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MANAGEMENT OF IMPACTED COMPOUND COMPOSITE ODONTOME AND A PALATALLY PLACED SUPERNUMERARY TOOTH: A CASE REPORT

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ABSTRACT

Odontomas are the most common odontogenic tumors. They are usually asymptomatic and are often discovered during routine radiography. Eruption of an odontome into the oral cavity is rare. Odontomas are the most common odontogenic tumors. They are usually asymptomatic and are often discovered during routine radiography. Eruption of an odontome into the oral cavity is rare. Odontoma seems to result from budding of extra-odontogenic epithelial cells from the dental lamina. This cluster of cells forms a large mass of tissues that may be deposited in an abnormal arrangement, but consists of normal enamel, dentin, cementum and pulp. World Health Organization (WHO) classification defines a lesion as a malformation in which all the dental tissues are represented in a more orderly pattern than in the complex odontoma so that the lesion consists of many tooth-like structures. Supernumerary tooth is one of the developmental problems in children. Mesiodens is a supernumerary tooth present in the midline between the two central incisors. It usually results in oral problems such as malocclusion, food impaction, poor aesthetics, and cyst formation. The prevalence of mesiodens varies between 0.09% and 2.05% in different studies. We report an unusual case of labially placed compound composite odontome and simultaneous occurrence of a mesiodens placed palatally.

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INTRODUCTION

Odontomas are one of the most common types of odontogenic tumours (i.e. linked to tooth development) found in the oral cavity. It is a kind of dental hamartoma which constitutes normal dental tissue that has grown in an irregular way. The average age for occurrence of odontomes is 14 years. The condition is frequently associated with one or more impacted teeth but there are instances where odontomas have erupted into the oral cavity. Thus it frequently interferes with eruption of teeth. In a broad sense, it means a growth with both the epithelial and mesenchymal components exhibiting complete differentiation, and subsequently functional ameloblasts and odontoblasts form enamel and dentin. This enamel and dentin were laid down abnormally because the organization of odontogenic cells failed to reach the normal state of morph differentiation (Shafer, 1993).

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The term “odontoma” was coined by Paul Broca in 1867. Broca defined the term Odontome as the tumors which are formed due to the overgrowth or transitory of complete dental tissue (Batra *et al.*, 2003). Most of the odontomes are asymptomatic yet occasional signs and symptoms do occur. The World Health Organization categorises odontomas into two types: complex and compound odontomas (Amailuk *et al.*, 2008). Odontomas can also be classified as intraosseous and extraosseous odontomas (Vengal *et al.*, 2007). The present case report highlights an unusual case of labially placed compound composite odontome and simultaneous occurrence of a mesiodens placed palatally.

Case Report

An 11 years old male patient reported to the Department of Pedodontics and Preventive Dentistry, Kothiwal Dental College & Research Centre, Moradabad, Uttar Pradesh with the chief complaint of an extra tooth placed palatally in between upper front teeth. Extra-oral examination showed no asymmetry of face. On intra-oral examination it was found

that a mesiodens was present in relation to #11 and #21. (Fig. 1a, 1b). There was no associated swelling or inflammation seen. An intra-oral periapical radiograph was taken. The radiographic findings showed that there was not only a palatally placed mesiodens but as well as a buccally placed impacted tooth, (Fig. 2). An adequate amount of anaesthesia was given with 1:80,000 conc. of adrenaline concentration.



Fig. 1a. Pre-operative view (buccal aspect)



Fig. 1b. Pre-operative view (palatal aspect)



Fig. 2. IOPAR

Palatally placed mesiodens was extracted followed by a pressure pack at the site (Fig.3).



Fig. 3. Mesiodens extracted

Thenafter, crevicular incisions were given (Fig.4) followed by vertical releasing incisions.

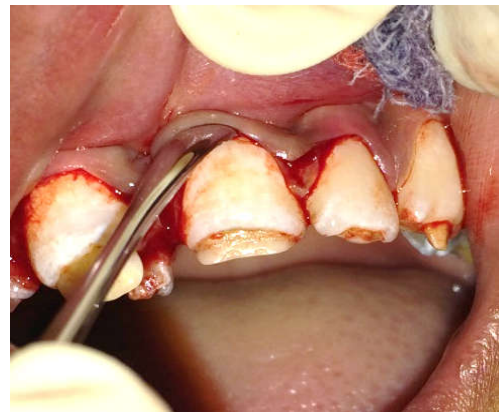


Fig. 4. Incisions given

A full thickness mucoperiosteal flap was raised on the facial aspect (Fig.5).

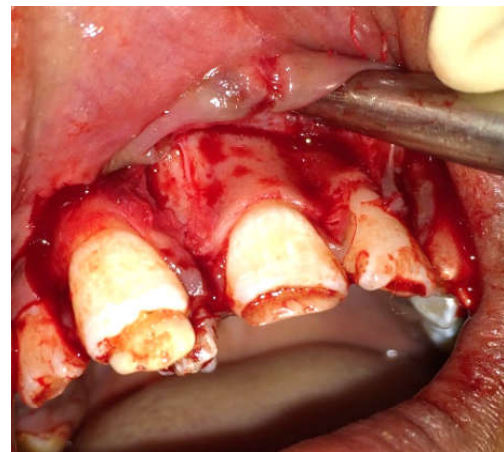


Fig. 5. Mucoperiosteal flap raised

The impacted tooth was extracted and sent for histopathological investigation (Fig. 6).



Fig. 6. Extracted teeth

The area was thoroughly curetted (Fig.7) with copious saline irrigation. Hemostasis was obtained by applying pressure pack. Then the flap was repositioned back and sutures were given. (Fig.8) Patient was prescribed antibiotics Amoxycillin 250mg thrice daily and analgesics Ibuprofen 200mg twice daily for five days.

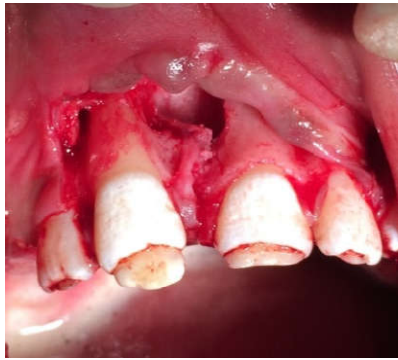


Fig. 7. Area curetted



Fig. 8. Sutures given

He was also advised soft diet for five days. He was recalled after 1 week for suture removal and post operative healing. After one week the healing was uneventful without any post-operative complication (Fig.9a,b).



Fig. 9a. Palatal view postoperatively



Fig. 9b. Buccal view postoperatively

The excised tooth like calcified mass was sent for histopathological analysis. Ground section of the tooth like

structure revealed pulpal space surrounded by dentine. The radicular components showing dentine with dentinal tubules was surrounded by cementum. (Fig.10) The reports of histopathological analysis suggested it was a case of compound composite odontome.

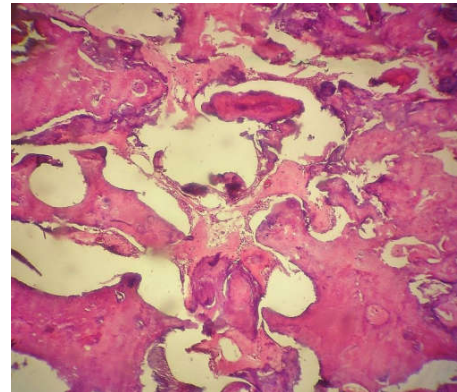


Fig. 10. Histopathological appearance (H&E stainsX40)

DISCUSSION

Odontomas (about 22%) are the most common type of odontogenic tumor (Amado *et al.*, 2003; Bhaskar, 1986). There are some authors who prefer to refer to it as hamartoma, not a true tumor (Cohen, 2004) In 1914, Gabell, James, and Payne classified odontome according on the basis of their developmental origin into epithelial, composite (epithelial and mesodermal), and connective tissue. According to WHO classification odontomes can be divided into three groups (Kramer *et al.*, 1992). Complex odontome: When the calcified dental tissues are simply arranged in an irregular mass but have no morphologic similarity to rudimentary teeth. Compound odontome: Composed completely of odontogenic tissues in an orderly fashion resulting into many teeth-like structures, but without morphologic resemblance to natural teeth. Ameloblastic fibro-odontome: Composed of varying amounts of calcified dental tissue and dental papilla-like tissue, that resembles an ameloblastic fibroma. The ameloblastic fibro-odontome is considered as an immature precursor of complex odontome. The classification of supernumerary teeth is usually based on their morphology together with their location in the maxillary and mandibular arches. According to the shape and size, two subclasses are considered in the classification of mesiodens; namely, eumorphic and dysmorphic.

The eumorphic subclass is usually similar to a normal-sized central incisor, whereas the dysmorphic teeth have different shapes and sizes and are categorized into conical, tuberculate, supplemental and odontomes. Due to which the supernumerary teeth might show variation from a normal tooth to a dysmorphic mass (Vengal *et al.*, 2007). The treatment planning for such cases is based on their type and position in the dental arches. Immediate removal of mesiodens is usually indicated in the following situations; delayed eruption, displacement of the adjacent tooth, interference with orthodontic appliances, pathology, or if the supernumerary tooth has erupted spontaneously. Munns (1981) stated that the earlier the mesiodens is extracted, better is the prognosis. There are two methods for extraction of mesiodens; early extraction prior to root formation of the permanent incisors and late extraction after root formation of the permanent

incisors (Singh *et al.*, 2005). There are many authors who advocate the extraction of mesiodens in the early mixed dentition in order to facilitate spontaneous eruption and alignment of the incisors (Tay, 1984; Solares, 1990; Witsenburg, 1981).

Conclusion

Mesiodens as the most prevalent form of supernumerary teeth in permanent dentition is not a rare condition. Evidence regarding etiology of mesiodens indicates that genetic susceptibility together with environmental factors might increase the activity of dental lamina leading to formation of the extra tooth/teeth. Extraction of mesiodens in the early mixed dentition helps spontaneous alignment of the adjacent teeth; however, symptomless cases could be left untreated along with regular check up.

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