

# Erupted complex odontoma of the posterior maxilla: A rarity

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## Abstract

Complex odontomas, hamartomas of aborted tooth development, mainly occur in posterior part of the mandible and rarely erupt into the oral cavity. The spontaneous eruption may be associated with pain, inflammation of adjacent soft tissues or recurrent infection. The present case of complex odontoma is of particular interest due to its apparent eruption in the maxillary posterior segment, its association with agenesis of the second molar and impacted third molar; with the lesion being completely asymptomatic.

**Key words:** Complex, eruption, hamartoma, maxilla, odontoma

## INTRODUCTION

Odontoma, the complex type is a tumor-like malformation in which all the dental tissues are represented, although in a more or less disorganized pattern. It is one of the most common odontogenic tumors with the relative frequency that varies between 5% and 30%.<sup>[1,2]</sup>

The active growth phase of the complex odontoma is during the formation of the dentition; with preponderance of the cases diagnosed during the second decade of life. The posterior portion of the mandible is the most frequent site of occurrence followed by anterior maxilla.<sup>[2]</sup> Clinically, it presents as slow growing, expanding lesion; majority of them being asymptomatic, often an incidental finding on a radiograph or diagnosed through failure of eruption of adjacent permanent teeth.<sup>[3]</sup> Radiographically, the lesion commences as a well-defined radiolucency with progressive deposition of radio-opaque material of a nodular nature.<sup>[4]</sup> Resorption of neighboring teeth is rare. Many of these lesions overlie an impacted tooth.

Exposure of the tumor through the oral mucosa is an exception; that may be accompanied by pain, infection associated with suppuration or inflammation of the adjacent soft tissues. In view of its exception, a case of complex odontoma in a 22-year-old male patient, with an apparent eruption in maxillary posterior segment associated

with agenesis of maxillary second molar and impacted third molar is reported herewith.

## CASE REPORT

A 22-year-old apparently healthy male patient reported to the out-patient department, M.M College of Dental Sciences and Research, Mullana (Haryana, India), for the evaluation of a malformed tooth with respect to the left maxillary posterior region with 7 months of evolution. Extraoral examination was unremarkable. Intraoral examination revealed a solitary, yellowish tooth-like mass measuring 2 cm × 3 cm at the level of alveolar ridge distal to the left maxillary first molar. On palpation, the mass was hard in consistency, nontender, had irregular surface and exhibited no mobility. The lesion was asymptomatic with no infection or ulceration of the surrounding mucosa [Figure 1a and b]. No cervical lymphadenopathy was present.

To establish the precise location of the lesion, and its relation to the surrounding anatomical structures; complementary studies were requested including intraoral periapical view, computed tomography scan and three dimensional reconstruction scan. These revealed uniformly dense, irregular radio-opaque mass surrounded by a corticated border, located distal to the erupted 26, associated with agenesis of 27 and impacted 28, seen in close approximation to the tumor [Figure 1c-f]. In view of

these findings, a provisional diagnosis of erupted complex odontoma was made.

Informed consent was obtained from the patient. Under general anesthesia, access to the tumor was achieved through intraoral approach and the retrieved specimen was examined histologically. Grossly, the specimen appeared as yellowish calcified mass with rough surface; showing no resemblance to any tooth of the normal series. Microscopic examination of the decalcified sections stained with hematoxylin and eosin revealed a disordered mixture of dental tissues enclosing clefts that contained mature enamel, lost during decalcification [Figure 2]; suggestive of complex odontoma. The impacted maxillary third molar was removed along with the tumor. The postoperative course was uneventful, with no evidence of clinical and radiological recurrence during 6 months follow-up period.

## DISCUSSION

The odontogenic nature of complex odontoma has never been questioned. The etiology is uncertain; but proposed reasons include local trauma, hereditary anomalies (Gardner's syndrome, Hermann's syndrome, basal cell nevus syndrome), odontoblastic hyperactivity,<sup>[5]</sup> infection, persistence of portion

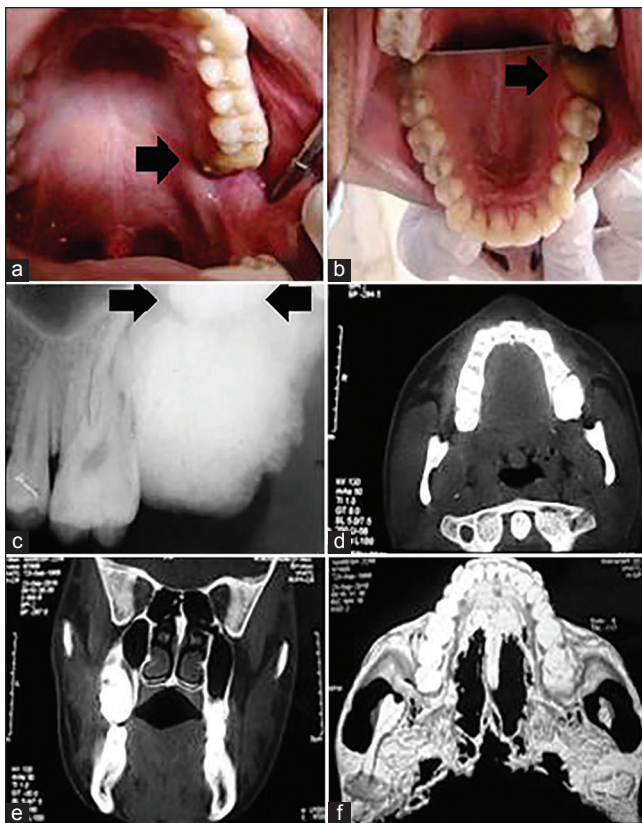
of dental lamina between the tooth germs or inheritance through a mutant gene or interference, possibly postnatally with the genetic control of tooth development.<sup>[6]</sup>

Erupting odontomas are extremely uncommon, with the first case being described in 1980.<sup>[7]</sup> The most common associated symptoms are pain and swelling, followed by malocclusion. Recurrent infection following eruption has been reported,<sup>[8]</sup> but no such findings were observed in the present case, with the lesion being completely asymptomatic.

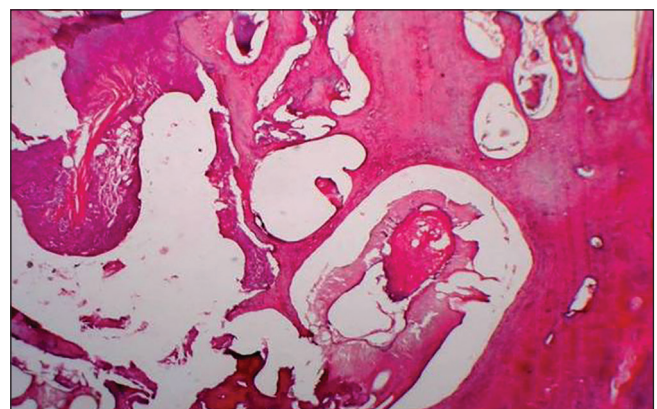
The reason for eruption is ascribed to the eruptive forces of the apparently impacted teeth. However, in case of missing tooth; alveolar bone remodeling, sequestration of the overlying bone or reactive growth of the capsule surrounding an odontoma,<sup>[3,9]</sup> may contribute to this phenomenon. The suggested reasons for the eruption of odontoma do fit well with respect to the present case. Further, the mechanism of eruption differs from that of normal tooth eruption; attributed to the absence of periodontal ligament and root in odontoma. Therefore, the force required to move the odontoma is not linked to the contractility of the fibroblasts, as in the case of teeth.<sup>[10]</sup>

Most odontomas (70%) are associated with pathological anomalies that include devitalization, malformation, aplasia, malposition and impaction of the neighboring teeth.<sup>[11]</sup> In the present case, the erupted odontoma was associated with aplasia of the maxillary second molar and impaction of the maxillary third molar; a unique finding.

The radiographic characteristics are usually diagnostic. However, during its development, complex odontoma may resemble ameloblastic fibroma or fibro-odontoma; or may be confused with an osteoma or other highly calcified bone lesions.<sup>[1,12]</sup> Histopathological examination is therefore, necessary to ascertain a definitive diagnosis.



**Figure 1:** (a and b) Intra-oral aspect of the erupted odontoma (arrows) (c-f) preoperative radiographs depicting a dense radio-opaque mass distal to 26, associated with the crown of impacted 28 (arrows)



**Figure 2:** Photomicrograph of the decalcified section reveals disordered mixture of dental tissues and clefts occupied by enamel before decalcification (H and E)

Conservative surgical enucleation is considered to be the treatment of choice in most cases of complex odontoma. As these are often associated with impacted teeth, the possibility of eruption of the impacted tooth, after a presumed obstructive odontoma has been surgically removed is an important issue. In children, the impacted permanent teeth, depending on the age of the child and the tooth development, may be left to erupt spontaneously or may be guided to occlusion via orthodontic traction. In any case, follow-up is essential following odontoma excision. However, in the present case, the associated impacted tooth was removed along with the tumor taking into consideration that it was severely malpositioned with no possibility to erupt.

In those cases, where an impacted tooth is not involved, immediate surgical intervention is not absolutely necessary, considering the high accuracy of the radiographic diagnosis, and the very limited potential of the odontomas.

## CONCLUSION

Since, odontomas represent a large proportion of jaw tumors, therefore, sound knowledge of their characteristics is necessary for establishment of proper diagnosis and management. Although, these have strictly limited growth potential; the mass should be enucleated surgically as a potential source of obstruction to erupting teeth or as a possible focus for infection.

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