Case Report: Dental science

“Case Report of a compound composite odontome with an impacted maxillary canine”

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ABSTRACT:
Odontomas are the most common type of odontogenic tumors and are generally asymptomatic. Frequently they interfere with the eruption of the teeth. This is the case report of a compound composite odontoma in a 15 years old girl, which resulted in failure of eruption of the permanent maxillary left canine while the contra lateral tooth had erupted. A calcified mass was seen in the radiograph and was provisionally diagnosed as a compound composite odontoma following which the odontoma was enucleated along with disimpaction of the left maxillary canine.

Keywords: odontomas, calcified, disimpaction, enucleation

INTRODUCTION
Odontomas are the most common of odontogenic tumors of the jaws. They are mixed tumors, consisting of both epithelial and mesenchymal cells, that present a complete dental tissue differentiation (enamel, dentin, cementum, and pulp).1,2 These tumours are basically formed of enamel and dentin but they can also have variable amounts of cementum and pulp tissue. It was in 1867 that Paul Broca first used the term “Odontoma.” Broca defined the term as “tumors formed by the overgrowth of transitory or complete dental tissues”.3 Odontomas are further subclassified based upon their gross and radiographic features into compound (small tooth like structures) or complex (a conglomerate of dentin, enamel and cementum).4 In 1974, Shafer, Hine and Levy described odontomes as tumors of odontogenic origin but their current views support that an odontome is now widely accepted by most authorities as a hamartoma.5

CASE PRESENTATION
A 15 years old female patient reported to the Department of Oral Medicine and Radiology, YMT Dental College and Hospital, Kharghar with a chief complaint of unerupted upper left front tooth, while the contra lateral tooth had already erupted. Medical and family histories were non-contributory. No history of trauma to the face or mouth was reported. Clinical examination revealed no facial asymmetry extra orally on inspection. On palpation, there was no swelling or tenderness present. Intraorally, unerupted 23 without any swelling or inflammation of the overlying mucosa was noticed (Fig. 1&2). On palpation intra orally, slight tenderness was reported by the patient in the upper left vestibule above the missing tooth (23).
INVESTIGATIONS
The intraoral periapical (Fig. 3), Occlusal (Fig 4) and panoramic radiographs (Fig. 5) revealed the presence of a radiopaque mass in 23 region obstructing its eruption. Clark’s radiographic technique revealed the presence of two radiopaque masses, one in the palatal region (impacted upper left maxillary canine) of the upper left central and lateral incisors and the other (calcified mass) buccal to it.

The radiograph showed the presence of impacted maxillary left canine and a radiopaque mass consisting of tooth like structures.

Figure 5: On the basis of clinical and radiographic findings, it was provisionally diagnosed as a compound composite odontoma.
TREATMENT

Under local anaesthesia, surgical removal was done. A mucoperiosteal flap on the palatal surface (Fig 6) from the right permanent central incisor to left permanent second molar was raised. The layer of bone overlying the palatal surface from 11 to 23 was removed and the crown of the canine was exposed. (Fig 7).

The bone was further removed to expose the root of the impacted canine and it was removed. (Fig 8). A window was then created in the bone from the labial aspect between 22 and 24 to gain access to the calcified mass. (Fig 9) This mass was excised completely and submitted for histopathological evaluation. (Fig 10)

OUTCOME AND FOLLOW-UP: The histopathological report confirmed the specimen to be compound composite odontoma. The patient was kept under observation and followed up for 6 months. The healing was uneventful.
After 6 months complete healing was seen and patient was advised for replacement of missing teeth and referred to the concerned department. (Fig 12)

DISCUSSION
The most common clinical presentation for an odontoma is the association with impacted or retained primary teeth. The case presentation described above was in accordance with the finding. They can be discovered at any age, and in any location of the dental arch. The mean age of detection on an average is 14.8 years, with the prevalent age being the second decade of life. There is a slight predilection for occurrence in males (59%) compared to females (41%). The compound odontome is known to occur more commonly in the maxilla (67%) as compared to the mandible (33%), with a marked predilection for the anterior maxillary region (61%). The etiology of odontoma is unknown. It has been suggested that local trauma or infection may lead to production of
such lesion. It may also be caused due to a mutant gene or interference or by traumatic interference. In 1946, Thoma and Goldman gave a classification which is as follows.

- **Gminated 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 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 World Health Organization (WHO) classification, odontomes can be divided into three groups.

- **Complex odontome**: When the calcified dental tissues are simply arranged in an irregular mass bearing no morphologic similarity to rudimentary teeth.
- **Compound odontome**: Composed of all odontogenic tissues in an orderly pattern, which result in many teeth-like structures, but without morphologic resemblance to normal teeth.
- **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.

A new type known as hybrid odontome is also reported by some authors. The radiographic findings of odontomas depend on their stage of development and degree of mineralization. The first stage is characterized by radiolucency due to lack of calcification. Partial calcification is observed in the intermediate stage, while in the third stage the lesion usually appears as radiopaque masses surrounded by radiolucent areas corresponding to the connective tissue histologically.

Histopathologically, odontomas are normal appearing enamel or enamel matrix, dentin, pulp tissue and cementum, which may exhibit a normal relation to one another. Compound odontomas are formed by tooth-like structures which resemble pulp tissue in the central portion surrounded by a dentin shell and partially covered by enamel. Complex odontomas are conglomerates without orientation of dentin, enamel; enamel matrix, cementum and areas of pulp tissue. Odontomas are treated by conservative surgical removal and there is little probability of recurrence. Timely detection and surgical enucleation of odontoma followed by curettage is recommended to prevent complications such as tooth loss, cystic changes, bone expansion and delayed eruption of permanent teeth. Surgical excision of odontoma and its surrounding soft tissue is recommended as the treatment of choice because of the possibility of its cystic degeneration. The lack of recurrence indicates that conservative excision is adequate.

**REFERENCES**


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