tipping or displacement of

adjacent teeth. Rarely, odontoma can cause root resorption of the tooth, paresthesia [14] or anesthesia of the lower lip [15].

4. CONCLUSION

Compound odontomas may erupt into the oral cavity and cause displacement of the teeth. This condition mandates early diagnosis and management as it may affect the self-esteem and general social interaction of the patient.

CONSENT

All authors declare that written informed consent was obtained from the patient for publication of this case report and accompanying images.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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