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A case of an erupted compound odontome

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Abstract

The Tumors in which odontogenic differentiation is fully expressed are the odontomas. Odontomes, according to the many researchers, are considered to be hamartoma to us malformation rather than true neoplasm and are generally asymptomatic. It is most commonly associated with the eruption of the teeth. They are usually discovered on routine radiographic examination. In exceptional cases, the odontoma erupts in to the mouth. The present paper reports a case of an erupted compound odontoma in a 9-year-old male patient.

Keywords: compound Odontome, Odontome, Trauma.

Introduction

Odontomas are considered as the most common type of odontogenic Tumors of the jaws resulting from the growth of completely differentiated epithelial and mesenchymal cells. Odontomas are characterized by their slow growth and nonaggressive behaviour. [1&2]

The term 'odontoma' was coined by Paul Broca in 1867. According to the Paul Broca's definition odontoma is a tumour of complete dental tissue.[3] Although the etiology of odontoma is still unclear, Local traumas or infections are considered as one of the causes of odontomas. [1&4]

Most of the odontogenic Tumors are asymptomatic. But if present, the commonly associated symptoms comprise of unerupted or impacted teeth, retained deciduous teeth, swelling, and evidence of infection. [2]

The most common location for impacted teeth associated with odontogenic tumor is the anterior maxilla region.

Management consists of excision of the tumor. Prognosis after treatment is very favourable, with minimal relapse. [1&5]

This case report presents an unusual case of an erupted compound odontoma in the anterior maxilla is presented with clinical, radiographic, and microscopic findings.

Case report

A 9-year-old male patient reported to the Department of Pediatric and Preventive Dentistry with a chief complaint of irregularly placed upper front teeth. Medical history was non-contributory. The patient gave a history of being hit by the father on the upper lip few years back. Complete extraoral and intraoral examination of patient was carried out.

Extra orally, facial symmetry was present with no signs of swelling on his face. Intraorally, missing 11 was noticed with presence of a cluster 7-8 of dental tissue like calcified lesion in a circular form with an irregular surface and giving the appearance of multicusped tooth. (FIGURE 1A, 1B AND 1C) The lesion was placed more towards palatal side between 21 and 12. Lesions was hard in consistency, tooth-coloured and measured about 10-12 mm in diameter. It had a calcified appearance and an irregular surface which was indicative of small multiple teeth like structures.

There was no inflammation, pain, infection, erythema, or ulceration of the tongue and adjacent tissues. On palpation, these multiple teeth-like structures were asymptomatic and were not mobile.

Patient was advised with a set of Intra Oral Periapical Radiographs (IOPAs) and Digital Volumetric Tomography (DVT) to assess the precise location and extent of the lesion, as well as its relations to the surrounding anatomical structures. Both IOPA and DVT showed presence of two Multiple small teeth-like radiopaque structures upper anterior maxillary region and with presence of impacted 11.

(FIGURE 2A AND 2B) They were well defined with smooth borders and contents of the lesions were radiopaque which were appearing like number of denticles or tooth-like structures.

These radiopaque toothlike structures were present between 12 on the left side and 21 on the right side with some displacement of 12 and complete impaction of 11. Axial view of DVT showed that erupted lesion was present below and labially to the impacted 11 and unerupted lesion was on the palatal side of 11.

A provisional Diagnosis of Compound Odontome was made based upon the clinical and radiographic findings. And after the routine blood investigations the surgical removal of both the lesions under local anaesthesia was decided.

Patient was prepared under local anaesthesia. A crevicular incision was made on the palatal aspect of extending from 12 to the 22 with the vertical relieving incisions. First, palatal full thickness mucoperiosteal flap was elevated (FIGURE 3) and removal of erupted lesion was done. Then, as there was no access to the unerupted lesion, labial full thickness flap was elevated and removal of the impacted lesion was done. (FIGURE 4) The size of denticles varied from 6 mm to 12 mm. Evidence of concrescence was seen with both the denticles.

The bigger or erupted denticle showed presence of 12 conical cusps like structures and smaller impacted denticle showed presence of 4 conical cusps like structures. (FIGURE 5)

After the removal of fused denticles, position of 11 was determined. After thorough irrigation with saline combined with povidine-iodine solution of the surgical site, the flap was repositioned and sutured. Healing was uneventful and sutures were removed on the seventh post-operative day.

The tissue was sent for histopathological evaluation. Macroscopically, the specimen / lesion consisted of conical tooth like structures attached to each other arranged in irregular pattern. (FIGURE 6)

The tissue was processed and stained with hematoxylin and eosin stain. The hematoxylin and eosin section revealed presence of mature tubular dentin. Thus, histopathological findings were compatible with compound odontoma.

Patient was asked to report back after 1 month but he did not turn up so further follow up of the lesion could not be done.

Discussion

Odontomas are nonaggressive, hamartomatous developmental malformations or lesions of odontogenic origin. The appearance of odontomas is as small, solitary, or multiple radiopaque lesions found on routine radiographic examinations. [3]

In the literature, the incidence of odontomas has been reported to range from 20% to 67% with the incidence of compound odontome ranges between 9% and 37%. Of all odontogenic neoplasms.[4]

Compound odontomas have twice rate of occurrence as compared to the complex odontomas [2] and frequently occur in the maxillary incisor-canine region.

Though the exact etiology of the odontogenic tumor is unknown, it is considered that it arises from an excessive proliferation of dental lamina or its remnants [6] or may form as a result of local conditioned exuberant proliferation of dental lamina or its remnants referred as scizodontia. [7]

Radiographically, odontoma appears as an irregular radiopacity or denticles surrounded by a radiolucency with or without a bony expansion. However, Compound odontoma when compared with complex odontoma radiographically shows a well-organized malformed tooth or multiple toothlike structure. [8] in the abovementioned case, two multicusped tooth like structures were seen in the radiographs.

The case described in this report was initially diagnosed as compound odontoma based on the radiographic findings. This diagnosis was later confirmed by histopathologic examination of the lesion which showed presence of dentinal tubules. Also, the lesion was found on the anterior region of the maxilla, which, according to many researchers, is the most common location.

In this case, eruption of right maxillary incisors was hampered and adjacent teeth were displaced.

Early diagnosis of odontomas will helps us to [9]

(1) Adopt a less complex and less expensive treatment,

(2) Ensure better prognosis,

(3) Avoid relapse of the lesion,

(4) Avoid displacement or devitalisation of adjacent tooth.

Ideally, odontomas 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. Kaban states that odontomas are easily enucleated and adjacent teeth that may have been displaced by the lesion are seldom harmed by surgical excision because they are usually separated by a septum of bone. [10&11]

Conclusion

From above case report, we conclude that trauma to the developing dentition can lead to the development of odontogenic lesion if not taken care at the initial stages of life. For the above-mentioned case, surgical removal of odontoma was the treatment of choice.

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Figures

Figure 1a, 1b and 1c – shows cluster 7-8 of dental tissue like calcified lesion in a circular form.

Figure 1a:

Figure 1b:

Figure 1c:

Figure 2a: intraoral periapical radiographs showing presence of two multiple small teeth-like radiopaque structures upper anterior maxillary region.

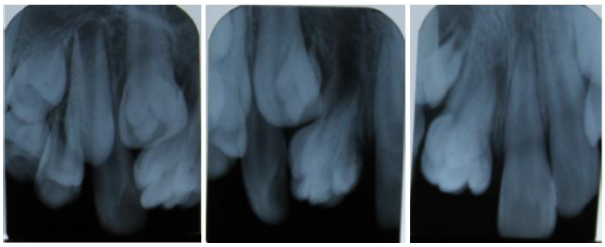

Figure 2b: digital volumetric tomography showing impacted maxillary right central incisor and position of unerupted lesion.

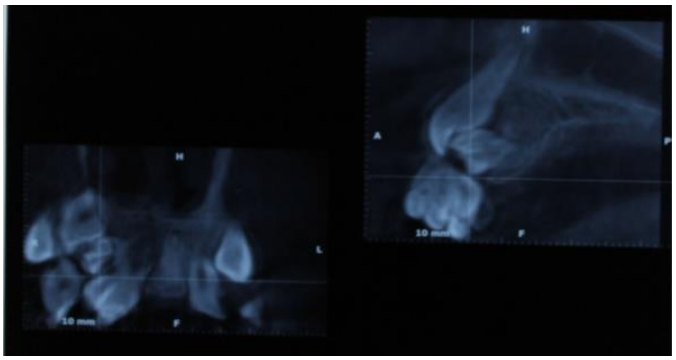

Figure 3: elevated palatal full thickness mucoperiosteal flap.

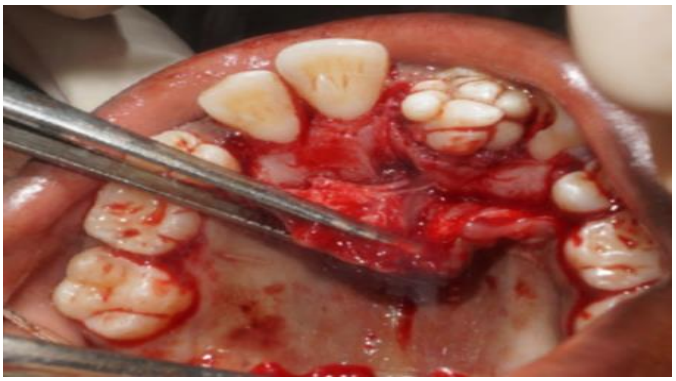

Figure 4: exposure of unerupted lesion by reflecting labial full thickness mucoperiosteal flap

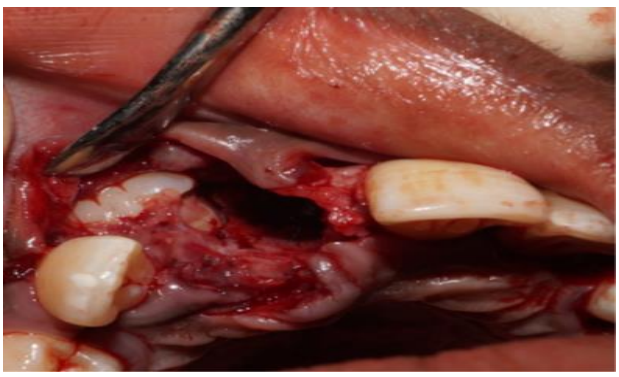

Figure 5: gross specimen showing surgically removed teeth like structures.

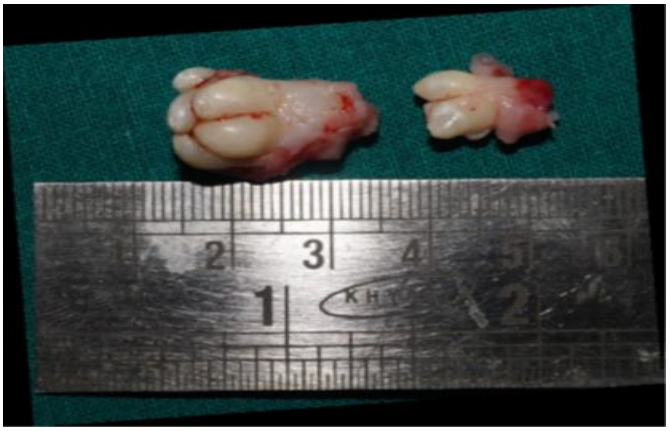

Figure 6: hematoxylin and eosin section showing presence of dentinal tubules.