

Compound Odontoma: In a Nut Shell: Case Report.

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Case Report

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ABSTRACT

The term odontoma was first coined by Broca in 1866, who defined it as tumor formed by overgrowth of complete dental tissue. Odontomas constitute about 22% of all odontogenic tumors of the jaws. A Female patient of age 15years was referred to department of Periodontics from Orthodontics, for diagnosis and treatment of the mass which was interfering with retraction of teeth 21 and 22 for orthodontic alignment. Radiographs and histopathological reports revealed it to be a compound odontoma which was removed by surgical approach. Early diagnosis and proper management of odontomas is necessary to prevent later craniofacial complications and other developmental problems. Early diagnosis of odontomas allows adoption of a less complex and less expensive treatment and ensures better prognosis.

INTRODUCTION

The term odontoma was first coined by Broca in 1866, who defined it as tumor formed by overgrowth of complete dental tissue. These odontogenic tumors can be found anywhere in the dental arches. Odontomas constitute about 22% of all odontogenic tumors of the jaws. They are considered to be hamartomas rather than neoplasms and are composed of the tissues native to teeth: enamel, dentin, cementum and pulp tissue [1]. According to 2005 WHO classification of odontogenic tumours, there are two types of odontomas, compound and complex odontomas. Odontomas have also been classified as central odontoma (which presents inside the bone) peripheral odontoma (which occur in the soft tissue covering the tooth-bearing portions of the jaws) and erupted odontoma according to their clinical presentation [2].

Complex odontoma are seen less common in comparison with compound variety in the ratio 1:2. The majority of odontomas which are located in the anterior region of the maxilla are compound, while the great majority of odontomas located in the posterior areas, especially in the mandible, are complex odontomas. Odontomas are generally asymptomatic and rarely diagnosed during second decade of life [3].

The etiology of the odontoma is unknown. However, it has been suggested that trauma and infection at the place of the lesion can offer ideal conditions for its appearance. Many times odontomas are found associated with unerupted teeth. In general they are asymptomatic, slow growing and seldom exceed the size of a tooth, but when large can cause expansion of the cortical bone. The canines, followed by upper central incisors and third molars, are the most frequent teeth impacted by odontomas. In a very few instances odontomas are related to missing teeth. Generally these malformations are intraosseous, but occasionally they may erupt into the oral cavity [3].

Odontomas can also manifest as part of syndromes, such as basal cell nevus syndrome, Gardner syndrome, familial colonic adenomatosis, Tangier disease or Hermann syndrome. The differential diagnosis must be established with ameloblastic fibroma, ameloblastic fibroodontoma and odontoameloblastoma [4].

The treatment according to the available literature is surgical extraction with complete removal of any associated soft tissues, since the odontoma may interfere with eruption of the permanent tooth,

displace the adjacent teeth or give rise to a dentigerous cyst.⁴ Conservative surgical excision is the treatment of choice. Compound and complex odontomas are well encapsulated and easily enucleated from the surrounding bone. Orthodontic treatment may be indicated to correct malocclusion [2].

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A Female patient of age 15years was referred to department of Periodontics from Orthodontics, for diagnosis and treatment of the mass which was interfering with retraction of teeth 21 and 22 for orthodontic alignment.

Radiographic Features: (Figure-2)

The radiographic characteristics of odontomas are always diagnostic. An Orthopantomograph and intraoral periapical radiographs with maxillary anteriors were taken. Revealed a well defined radioopaque mass present in the inter radicular region between the roots of 21 and 22 extending from the midroot region to Cervico Enamel Junction (CEJ) of 21 & 22. It measures approximately 1×0.5cm in size and roughly conical in shape. The periphery is smooth, corticated with a radiolucent rim immediately inside the cortical border suggestive of soft tissue capsule. The internal structure contains varying number of tooth like material or denticles that look like deformed teeth. The degree of radioopacity is equivalent to adjacent tooth components.

Pre and post – operative photographs



Figure-1



Figure-2



Figure-3



Figure-4



Figure-5



Figure-6



Figure-7

Histopathological reports

Macroscopic finding

Hard tissue specimen measuring 1.5×0.7cm in size, the tissue was grayish brown in colour with hard tissue mass within.

Microscopic finding

The Hematoxylin and Eosin stained and studied section of the decalcified tissue demonstrated multiple structures resembling small crown of single rooted tooth like structure showing dentin and pulp tissue. The pulp tissue is seen in the coronal and the root portion of the tooth like structure. The mature enamel of tooth like structure was lost during decalcification procedure. Scattered epithelial cells were also evident. The Histopathological impression explained the overall features suggestive of 'COMPOUND ODONTOMA'.

DISCUSSION AND TREATMENT

The treatment according to the available literature is surgical extraction with complete removal of any associated soft tissues, since the odontoma may interfere with eruption of the permanent tooth, displace the adjacent teeth or give rise to a dentigerous cyst [4]. Conservative surgical excision is the treatment of choice. Compound and complex odontomas are well encapsulated and easily enucleated from the surrounding bone. Orthodontic treatment may be indicated to correct malocclusion [2].

In this case the area was anesthetized. Flap designed preserving the adjacent marginal gingiva and papilla and was extended by two releasing incision one on distofacial line angle of 11 and distofacial line angle of 12. Crevicular incision was given. Blunt dissection was done to reflect mucoperiosteal flap till the swelling was completely exposed of soft tissue. Grooving surrounding the bone the mass was done with round carbide bur under constant irrigation. Careful removal of mass allowed preservation of adjacent cortical bone. All remaining soft fibrous tissue was debrided. The defect was filled by osseousgraft and membrane was placed. Flap was repositioned, approximated and sutured with non absorbable suture material (4-0 Ethicon). Frenum was relived for better approximation of flap without tension. The site was protected by periodontal dressing. Suture removal was done 2 weeks postoperatively. Figure (3-7).

CONCLUSION

The diagnosis is casually established in the course of routine X-ray studies. But the odontomas, compound and complex must be examined microscopically, to establish a definitive diagnosis. Early diagnosis and proper management of odontomas is necessary to prevent later craniofacial complications and other developmental problems. Early diagnosis of odontomas allows adoption of a less complex and less expensive treatment and ensures better prognosis.

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