

### Odontome in Maxillary Anterior Region Causing Impaction of Permanent Central Incisor Tooth: A Case Report

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### ABSTRACT

Odontomas are the most common odontogenic tumor. They are considered to be hamartomas rather than neoplasms. They are generally asymptomatic and are discovered on routine radiographic examination. Odontomas are basically classified into two types, complex and compound odontomes. Various theories or etiological factors are been quoted for the occurrence of odontomes. Odontomas might be associated with disturbance in tooth eruption. Other symptoms include retention of deciduous teeth, pain, swelling, expansion of cortical bone, tooth displacement.

*Here, we are describing a case of complex odontome in the maxillary anterior region causing impaction of the permanent maxillary central incisor of the left side.* 

Keywords: O dontoma, Unerupted tooth, Odontogenic tumor.

### **INTRODUCTION**

The term odontome in medicine and dentistry was originally used for any tumor and/or tumor-like lesion, like neoplastic cyst arising from tooth forming tissues.<sup>1</sup>

The term odontome was coined by Paul Broca in 1867. Broca defined the term as tumors formed by the overgrowth or transitory of complete dental tissue. Odontomas by definition alone refers to any tumor of odontogenic origin. Variation in the normal eruption of teeth is a common finding, but significant deviations from normal should alert the clinician to investigate further. It is suggested that an individualized radiographic examination should be performed for patients who present with clinical evidence of delayed permanent tooth eruption or temporary tooth displacement or retained deciduous teeth with or without a history of previous dental trauma.<sup>2,3</sup>

Here, we are describing a case of complex odontome in the maxillary anterior region

causing impaction of the permanent maxillary central incisor of the left side.

### **CASE REPORT**

A 19 year old female patient came with a complaint of missing tooth in the maxillary anterior region. No history of trauma was present at the site of the missing tooth. Also no swelling or any other significant finding was noted. Radiographic examination using IOPA (Fig. 1) and OPG (Fig. 2) shown a impacted permanent maxillary central incisor and the presence of tooth-like structures in the eruption path of the impacted tooth. Depending on the radiographical images a provisional diagnosis of the odontome was made and surgical excision of the lesional part was planned. Under local anesthesia, the incision (Fig. 3) was given at the crest of the ridge and the flap was reflected (Fig. 4 and 5). The exposure of the odontome (Fig. 6) was done after removal of some part of the bone using micromotor and bur. All the tooth like structures was removed and the surgical site was approximated closely using 3-0 silk (Fig. 7 and 8).

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**Fig1.** *IOPA* showing presence of odontome at the eruption path of the permanent maxillary central incisor.



Fig2. OPG showing the presence of odontome.



Fig3. Intraoral image at the time of incision.



Fig4. The flap was reflected.



Fig5. Reflection of the flap.



Fig6. Exposure of the odontome at the surgical site.



Fig7. The surgical site was sutured using 3-0 silk.



Fig8. The excised specimen of the odontome.

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### DISCUSSION

Odontomas constitute about 22% of all odontogenic tumors of the jaws. In a broad sense, it means a growth with both the epithelial and mesenchymal components exhibiting complete differentiation resulting in functional ameloblast and odontoblasts. These cells in turn form variable amounts of enamel, dentin and pulpal tissue of the odontoma. This enamel and dentin were usually laid down in an abnormal pattern because the organization of odontogenic cells failed to reach the normal state of morpho differentiation. So they are considered as developmental anomalies rather than true neoplasm.<sup>1,4</sup>

The radiographic findings of odontomas depend on their stage of development and degree of mineralization and appears as radiopaque masses surrounded by radiolucent areas corresponding to the connective tissue histologically.<sup>4</sup>

Numerous etiological factors are attributed for the formation of odontome which includes local trauma. infectious/ inflammatory process, odontoblastic hypersensitivity, hereditary anomalies (Gardner syndrome, Hermann's syndrome) and alterations in genetic components responsible for controlling dental development.5

As this lesion is composed of more than one type of tissue, it is called as composite odontome. Odontomas are subdivided into compound and complex types.<sup>2</sup>

- Compound odontomas is composed of multiple, small tooth like structures. If the calcified dental tissues appear as an irregular mass bearing no morphologic similarity to even rudimentary teeth, they are called as complex composite odontome.
- Complex odontomas are less common than the compound variety and are in the ratio of 1:2.

In 1946 Thoma and Goldman classified them  $as^{3,6}$ :

- Geminated composite odontomes:- Two or more well developed teeth fused together.
- Compound composite odontomes:- Consists of more or less rudimentary teeth.
- Complex composite odontomes:- Are calcified structure that has no great resemblance to the normal anatomical arrangement of dental tissues.

- Dialated odontomes:- There is marked enlargement of the crown or root part of the tooth.
- Cystic odontomes:- Is normally encapsulated by fibrous connective tissue in a cyst or in a wall of cyst.

In general they are asymptomatic, have slow growth, and seldom exceed the size of a tooth, but when large can cause expansion of the cortical bone. Odontomas may be diagnosed at any age but they are usually detected during the first two decades of life. One study analyzed 396 cases and showed that diagnosis usually happens between ages 11 and 15 years.<sup>7,8</sup>

In the present case, the permanent maxillary left central incisor was impacted due to the presence of odontome. Various authors including Shetty RM et al<sup>1</sup>, BaxiS et al<sup>9</sup> and Baldhawa RS et al<sup>10</sup> also found the impacted maxillary central incisor due to the presence of odontome.

Early diagnosis will facilitate the clinician to adopt a simpler and less complex approach of treatment for a better prognosis.<sup>3</sup>

When the odontomas are associated with unerupted teeth, orthodontic traction of the impacted tooth soon after removal of the lesion may be needed, especially if it is not diagnosed and treated early.<sup>8,11</sup>

Differential diagnosis includes Hypercementosis which is attached to a part of the root and is usually separated from the periapical bone by the radiolucent periodontal ligament space, which surrounds the entire root. Condensing osteitis may usually be ruled out because it usually occurs at the periapex of nonvital tooth and doesn't have a radiolucent rim. Periapical osteosclerosis is usually quite irregular in shape with the absence of radiolucent border.<sup>1,4</sup>Also the differential diagnosis includes amelo blasticfibroodontoma, ameloblastic fibroma and odonto ameloblastoma.<sup>3</sup>

### CONCLUSION

A thorough visual, manual as well as radiographic examination should be performed for all the patients who present with clinical evidence of delayed eruption, missing tooth or temporary tooth displacement, with or without history of trauma. Early diagnosis of odontomas helps us to adopt a less complex and less expensive treatment, ensures better prognosis, avoid relapse of the lesion and avoid displacement or devitalization of adjacent tooth.

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