

Complex odontoma: report of two unusual cases

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Abstract

Odontomas are the most common benign, slow-growing and nonaggressive odontogenic tumors of the jaws. They are usually clinically asymptomatic and are diagnosed on routine radiological examination in the second decade of life. The eruption and infection of odontomas are uncommon and very few cases are reported in the literature. This paper reports two cases of complex odontomas with such unusual features.

Keywords: odontoma, erupted odontoma, odontogenic tumors.

Introduction

The term odontoma was first coined by Broca in 1866, who defined it as a tumor formed by overgrowth of complete dental tissue¹. They are composed of enamel, dentin, cementum and occasionally pulp tissue². The exact etiology of odontomas is uncertain, different factors such as local trauma, infection, growth pressure, hereditary and developmental influences may be implicated³.

According to the 2005 World Health Organization (WHO) classification of odontogenic tumors, there are two types of odontomas, composite and complex odontomas⁴. Odontomas have also been classified as central odontoma (occur inside the bone), peripheral odontoma (occur in the soft tissue covering the tooth-bearing portions of the jaws, which tends to exfoliate) and erupted odontoma⁵. Though odontomas are common, eruption into the oral cavity and getting infected are exceptionally rare. Two cases of complex odontomas exhibiting unusual features are reported in this paper.

Clinical Cases

Case 1

A 25-year-old apparently healthy female was referred to our Department of Oral Medicine and Radiology with a complaint of a slow-growing painless mass in the left side of maxilla with 8 months of evolution. Intraoral examination revealed a yellowish white mass on the alveolar ridge distal to left maxillary first premolar (Figure 1). The mass was non-tender and hard in consistency. All left maxillary molars were absent and expansion of the buccal cortex was observed in the region of the left first and second molars. Orthopantomography showed the presence of a radiopaque lesion distal to the maxillary left premolar above the alveolar bone level, measuring about 50 mm. An impacted molar was noted inside the lesion (Figure 2).

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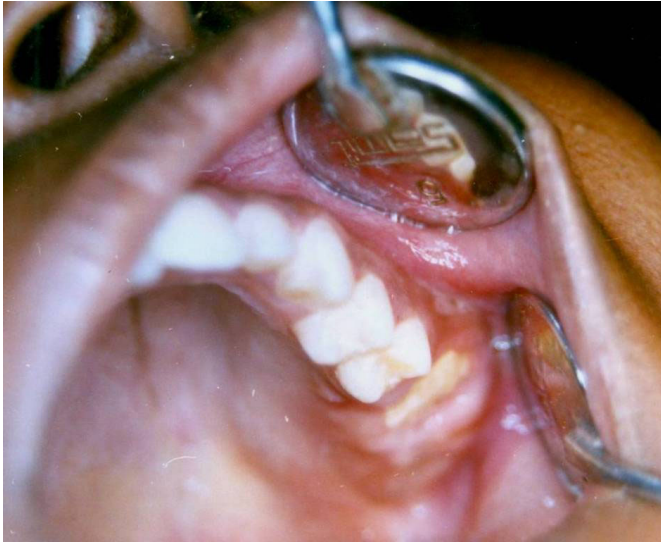


Fig. 1. Clinical photograph showing the odontoma erupting in the oral cavity.

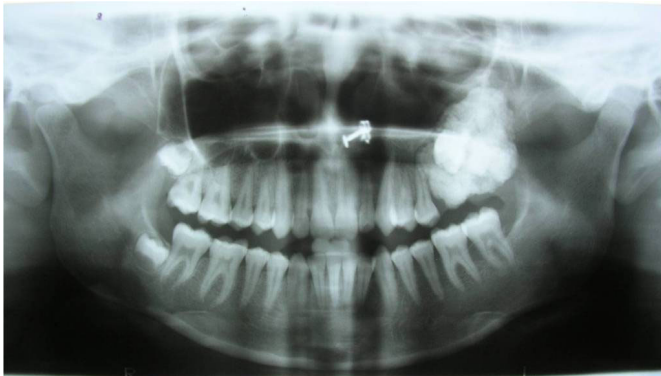


Fig. 2. Panoramic radiograph showing radiopaque mass distal to maxillary second premolar.

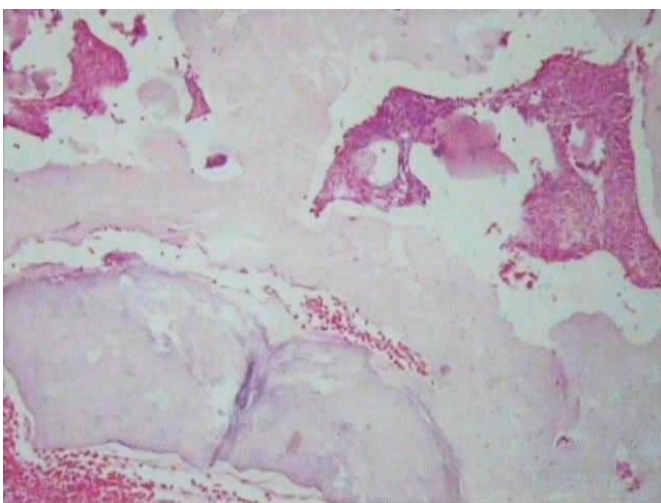


Fig. 3. Photomicrograph showing disorganized mass of dentin, cementum and pulp (Decalcified HE; 20x magnification).

On the basis of clinical and radiological findings, a diagnosis of erupting complex odontoma was established. The lesion was excised surgically under general anesthesia and sent for histopathological examination.

The specimen was decalcified and processed in the usual manner. The paraffin embedded, hematoxylin and eosin stained, decalcified section of the hard tissue specimen revealed microscopically the presence of disorderly arranged mature hard tissues, the dentin and cementum and soft tissue pulp. The pulp tissue was surrounded by disordered dentin and mass of cementum. Clear empty areas representing enamel lost during decalcification were present. These disorganized areas of dentin, cementum and pulp tissue with empty spaces representing enamel confirmed the diagnosis of complex odontoma (Figure 3).

Case 2

A 22-year-old male patient was referred to us with a complaint of swelling on the right mandibular body with 1 year of evolution and recurrent pus discharge from the same site since 6 months. There was associated dull aching, localized intermittent pain. Extraorally, a solitary fluctuant swelling near the angle of the mandible along with a healed sinus tract was noted (Figure 4).



Fig. 4. Diffuse extraoral swelling with sinus formation.

Intraoral examination revealed absence of all right mandibular molars. A panoramic radiograph showed a homogeneous radiopaque mass distal to the tilted mandibular second premolar, overlying the disto-inferiorly displaced crown of the mandibular right first molar. The primary mandibular right second molar was displaced inferiorly near to the lower border of mandible. There was no evidence of second and third molars. A uniform well-defined radiolucent halo was seen surrounding the radiopacity except in the coronal surface. The size of the lesion was approximately 40 mm (Figure 5). Based on the clinical and radiological findings, the lesion was tentatively diagnosed as infected complex odontoma.

The mass was excised surgically along with the impacted



Fig. 5. Orthopantomograph showing odontoma displacing permanent mandibular first molar and primary second molar.

teeth under general anesthesia via intraoral approach with pre and post operative antibiotic and analgesic coverage (amoxicillin 500 mg and clavulanic acid 125 mg, three times a day for 7 days along with diclofenac sodium 50 mg, three times a day for 5 days).

Histopathological examination of the decalcified hard tissue mass revealed an ill-organized structure of dentin, cementum and pulp tissue. Dentin and cementum were present in relatively larger quantities and formed the bulk of the tumor; enamel matrix and pulp were present in smaller quantities. Spherical basophilic masses representing cementum were seen scattered in the decalcified section and the dentin was evident in the form of osteodentin or dysplastic dentin (Figure 6).

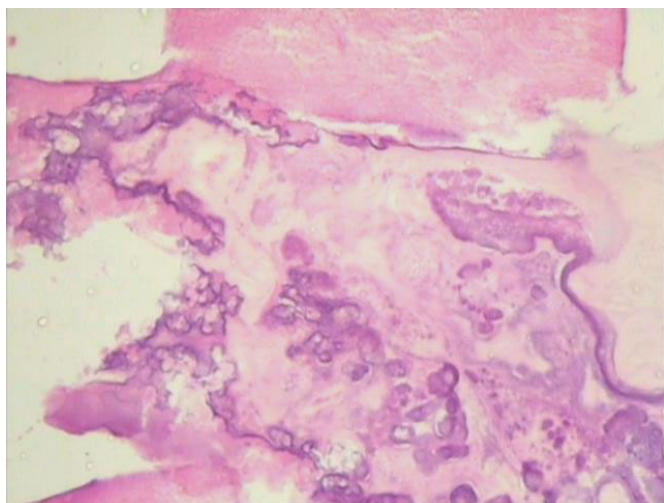


Fig. 6. Disordered arrangement of dentin, cementum and pulp. (Decalcified HE; 20x magnification).

Discussion

Odontomas are considered as hamartomas of aborted tooth formation rather than true neoplasms⁶. According to the histopathological perspective, odontomas can be grouped as: (a) complex odontomas, in which the dental tissues are well formed but exhibit a more or less disorderly arrangement and (b) composite odontomas, in which the dental tissues are normal, but their size and conformation are altered giving rise to multiple small tooth-like structures called denticles^{4,7}.

The complex odontomas are usually located in the posterior mandible, while composite odontomas are more often found in the anterior maxilla¹. There have been isolated reports of odontomas in the maxillary sinus⁸. An infrequent situation is when the odontoma has erupted, i.e., when it becomes exposed through of the soft tissues. Rumel et al. in 1980 described the first case of erupted odontoma⁹. Since then only 20 cases were reported in the literature¹⁰. In general, most of these lesions are diagnosed in patients of less than 40 years of age. Complex odontomas are less common in comparison with composite variety in the ratio 1:2².

Most odontomas are asymptomatic and literature reports only few cases of swelling, delayed eruption and in severe cases, infection or lymphadenopathy^{11,12}. Ferrer et al.¹³ reported a case of a young female with recurrent infection associated with erupted odontoma in the second quadrant. Odontoma was surgically resected along with maxillary left second molar after administration of broad spectrum antibiotics and anti-inflammatory drugs¹³. Similar features were found in case two and the patient responded very well to broad spectrum antibiotics. The radiographic characteristics of odontomas always validate the diagnosis. The lesion consists of well-defined radiopacity surrounded by a radiolucent halo, which represents an enlarged cystic follicle. In composite odontoma are seen multiple teeth-like structures of varying size and shape.

Complex odontomas are seen as irregular radiodense masses with no resemblance to dental structures. Three different development stages can be radiographically identified depending on the degree of odontoma calcification. In the first stage the lesion appears radiolucent due to the lack of calcification; the intermediate stage is characterized by partial calcification; and in the final stage the odontoma appears radiopaque surrounded by a radiolucent halo². Since odontomas are well capsulated lesions and have less chances of recurrence, the management comprises of a conservative surgical excision⁶.

Histologically, odontomas comprise varying amount of enamel, pulp tissue, enamel organ and cementum. The connective tissue capsule is similar to that of dental follicle. Ghost cells are often seen along with spherical dystrophic calcification, enamel concretions and sheets of dysplastic dentin¹.

In conclusion, since odontomas represent a large proportion of jaw tumors, adequate knowledge of their characteristics is necessary for establishment of proper diagnosis and management. In this paper, two cases of complex odontomas with unusual features were presented.

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