

Compound Composite Odontoma in A 9 Year Old Boy: A Rare Case Report

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ABSTRACT

Background: Odontomas are odontogenic benign tumors composed of dental tissue. Majority of these lesions are asymptomatic and are very difficult to detect and are often detected on routine radiographs. They can be thought of as “tooth hamartomas” with the lesion consisting of various tooth components. They are divided histologically into complex odontomas and compound odontomas. Compound odontomas generally appear as small, solitary, multiple radiopaque lesions on a radiographic examination. Compound odontomas are commonly seen in the incisor canine region of maxilla and complex odontomas are frequently present in premolar and molar regions of both jaws. In this case compound odontoma is present in left anterior maxillary region blocking the eruption of canine and causing displacement of left maxillary lateral incisor in a 9 year old patient. The surgical removal of the lesion was performed to allow eruption of left maxillary permanent canine in the present case. The size of denticles removed varies from 3mm-5mm.

Keywords: Compound composite odontoma, surgical removal, denticles.

INTRODUCTION

Odontomas are mixed odontogenic tumors in which both the epithelial and mesenchymal components undergo functional differentiation and form enamel and dentin (Budnick, 1976; Shafer, 1993). They are hamartomatous lesions rather than true neoplasms (Budnick, 1976; Shafer, 1993). World health organization (WHO) classification defines this lesion as “a malformation, in which all the dental tissues are represented, individual tissues being mainly well formed but occurring in more or less disorderly pattern”. Odontomas have been classified as benign odontogenic tumors and are subdivided into complex or compound odontomas morphologically.¹

Odontomas generally appear as small, solitary or multiple radio-opaque lesions found on

routine radiographic examination.² Odontoma may cause disturbances in the eruption of teeth such as impaction, delayed eruption or retention of primary teeth.³

CASE REPORT

A nine year old boy reported to the Department of Pedodontics and Preventive dentistry, K.M.C.T Dental College, Manassery, Mukkam, Calicut, Kerala with a chief complaint of spacing between permanent maxillary left central and left lateral incisor. This space was absent during primary dentition period but was evident with eruption of permanent maxillary lateral incisor. There was premature loss of left primary maxillary canine and lack of space for eruption of maxillary left permanent canine. The medical and family

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history was noncontributory. There were no other significant findings.



Fig 1: Pre operative photograph



Fig 2: Pre operative radiograph.

An intra-oral periapical radiograph revealed multiple calcified structures of different shapes and sizes in between the middle third portion of the roots of the permanent maxillary left central and lateral incisor. They were surrounded by a well-circumscribed radiolucent zone. The permanent maxillary left lateral incisor was displaced distally and there was no space for eruption of the left permanent maxillary canine. Upon the clinical and radiographic findings, a provisional diagnosis of a compound composite odontoma was made. It was decided to surgically remove the odontomas.

Under local anesthesia, a labial mucoperiosteal flap was elevated; the thin bone overlying the odontoma was removed. Three

denticles were enucleated with their fibrous capsule. The size of the denticles varied from 4 mm to 5 mm. The flap was closed and healing was uneventful.

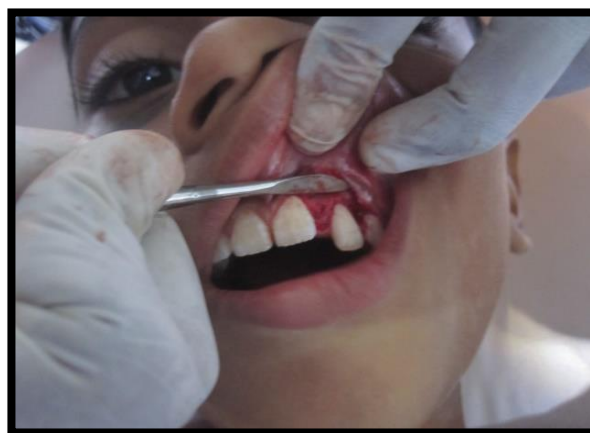


Fig 3: Mucoperiosteal flap being raised.



Fig 4: Surgical site after removal of odontomas

A check radiograph was taken, which revealed the presence of even more denticles in the same area after one week. So another appointment was given for surgical removal of remaining denticles. The same procedures were carried out and 5 more denticles were removed of size varying from 4mm-6mm. The flap was closed and zinc oxide eugenol pack was given to patient for uneventful healing. By correlating the clinical, radiological and histopathological findings, a definite diagnosis of compound composite odontoma was made. It was arranged for the patient to follow-up the management of distally drifted maxillary permanent lateral incisor and unerupted canine.



Fig 5a and b: About 9 denticles were removed. Some presented as tooth-like structures whereas others were calcified tissues with no resemblance to teeth.



Fig 6: Check x ray after first intervention.



Fig 7: Post surgical x ray.



Fig 8: Mucoperiosteal flap sutured back in place

DISCUSSION

The term “odontoma” was coined by Paul Broca in 1867. “Odontome” by definition alone refers to any tumor of odontogenic origin. Odontomas are the most common odontogenic tumors and are considered to be hamartomas rather than neoplasms and are composed of tissues native to teeth (Brenda L.Nelson et al. 2010).

The absolute incidence of odontogenic tumors varies from 0.002% to 0.1%⁴ out of which odontomas constitute about 22% of all odontogenic tumors of the jaws.⁵ Few retrospective studies carried out in India have reported an incidence of 5.3%-11.6%.⁶⁻⁸

The etiology of the odontoma is unknown.⁹ It has been associated with various pathological conditions, like local trauma, inflammatory and/or infectious processes, mature ameloblasts, cell rests of serres (dental lamina remnants) or hereditary anomalies (Gardner's syndrome and Hermann's syndrome), odontoblastic hyperactivity, and

alterations in the genetic component responsible for controlling dental development.¹⁰

Compound odontomas are usually located in the anterior region of the maxilla, over the crowns of erupting teeth, or between the roots of erupted teeth¹¹. Here the patient exhibited to have the lesion in the maxillary anterior region¹². These lesions are usually unilocular and contain multiple radiopaque, miniature tooth-like structures known as denticles. Complex odontomas in turn are found in the posterior mandibular region, over impacted teeth, and can reach several centimeters in size.¹³

Radiologically, these lesions manifest as a radiopaque solid mass with nodular elements occasionally, and surrounded by a fine radio transparent zone.¹⁴ Clinically, these lesions often associated to alterations in permanent or temporary tooth eruption¹⁰. The treatment of choice is surgical removal of the odontoma, followed by histological analysis. Clinical experience and the dental literature illustrates that an individualized radiographic examination of any pediatric patient that presents clinical evidence of delayed permanent tooth eruption or temporary tooth displacement with or without a history of previous dental trauma, should be performed with at most recent diagnostic aids^{15,16}

CONCLUSION

The detection of odontoma is mostly an accidental radiological finding, hence the need for routine radiographic analysis should be emphasized if there spacing between the tooth or if the deciduous tooth remains beyond chronological age. Early diagnosis of odontoma is essential in order to prevent later complications, such as impaction or failure of eruption of teeth, displacement and drifting of teeth and also makes the treatment procedure simple and efficient.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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