Case Report

"Compound composite odontoma associated with un-erupted permanent canine": A case report

Ashwin Siddappa, Sunil SM.[1], Manoj Kumar[1], Selvamani M.

Departments of Oral and Maxillofacial Pathology and Microbiology and [1]Oral and Maxillofacial Surgery, Mahe Institute of Dental Science and Hospital, Mahe, Union Territory of Puducherry, India

ABSTRACT

Odontomas are benign odontogenic tumors appearing as small, solitary or multiple radio-opaque lesions on radiographic examinations. Among the two types of odontomas, compound odontomas are painless, with a more limited growth potential than complex odontomas. The majority of odontomas are asymptomatic and discovered incidentally; however, may be accompanied with pain and swelling as secondary complaints in some cases. These lesions, at times, may cause potential disturbances in the eruption of neighboring teeth, such as impaction, delayed eruption or retention of deciduous dentition, henceforth, conservative surgical excision is the treatment of choice. Here, a case of compound composite odontoma is reported, discussing the related clinical and radiological manifestations, the surgical approach performed, and histopathological features.

Key words: Compound composite odontomas, odontomas, odontogenic tumors, tooth like structures

INTRODUCTION

Odontomas are benign odontogenic tumors arising from interaction of odontogenic epithelium with odontogenic ectomesenchyme, resulting in hard tissue formation. They are namely of two types, compound and complex odontomas. According to World Health Organization (WHO) 2005, compound odontomas (also called as compound composite odontoma) are defined as "a tumor-like malformation (hamartoma) with varying numbers of tooth-like elements (odontoids)".[1] Being considered as mixed odontogenic tumors, the cells and tissues in odontomas can appear either normal or be deficit in structure and the level of differentiation may vary in the formations of dental tissues. Thus, well-formed minute tooth-like structures appear in compound odontomas, whereas in complex odontomas the arrangement of dental tissues is haphazard.[2,3] Here, we present a case of a compound odontome in a 30-year-old patient, which is associated with unerupted permanent canine.

Address for correspondence:
Dr. Selvamani M, Department of Oral and Maxillofacial Pathology and Microbiology, Mahe Institute of Dental Science and Hospital, Mahe - 673 310, Union Territory of Puducherry, India.
E-mail: manioralpath@gmail.com

Access this article online	
Quick Response Code:	Website: www.jiadsr.org
	DOI: 10.4103/2229-3019.148270

CASE REPORT

A 30-year-old female was referred to the Department of Oral & Maxillofacial Surgery, Mahe Institute of Dental Sciences & Hospital, with the chief complaint of a swelling in relation to upper front tooth region since 20 years. On intraoral examination, a diffused swelling was noted in relation to gingiva and vestibular region of left maxillary central incisor (21) and permanent left maxillary canine (23) was missing. On palpation, this bony hard swelling measured about 1 X 0.5 cm in size [Figure 1] and no facial asymmetry was noted extraorally. No. 15, 35, 36, 47 had been extracted due to dental caries, and 28 showed root stump. The patient was apparently healthy and no history of similar problem in family was evaluated. Also, no signs or symptoms of temporomandibular joint disorder or systemic problems were noted during general examination. On radiographic examination, OPG revealed impacted 23 and the presence

of multiple radio opaque tooth-like structures between the roots of 21 and 22, surrounded by a radiolucent zone [Figure 2]. Impacted canine had caused displacement and resorption of mesial aspect of 24 and the crown of 22 was mildly tilted. Thus, on the basis of clinical and radiographic features, provisional diagnosis of compound odontome was given. As treatment option, surgical removal of the odontome was considered and the operative procedure was explained to the patient. After obtaining patient's consent, surgery was performed under local anesthesia (LA) [Figure 3]. Labial mucoperiosteal flap in relation to 11, 21, 22, 23, 24, 25 was raised and the underlying bone was removed with a bur and window prepared to remove the lesion. The excised specimen showed few small and calcified tooth-like structures on gross examination and under histopathological sections, tooth-like structures composed of dentin and cementum with centrally located loose fibrous tissue, representing the pulpal tissue were noted. Thus, the microscopical features also confirmed the clinical diagnosis of compound odontoma.

Figure 1: Clinical aspect showing missing 23

Figure 2: OPG showing multiple radio opaque tooth-like structures present between the roots of 21, 22 and impacted 23

Figure 3: Clinical photograph showing surgical exposure of the lesion

DISCUSSION

The term "odontoma" was first coined by Paul Broca in 1867 and he defined the term as "tumors formed by the overgrowth or transitory of complete dental tissue".[4] The etiology for the lesion is unknown but Cahn and Slums have proposed the "continuum concept" based on the assumption that an Ameloblastic Fibroma (AF) will mature over time, and finally form an odontoma. But this concept, however, is not widely accepted, as residual or recurrent cases of AF have never shown further steps of differentiation or maturation into a dental hard tissue — forming odontogenic tumor of more advanced histodifferentiation. Also, AFs are known to occur at ages beyond completion of odontogenesis[5] and the thought of continuum concept is still under debate. Few authors have suggested that local trauma or infection may lead to the production of lesion, but the end result, depends upon the stage of odontogenesis.

Odontomas are most commonly encountered in the first and second decades of life, and are accepted as developmental anomalies (hamartomas) rather than true neoplasms. Here, enamel and dentin are laid down in an abnormal pattern and if the arrangement of the dental tissues resembles the normal teeth, then are called as compound odontoma.[6] They are painless, slow growing lesions, but may reach the size, which usually varies between 1 and 2 cm in diameter.[1] Maxilla, in particular anterior maxillary region is more likely involved than the mandible.[2,6] The usual radiographic presentation is that a collection of tooth-like structures surrounded by a narrow radiolucent zone.

Histologically, compound odontomas are composed essentially of mature dental tissues i.e. enamel, dentin, cementum, and pulp tissue, where the bulk of the tumor is made up of dentin that is normal in appearance. There can be fibrous capsule and a small amount of supporting fibrous tissue.[7] The lesion is treated surgically by complete removal of all mass along with any associated soft tissues, since these odontomas may cause potential oral-related

problems like interference with eruption of the permanent tooth, displacement of the adjacent teeth, etc.[8]

CONCLUSION

Odontomas are asymptomatic lesions and are often discovered incidentally or on routine radiographic examinations. These lesions must be examined microscopically, to establish a definitive diagnosis. Early diagnosis and surgical intervention of odontomas is necessary to prevent any craniofacial complications in later stage.

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How to cite this article: Siddappa A, Sunil SM, Kumar M, Selvamani M. "Compound composite odontoma associated with un-erupted permanent canine": A case report. J Indian Acad Dent Spec Res 2014;1:74-6.

Source of Support: Nil, **Conflict of Interest:** None declared