

Case Report

Compound Odontome - A Case Report

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Abstract

Compound odontoma is a malformation typical of young adults, with a slight preference for the male gender and the anterior region of the maxilla. Clinically asymptomatic, it can be detected during a radiological investigation in connection with the persistence of deciduous dental elements and the impaction of definitive ones. The treatment of choice is excisional surgery and recurrence is a rare event.

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1. Introduction

The term “odontoma” was first coined by Paul Broca in 1866, who defined the term as tumor formed by the overgrowth of complete dental tissue. Odontomas are developmental anomalies resulting from the growth of completely differentiated epithelial and mesenchymal cells that give rise to functional ameloblast and odontoblast [1].

Odontomas are hamartomatous developmental malformations of the dental tissues. According to the World Health Organization (WHO), a compound odontoma is defined as “a malformation in which all dental tissues are represented in a more orderly pattern than in the complex odontoma, so that the lesion contains many tooth-like structures. Most of these structures do not morphologically resemble the teeth in the normal dentition; however, enamel, dentin, cementum and pulp are arranged as in the normal tooth”.

Odontomas are developmental anomalies consequential to the growth of totally differentiated epithelial and mesenchymal cells that generate ameloblasts and odontoblasts. These cells and tissues can look either normal or not fully developed in structure. The level of differentiation in the formed tissues can be variable, and both enamel, dentin, cementum, and pulp may be present within the compound odontoma [2, 3].

The complex odontomas are characterized by non-descript masses of dental tissues, while compound odontomas by multiple, well-formed tooth-like structures. In 1914, odontomes were classified according to their developmental origin as epithelial, composite (epithelial and mesodermal), and connective tissues. According to the WHO classification, odontomes can be divided into three groups such as complex, compound, and ameloblastic fibro-odontomes [4].

Compound odontomas commonly occur in the incisor-canine region of the maxilla and complex odontomas are frequently located in the premolar and molar region of both jaws [5].

Radiographically, compound odontomas are characterized by multiple irregular radio-opaque lesions that vary in size and shape and contains tooth-like structures called denticles, whereas complex odontomas manifest as a radiopaque solid mass with occasional nodular elements and surrounded by a fine radiotransparent zone. The lesions are unilocular and are separated from the normal bone by a well-defined corticalization line [6].

2. Case Report

A 28 year old female visited the Department of Oral and Maxillofacial Surgery, with the chief complaint of the retained tooth in the upper right back teeth region. No relevant medical history was noted. There was no history of trauma to his orofacial region. There was no family history of unerupted teeth or hypodontia. On palpation, there was no swelling or tenderness present. In the mandibular arch 1st molar of both side was not present. (According to patient extraction was done 10 years back). Retained deciduous canine was present in the right maxilla.

On radiological investigation OPG () reveals approximately 3-4 calcified or radiopaque structures which were similar to teeth and were located between lateral incisor and first premolar and impacted canine is noted just over the radiopaque structure.

Cravicular incision is given from mesial aspect of lateral incisor (12) to distal aspect of first premolar with vertical release. Mucoperiosteal flap is elevated and extraction of deciduous canine and removal of calcified tooth like structures were done followed by closure with 3-0 silk.

Based on clinical and radiographic features, it was suggestive of compound odontome. The postoperative radiograph showed complete excision of odontomas and wound healing was satisfactory without any complications.

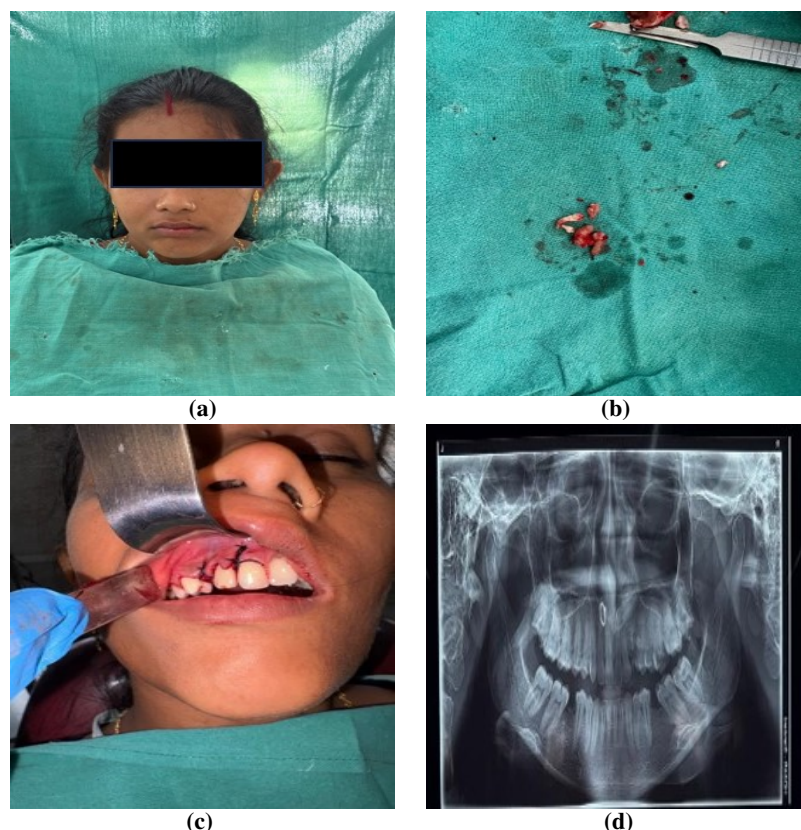


Figure 1: (a) Pre operative profile, (b) odontomes, (c) Intra operative sturing, (d) Radio graph

3. Discussion

Odontomas are relatively common, asymptomatic odontogenic hamartomatous malformations. The most common clinical presentation for an odontoma is the association with impacted or retained primary teeth [7]. The compound odontome is known to occur more commonly in the maxilla (67%) than the mandible (33%), with a marked predilection for the anterior maxillary region (61%) [8, 9].

In 1946, Thoma and Goldman gave a classification which is as follows [10]:

- Geminated composite odontomes: two or more, more or less well-developed teeth fused together.
- Compound composite odontomes: made up of more or less rudimentary teeth.
- Complex composite odontomes: calcified structure bearing no great resemblance to the normal anatomical arrangement of dental tissues.
- Dilated odontomes: the crown or root part of tooth shows a marked enlargement.
- Cystic odontomes: an odontome that is normally encapsulated by fibrous connective tissue in a cyst or in the wall of a cyst.

According to the World Health Organization (WHO) classification, odontomes can be divided into three groups [11]:

1. Complex odontome: when the calcified dental tissues are simply arranged in an irregular mass bearing no morphologic similarity to rudimentary teeth.

2. Compound odontome: composed of all odontogenic tissues in an orderly pattern, which result in many teeth-like structures, but without morphological resemblance to normal teeth.
3. Ameloblastic fibro-odontome: consists of varying amounts of calcified dental tissue and dental papilla-like tissue, the later component resembling an ameloblastic fibroma. The ameloblastic fibro-odontome is considered as an immature precursor of complex odontoma.

Compound odontomas show a high degree of morpho- differentiation, resulting in a lesion consisting of many tooth-like structures generally enclosed in a fibrous capsule [12].

4. Conclusion

Odontomas rarely erupt into the mouth and tend to be associated with impacted as well as retained teeth. A thorough visual, manual as well as radiographic examination should be performed on all pediatric patients who present with clinical evidence of delayed eruption or missing tooth. Also, early diagnosis of odontomas allows the adoption of a less-complex and less-expensive treatment and ensures better prognosis.

Article Information

Ethical Approval: Ethical approval was not required for this case report according to the policies of the relevant institution.

Informed Consent: The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Consent for Publication: Written informed consent was obtained from the patient for publication of the case details and any accompanying images.

Patient Privacy: All identifying information has been removed to protect the patient's privacy.

Data Availability: The data supporting this case report are available from the corresponding author upon reasonable request, subject to patient confidentiality.

Conflict of Interest: The authors declare no conflict of interest.

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