

Compound odontoma in the anterior maxilla

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SUMMARY Odontomas are commonly reported in the dental literature, as they arise from odontogenic epithelium referred to as a mixed odontogenic tumor. It is considered to be hamartomas rather than the tumor, characterized by an abnormal calcified mass of dental tissues like enamel, dentin, pulp, and cementum. World Health Organization (WHO) classified odontoma into two types, compound and complex types based on radiological features. The exact etiology is unknown, but based on the literature postulated causes included local trauma, infection, and genetic mutations. Clinically represented as asymptomatic swelling and pain secondary to infection. Here, we report a case of compound odontoma in the anterior maxilla in 20 years female patient.

Key words: compound odontoma, hamartoma, odontogenic tumor

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INTRODUCTION

Background

Odontoma is a developmental anomaly and considered to be hamartomas rather than the tumor, characterized by an abnormal calcified mass of dental tissues like enamel, dentin, pulp, and cementum. It is the most common mixed odontogenic tumor occurring in the oral cavity, resulting in the progression of completely differentiated epithelial and mesenchymal cells, which appear normal or defect in structure [1, 2].

Odontoma term is used to denote lesions that contain all the dental tissues such as enamel, dentin, pulp, and cementum [3]. Based on the radiographical features, World Health Organization (WHO) classified odontoma into two types, compound and complex types [4]. Compound odontomas are well-organized calcified dental tissues and appear like well-formed tooth structure whereas complex odontoma is unremarkable masses of dental tissues [3, 4].

Odontomas most commonly found in the first two decades of life, with a mean age of 14.8 years without gender predilection. But some authors suggest that it is more predilections in males (59%) compared to females (41%). Compound odontoma more commonly detected in the maxilla (67%) as compared to the mandible (33%) with more predilection in the anterior region of the maxilla (61%) [4, 5]. Most of the lesions are detected accidentally on routine dental radiographs, where the affected patients complain of fail to erupt of permanent teeth. Here we report a case of compound odontoma in a female patient.

CASE REPORT

A 20 years female patient reported to the department with a chief complaint of swelling and pain in the upper right front teeth region for 3 months. Patient reveals the swelling was initially smaller in size and gradually increased to a preset size. Family and past medical history were non-contributory.

On intraoral examination revealed a solitary swelling present in the right anterior maxilla extending from the mesial aspect of 12 to distal aspect of 14 with vestibular obliteration. Ectopic eruption of 13 was noted. On palpation, it was firm too hard in consistency and tender (Figure 1).

Baseline blood investigations were non-contributory.

Radiological investigations like Intra Oral Periapical Radiograph (IOPA) and Orthopantomograph (OPG), revealed multiple radio-opaque tooth-like structures with central radiolucent cavities surrounded by a corticated border in relation to 12 and 13 regions. Root canal treated teeth with a fixed prosthesis with respect to 16 and 47. Impacted teeth with respect to 18 and 28 (Figure 2).

Computed Tomography (CT) axial and coronal view revealed well-defined multiple hyperdense lesions in relation to 12 and 13 regions (Figure 3A and 3B).

Based on the clinical examination and radiographic findings a provisional diagnosis of compound odontoma was made.

Surgical extractions were done, where a gingivobuccal mucoperiosteal flap was reflected and a window was prepared over the buccal side of cortical bone in relation to 12 and 13 regions. Multiple small denticles with varied size from 3mm to 9mm, about 30 in number surrounded by a capsule were enucleated using a curette, followed by irrigation and suturing (Figure 4A-4D).

The patient was recalled after one week. Uneventful healing was noted. The patient was further followed up and postoperative Orthopantomograph (OPG) was taken (Figure 5).

Extracted small denticles were sent for histopathological investigations, which revealed denticles containing dentin, pulp, cementum and periodontal fibers suggestive of compound odontoma.



Fig. 1. Vestibular obliteration with respect to 12 and 13



Fig. 2. Orthopantomograph (OPG) shows multiple hyperdense teeth like structures (denticles) with respect to 12 and 13

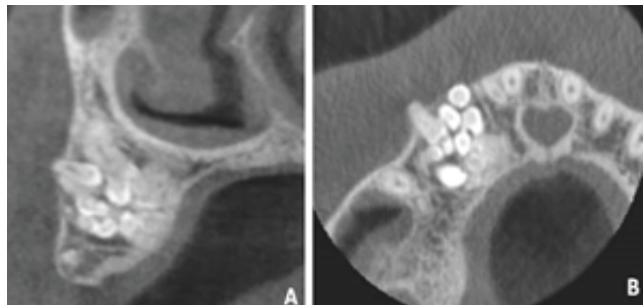


Fig. 3. Coronal (A) and axial (B) view reveals multiple radio-opaque structures



Fig. 4. Gingivobuccal mucoperiosteal flap reflection (A) bone window preparation (B) surgically removed multiple varied size denticles (C) suture placement (d)



Fig. 5. Post-operative orthopantomograph (OPG)

DISCUSSION AND CONCLUSION

Odontomas are the most common, asymptomatic odontogenic tumor, encountered at any age, but frequently seen in the first and second decade of life. In 1867, Paul Broca coined the term “Odontoma” [2, 6]. In 2005, based on the morphology and radiographic features WHO classified odontoma into two types, Compound and Complex. Compound odontoma resembles small tooth-like structures (denticles) containing pulp tissue surrounded by dentin and enamel. Complex odontoma is a disorganized arrangement of dentin, enamel, cementum and pulp tissues [7].

Compound odontoma more frequently found in the anterior maxilla, whereas complex odontoma encountered in posterior maxilla or mandible without any sex predilection. But according to some authors, it is found more in males (59%) compared to females (41%) and anterior maxilla (67%) [4-6].

Odontoma clinically represented as asymptomatic swelling with bone expansion, impaction of the temporal tooth, delayed

the eruption of the primary or permanent tooth and most lesions are diagnosed on routine radiographs [8]. The present case reported was diagnosed as compound odontoma based on the radiographic findings which were further confirmed through histopathological features. In our case, the lesion encountered at anterior maxilla which was the most common location as per literature with buccal cortical bone expansion reflecting the vestibular obliteration and this contributed to the discovery of the lesion.

In 70% of odontomas, the adjacent teeth lead to pathological changes such as devitalization, malformation, malposition,

aplasia, impaction and delayed eruption [9]. In our case, malposition of right maxillary canine was noted.

Complete surgical removal is the treatment of choice for odontomas. But for surgeons, it might be a channeling, as most odontomas are associated with normal adjacent tooth structures. Small and localized odontomas are easy to remove, but large odontomas require a complex treatment approach such as osteoplasty, reconstruction of soft tissue and dental prosthesis. In the present case, the surgical extraction of multiple denticles and complete enucleation of soft tissue was performed.

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