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Multiple compound odontome associated with unerupted permanent incisors: A case report

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Abstract

The term “odontome” by definition literally means “any tumor of odontogenic origin.” Known to be benign in nature and slow in growth, odontomes are usually asymptomatic; but may sometimes interfere with eruption of the associated teeth. We report the case of multiple compound odontomes in an 11-year old female patient which caused the failure of eruption of permanent upper left central and lateral incisors. Intra-oral radiographs (occlusal and peri-apical) revealed well-defined radiopacities diagnosed as “multiple compound odontomes”, following which surgical excision was performed.

Keywords: Odontome, hamartoma, unerupted teeth.

1. Introduction

Odontomes are considered to be hamartomatous malformations in which both the epithelial and mesenchymal cells exhibit complete differentiation to the result that functional ameloblasts and odontoblasts form enamel and dentin. Although composed chiefly of enamel and dentin that are laid down in an abnormal pattern because of lack of adequate morph differentiation, odontomes also consist of variable amounts of cementum and pulp tissue^[1, 2]. They are non-aggressive, slow-growing tumors, and like teeth, once fully calcified, they do not continue to grow further.^[3] As this lesion is composed of more than one type of tissue, it has come to be called as “composite odontome.”^[1] According to 2005 WHO classification of odontogenic tumors, two types of odontomes have been identified:

1. Compound composite odontomes, in which the enamel and dentin are laid down in a manner that the structures bear considerable anatomic resemblance to normal teeth.
2. Complex composite odontomes that are irregular masses bearing no morphologic similarity even to rudimentary teeth^[1, 4].

The compound odontome is more common as compared to complex variety. Etiology is largely unknown, but local trauma and infection have been suggested to have a role in the production of such a lesion. As suggested by Hitchin, odontomes could be inherited, or due to a mutant gene^[1]. Persistent lamina could be the hidden inherited developmental anomaly^[5]. Odontomes are the most common types of odontogenic tumors, comprising about 22 per cent of all odontogenic tumors of jaws. They are more commonly associated with the permanent dentition as compared to the primary dentition^[6]. Here we report the case of a multiple compound odontome in an 11-year old female patient.

Case Report

An 11-year old female patient reported to the department of Oral Medicine, Diagnosis and Radiology, S.M.B.T Dental College, Sangamner, with the chief complaint of missing teeth in the left upper front region of jaw (fig. 1, 2). The contralateral teeth were present and showed normal form. The patient gave no history of trauma or extraction in the region. Clinical examination revealed no facial asymmetry extra-orally. Intra-oral examination showed missing 21 and 22, and a palatal swelling measuring 1x0.5 cm in relation to the same (fig. 2). The swelling extended from the mesial aspect of 11 to the mesial aspect of 63. The overlying mucosa appeared normal. On palpation the swelling was hard in consistency. Intra-oral radiographs (peri-apical and occlusal) revealed multiple masses of radiopaque calcified tooth-like structures juxtaposed between the roots of impacted 21 and 22 (fig. 3,4). The Clark’s

techniques of radiographic examination was used to localize the calcified masses as being palatally placed with respect to 21, 22 (fig. 5). On the basis of clinical and radiographic findings, it was diagnosed as “multiple compound odontome.” Surgical excision was planned with parental consent. Surgery was performed under local anaesthesia by an oral surgeon. After giving initial incision, palatal mucoperiosteal flap was reflected (fig. 6). The layer of overlying bone was removed from palatal surface, and the calcified masses were exposed (fig. 7). The calcified tooth-like masses were removed without

disturbing the underlying tooth, and sent for histopathological examination. After hemostasis, the area was irrigated with saline solution, and the mucoperiosteal flap was sutured back in position with 3 sutures (fig. 8). The gross findings showed calcified masses resembling tooth-like denticles (fig. 9). Healing was uneventful, and on the seventh day following the surgery, sutures were removed. Post-operative radiographs taken on the seventh day confirmed the complete removal of the odontomes and no such calcified structures persisted.



Fig 1:



Fig 2:



Fig 3:



Fig 4:

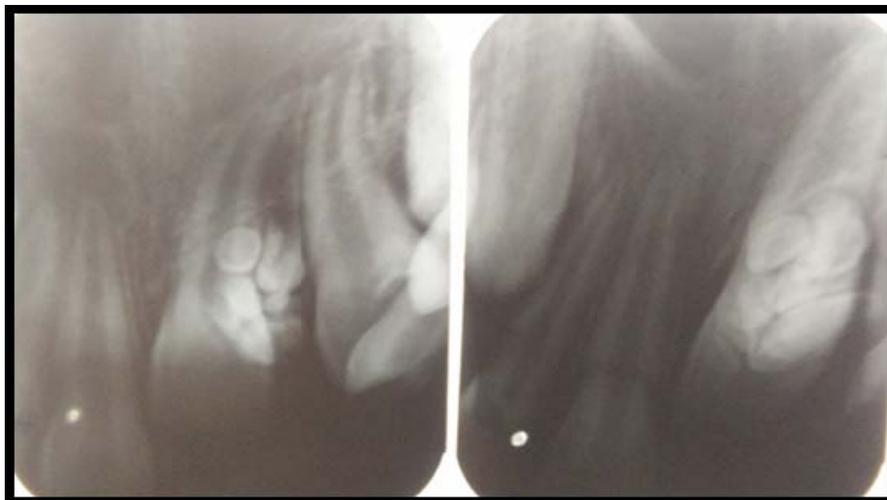


Fig 5:



Fig 6:



Fig 7:



Fig 8:



Fig 9:

Discussion

Odontomes are common odontogenic lesions that are rarely diagnosed before the second decade of life, and frequently associated with impaction or delayed eruption of permanent teeth [7]. Although these odontogenic tumors can be found anywhere in the dental arches, studies have shown that most of the odontomes occur on the right side of the jaws [8]. In our case the odontome was seen in the upper left quadrant. According to a study by Katz RW *et al*, 396 cases which were analysed showed that the diagnosis of odontome happens between the age of 11 and 15 years [9]. Our patient was aged 11 years. Many times odontomes are found associated with unerupted teeth [10, 11]. The canines, followed by upper central incisors and third molars are the teeth frequently impacted by odontomes. In our case the two incisors of the left side were impacted by the odontome. Although odontomes show no significant predilection for occurrence in either gender, males are seen to be slightly more commonly affected (59%), as compared to females (41%) [1].

The radiographic features of odontomes are usually diagnostic. Our case showed the characteristic radiographic findings as being situated between the roots of teeth, appearing as a variable number of irregular masses of calcified material resembling tooth-like structures, surrounded by a narrow radiolucent band [1].

Odontomes are treated by conservative surgical removal, and there is little probability of recurrence [12]. Kaban states that odontomes are easily enucleated, and adjacent teeth that may have been displaced by the lesion are seldom harmed by the excision, since they are usually separated from the lesion by a septum of bone [13]. Ideally, odontomes should be removed when the permanent teeth adjacent to the lesion exhibit about one half of their root development, because this ensures safety of the normal permanent teeth, and prevents interference with

their eruption. If the odontomes associated with impacted teeth are diagnosed late, after the complete root formation of the impacted tooth has taken place, then orthodontic traction may be required to guide the impacted tooth into its position [14]. In our case the root formation of the associated impacted teeth was not complete and thus the spontaneous eruption potential of the tooth persisted. Clinical examination on the seventh post-operative day revealed an erupting upper left lateral incisor. Thus the need for orthodontic traction was averted.

Conclusion

The early diagnosis and timely management of odontomes is important to prevent later craniofacial complications and other developmental problems. Clinical experience and dental literature suggest that individualized radiographic examination of any pediatric patient with clinical evidence of delayed permanent tooth eruption or tooth displacement should be performed. Literature also suggests that odontome, once enucleated, does not recur, but a careful clinical and radiographic monitoring is necessary in young children. Additionally, follow up reviews of the cases to assess the eruption of the associated impacted teeth, are indispensable to the standards of proper patient care. Early diagnosis of the odontomes allows adoption of a less complex and less expensive treatment plan, also promising better prognosis.

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