

**COMPOUND ODONTOMA ASSOCIATED WITH A MESIODENS- A
RARE CASE REPORT**

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ABSTRACT:

Odontomas are developmental anomalies of the dental tissues that may interfere with the eruption of the associated tooth. These lesions are generally asymptomatic and are usually detected on routine radiographs. Morphologically odontomas can be classified as complex, when present as irregular masses containing different types of dental tissues, or as compound if there is superficial anatomic similarity to even rudimentary teeth – the denticles. The present report describes the surgical management of a case of compound odontoma in 11-year-old boy who presented with a complaint of missing tooth in maxillary anterior region. After the lesion was surgically removed under local anesthesia, histopathological examination confirmed the diagnosis of compound odontoma.

KEYWORDS- Compound odontomas, mesiodens, surgical excision

**Cite this Article:Rakhshanda Antulay, Aruna Tambuwala, Aatif Sayed, Gaurav Khutwad:
Compound odontoma associated with a mesiodens- A rare case report: Journal of Head &
Neck physicians and surgeons Vol 3 ,Issue 3, 2015 :Pg 155- 164**

INTRODUCTION :

Odontomas are termed as the most common odontogenic tumors of the jaws and are characterized by their slow growth and nonaggressive behavior. Odontomas are regarded to be

developmental anomalies resulting from the growth of completely differentiated epithelial and mesenchymal cells. These tumors are basically formed of enamel and dentin but can also have variable amounts of cement and pulp tissue^[1]. During the development of the tumor, enamel and dentin are deposited in such a way that the outcome anatomically resembles normal teeth, wherein the lesion is classified as a compound odontoma. However, when the dental tissues form a simple irregular mass occurring in a disorderly pattern, it is described as a complex odontoma^[2]. Compound odontomas are suggested to appear more frequently than complex odontomas^[3,4]. They are mixed benign tumors composed of both epithelial and ectomesenchymal tissues in variable proportions and with different degrees of development^[5]. These are regarded as composite odontomas due to the presence of more than one type of tissues^[6]

In 1867, Paul Broca was the first to use the term “Odontoma.” Broca defined the term as “tumors formed by the overgrowth of transitory or complete dental tissues”.^[6] Most of the authors accept that the odontoma represents a hamartomatous developmental malformation rather than a neoplasm.^[2] The etiology of odontoma is unknown, although different factors such as trauma, local infection at the site of infection, genetic mutations, or even hereditary factors have a role.^[1,3,7,8] The World Health Organization (WHO) has classified odontomas according to the following histopathological findings:^[9]

- Complex odontomas, in which the dental tissues are well formed but exhibit an amorphous and more or less disorderly arrangement.
- Compound odontomas, in which the dental tissues are arranged in an orderly pattern, but their size and conformation are altered, giving rise to multiple small teeth like elements called odontoids or denticles.^[10]

These odontogenic tumors are found anywhere in the dental arches. The majority of odontomas which are located in the anterior region of the maxilla commonly in the incisor-canine region are compound, while most of them located in the premolar-molar areas, especially in the mandible, are complex odontomas.^[1,9,11] In general, they constitute 22% of all odontogenic tumors of the jaws.^[3] The etiology of the odontoma is unknown.^[9] However, it has been suggested that trauma and infection at the place of the lesion can offer ideal conditions for its appearance^[7,8].

Odontomas are generally asymptomatic, have slow growth, and rarely exceed the size of a tooth, but when large can cause expansion of the cortical bone.^[1,2] Generally, odontomas are diagnosed in the second or third decades of life with no sex predilection.^[4,6] Reports vary as to the frequency of odontoma in different population groups. In general, they constitute 22% of all odontogenic tumors of the jaws.^[3] This paper describes the clinical features, diagnosis and treatment of a case of compound odontoma, associated with an unerupted maxillary central incisor and a mesiodens.

CASE REPORT: A 11-year-old boy reported to the department of Oral And Maxillofacial Surgery seeking treatment for his unerupted maxillary permanent right central incisor. His medical and family history was non-contributory. Intraoral examination revealed the clinical absence of maxillary right central incisor, while the contralateral tooth was erupted and normally positioned in the arch. The radiographic examination revealed the presence of impacted maxillary right central incisor, and a supernumerary tooth suggestive of being a mesiodens. Multiple small teeth like radio-opaque structures adjacent to and partially overlapping the coronal portion of the unerupted incisor were seen, which were surrounded by a thin radiolucent zone and measuring approximately 1.5×1.0 cm.

Depending on the clinical and radiographic examination, provisional diagnosis of compound odontoma was derived. Treatment consisted of conservative surgical removal of the lesion and clinical and radiographic follow-up. After achieving local anaesthesia, a full-thickness mucoperiosteal flap was reflected from maxillary right lateral incisor to the left lateral incisor, on the labial surface. A layer of bone overlying the tumour and unerupted incisor was removed using a round surgical bur under constant irrigation with saline as a coolant. The calcified teeth like structures were removed, without disturbing the unerupted permanent incisor. The surgical site was curetted and irrigated with povidoneiodine--saline solution. Hemostasis was achieved and the flap was approximated and closed primarily with 3--0 silk sutures. The specimen was placed in 10% formalin and sent for histopathological examination, which confirmed the provisional diagnosis of compound odontoma. One week later the sutures were removed, with normal healing being observed.



EXTRA-ORAL



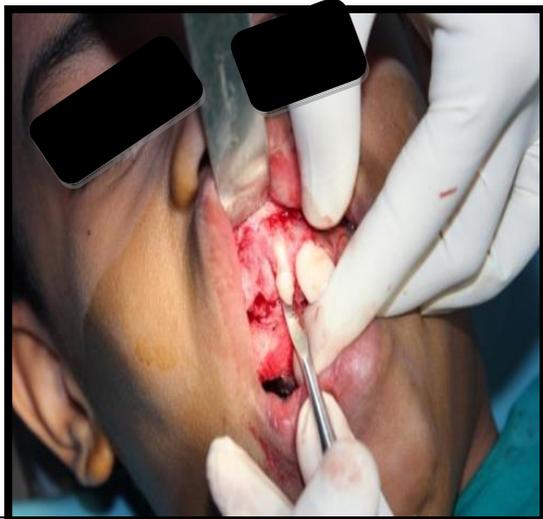
INTRA-ORAL- PRE OPERATIVE



MAXILLARY ARCH PRE OPERATIVE



MANDIBULAR ARCH- PRE OPERATIVE



OPERATIVE REMOVAL OF MESIODENS



OPERATIVE REMOVAL OF ODONTOMA



POST OPERATIVE



ODONTOMA



ODOTOMA AND MESODENS REMOVAL

DISCUSSION :

Odontomas are common odontogenic lesions, generally asymptomatic, and are rarely diagnosed before the second decade of life, which frequently lead to impaction or delayed eruption of permanent teeth.^[1,2]

Impaction has been defined as the prevention of the eruption (often by a physical barrier) of a tooth to the expected times in to a normal functional position.^[2] The possible reasons for failure of eruption may be the lack of space, malformation due to early trauma, mechanical obstruction like supernumerary tooth, odontoma, other odontogenic tumors, cysts, or scar tissue due to early loss of primary tooth.^[5,7] In the presented case compound odontoma was associated with unerupted maxillary right central incisor which was an obvious causative factor for impeding its eruption.



RADIOGRAPH SHOWING MESODENS AND ODONTOMA



RADIOGRAPH SHOWING MESODENS AND ODONTOMA



RADIOGRAPH SHOWING MESODENS AND ODONTOMA

Odontomas can also manifest as part of syndromes, such as Gardner syndrome, basal cell nevus syndrome, Tangier disease or Hermann syndrome.^[1] Such association was not seen in the presented case. Supernumerary teeth are defined as extra teeth in comparison to normal dentition.

More commonly seen in the central region of the upper or lower jaw, its occurrence in the mandible is rare. The most common type of supernumerary tooth is mesiodens which may occur as single, multiple, unilateral or bilateral.^[14]

Odontomas are circumscribed, encapsulated tumors which can be removed successfully by conservative surgery. Spontaneous eruption of the impacted tooth after removal of the obstruction has been reported by many authors.^[1,11] A less conservative approach has been advocated by some authors which include exposure of the unerupted tooth at the time of surgery and placement of bonded attachment and ligature/e-chain for orthodontic traction, to facilitate rapid eruption.^[3] This approach, could possibly result in poor gingival margin, inadequate gingival tissue attachment and a discrepancy of gingival level between the exposed tooth and the adjacent teeth.^[15] Hence, in the present case, we advocated a more conservative approach of removal of odontoma. Along with that, bone overlying the unerupted incisor was removed, the flap replaced back in position and the incisor allowed to erupt naturally in position.

Generally odontomas are asymptomatic, often associated with delayed eruption or impaction of permanent teeth and retained primary teeth. In some cases, pain, infection, regional adenopathies, alveolar bone expansion or tooth displacement may be present.^[1,3] Management usually consists of conservative surgical removal of the odontome and the prognosis after treatment is favourable, with least possibility of recurrence.^[1]

Radiographically, complex odontoma appears as an irregular mass of calcified material which is surrounded by a thin radiolucent area with smooth periphery, and the compound type shows calcified structures resembling teeth in the centre of a well-defined radiolucent lesion.^[3,9] A developing odontoma can be ascertained by routine radiography, but may be difficult to identify due to lack of calcification.^[13] The histological examination of odontomas often shows the presence of enamel matrix, dentin, pulp tissue, and cementum that can exhibit a normal relationship.^[1,13] Compound odontomas are formed by tooth-like structures which resemble pulp tissue in the centre surrounded by dentin and partially covered by enamel. Complex odontomas are conglomerates with lack of orientation of dentin, enamel, enamel matrix, cementum, and areas of pulp tissue. The capsule of connective tissue that surrounds an odontoma is similar to the follicle covering a normal tooth.^[13]

CONCLUSION:

The presence of odontoma in association with the impacted incisor which is rotated and shows a mesiodens, as presented in our case is a rare combination. We treated the patient with conservative surgical removal of odontoma and extraction of the mesiodens and kept the patient under observation for spontaneous eruption of the unerupted central incisor.

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CONFLICT OF INTEREST- NIL

ACKNOWLEDGEMENT- NIL

ETHICAL APPROVAL- NIL

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