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Erupting Complex Odontoma of Maxilla with An Impacted Tooth - A Case Report

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Abstract

Introduction

The term ''odontoma'' was coined by Paul Broca in 1867, for ''tumors formed by the overgrowth of transitory or complete dental tissues**.** Odontomas are hamartomas of odontogenic epithelium and ectomesnchyme and are considered to be one of the common odontogenic benign tumor of the jaws in an interval of 35%-76%, characterized by their non-aggressive character, with most presenting in the first 2 decades of life without sex predilection. According to the World Health Organization, odontomas are considered mixed tumors due to their origin from epithelial and ectomesenchymal cells and are classified as compound and complex.

In Compound odontomas the enamel and dentin are laid down in such a fashion that the structure bears a considerable anatomical resemblance to that of normal tooth. Complex odontomas consists of calcified dental tissue are simply arranged in a irregular mass bearing no morphological similarity even to rudimentary tooth. Radiographic features are considered diagnostic, with tooth-shaped structure surrounded by a radiolucent zone in compound odontomas versus a radiodense mass with a radiolucent zone seen in complex odontome.

Simple excision is curative without risk of recurrence.

Keywords: Odontoma, Dental tissues, Enamel, Tumors

Case Report

A 27 year old female patient reported our Department of Oral and Maxillofacial Surgery, Hasanamba Dental college and Hospital with the chief complaint of pain and swelling in her right upper back tooth region since 20 days.

Patient gave history of pain in her right upper posterior region since 20days, which was sudden in onset, moderate in intensity, non-continuous in nature and non-radiating, pain aggravates on having food and relieved on taking medication.

There was no relevant medical history

She was moderately built, well-nourished and well oriented with time, place and person and her vitals were in normal limits.

Our further examination extra orally no gross facial abnormality was noted.

Intraorally, on inspection interincisal mouth opening was 40mm and eruption of bony mass noted from distal aspect of 16 tooth till the right side maxillary tuberosity. vestibular obliteration noted in the same region.

Erythematous and ulcerative gingiva noted distal to 16. On palpation, severe tenderness was noted in relation to 15,16 and distal to 16 regions.

Based on our clinical examination we came to a provisional diagnosis of hard swelling on upper right posterior back tooth region which may be odontoma, ameloblastic fibroma or ameloblastic fibro odontoma.

Routine blood investigation and orthopantomograph done.

OPG revealed a thick radio opaque mass noted distal to 16 and of approximately 1*1 cm in size, deeply impacted 17 noted superior to the radio opaque mass and maxillary sinus floor elevation noted and there were unerupted 28,38 and 48 teeth noted. (Figure 6).

Based on radiographic findings we came to a diagnosis of complex odontome of right-side maxilla with an impacted 17 tooth.

After obtaining prior consent, complete examination of systemic conditions was done and in absence of any systemic conditions, the surgical procedure was done. The patient was intubated under general anesthesia and after achieving adequate vasoconstriction using 2% lidocaine with 1:80,000 adrenaline, crevicular incision was placed from 12 to 17 region and anterior releasing incision given mesial to 12 after that full thickness mucoperiosteal flap reflected and encapsulated odontome mass exposed. (Figure 1). Exposed odontome mass scored and removed into pieces (Figure 2, 3) and deeply impacted 17 tooth removed (Figure 4) , sinus membrane not perforated while removing deep seated 17 tooth and remained intact. As odontome not involved 16 tooth,16 is preserved and fresh bone bleeding noted at margins of the cavity followed by irrigation with betadine and saline, hemostasis achieved. Platelet rich fibrin (PRF) placed into the bony cavity after that the incision closed with 3-0 vicryl resorbable sutures. (Figure 5). Patient was extubated uneventfully. The excised specimen was sent for histopathological examination.

Histopathological examination revealed, soft tissue fragments with mixed inflammatory cell infiltrates, proliferating blood vessels, congested blood vessels with tiny fragment of mineralized dentin. And those features were consistent with odontoma with inflammation of Adjacent Tissue-Right Maxilla.

No post-operative complications were seen. Patient was kept under antibiotic and analgesic course for 5 days.

Postoperative follow-up done for 6 months and postoperative OPG (Figure 7) showed no signs of recurrence.

Discussion

Odontoma is the most commonly found odontogenic tumor (35- 76%). Odontoma is a benign tumor originating from an alteration of differentiated mesenchymal and epithelial odontogenic cells; it has the capacity of forming enamel, dentin and cement.

They are classified into compound and complex, in a 2:1 relationship, the difference between both being dental tissue organization.

In 1946, Thoma and Goldman gave a classification which is as follows.

- Geminated composite odontomes: Two or more, more or less well-developed teeth fused together.
- Compound composite odontomes: Made up of more or less rudimentary teeth.
- Complex composite odontomes: Calcified structure bearing no great resemblance to the normal anatomical arrangement of dental tissues.
- Dilated odontomes: The crown or root part of tooth shows marked enlargement.
- Cystic odontomes: An odontome that is normally encapsulated by fibrous connective tissue in a cyst or in the wall of a cyst.

Complex odontomas tend to appear in the posterior part of the jaws and consist of a disorganized mass of hard and soft dental tissues with no morphologic resemblance to a tooth. There have also been complex odontoma cases involving the maxillary sinus reported in the literature.

The pathogenesis is not clear, but trauma during primary dentition, heredity, and genetic mutations are accepted possible etiologic factors. Odontomas can also manifest as part of some syndromes: Gardner syndrome, Hermann syndrome, familial colonic adenomatosis, and basal cell nevus syndrome.

Clinically, 3 types of odontomas are recognized in the literature: intraosseous, extraosseous (soft tissue), and erupted.

The tumor is asymptomatic, develops very slowly and usually remains small but occasionally may grow to a size producing bony expansion. These tumors are frequently discovered on routine radiographic examination.

The differential diagnosis of complex odontoma include cementoblastoma, osteoid osteoma, and fibro-osseous lesions, such as cemento-ossifying fibroma.

Radiographic appearance of complex odontoma is determined by developmental stage and degree of mineralization.

A number of different techniques have been proposed for osteotomy: 27–31 ultrasonic, CO2, high-speed rotary handpiece, piezosurgery, and the erbium laser.

Morning reported that 75% of impacted teeth related to odontomas erupt after removal of the odontoma, indicating that careful evaluation should be made before extracting such an impacted tooth. However, impacted teeth are frequently reported to be removed together with odontomas.

Conclusion

Odontoma represents a hamartomatous malformation rather than a neoplasm, It is often a painless growth with no symptoms, it may cause obstruction to erupting tooth resulting in impacted tooth .pain may be experienced if an odontoma is infected ,some odontomes may erupt into the oral cavity, like in our case. Treatment is mandatory once it becomes symptomatic. surgical enucleation of odontome along with impacted tooth removal if it is not in the path of normal eruption. Prognosis is generally favorable, with scarce relapse index; relapse rate increases when enucleation is conducted during the first calcification stage.

Figure 1:

Figure 2:

Figure 3:

Figure 4:

Figure 5:

Figure 6:

Figure 7:

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