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COMPOUND ODONTOMA ASSOCIATED WITH AN UNERUPTED MAXILLARY CENTRAL INCISOR

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ABSTRACT: Odontoma is a hamartoma of odontogenic origin which contains both epithelial and mesenchymal cells exhibiting complete differentiation with enamel and dentine laid down in abnormal position. It may result from the extraneous buds of odontogenic epithelial cells from the laminadura, enamel, dentin or cementum. The etiology of odontoma is unknown it may due to trauma, infection or genetic transmission. Treatment includes simple excision with no recurrence noted. The aim of this paper is to present a thorough review on the etiology, clinical presentation, histopathological features and treatment aspects of odontomas.

KEYWORDS: Compound Odontoma tumors, Complex odontoma, hamartomas.

INTRODUCTION

The term odontoma (or odontome)was originally used by Paul Broca in 1867 who defined it as a tumor formed by overgrowth of complete dental tissue^{1,2}. These consist of complete histodifferentiation of different dental tissues, including enamel, dentin and cementum and in some cases pulp also, but they lack morphodifferentiation Due to their composition and behavior, odontomas can be regarded as hamartomas or malformations rather than true neoplasms^{3,4}.

Odontogenic tumors classified odontomas under broad category of tumors containing odontogenic epithelium with odontogenic mesenchyme, with or without dental hard tissue formation. Under this classification, three types of odontomas are listed: odontoameloblastoma, complex and compound odontoma. According to WHO 2005 and on the basis of gross, radiographic, and microscopic features, odontomas are sub-classified into compound odontoma (small tooth like structures) and complex odontoma (a conglomeration of dentin, enamel, and cementum).

The complex odontomas are less common than the compound variety in the ratio of 1:2. The etiology of odontoma is unknown. Several theories have been proposed, includeing local trauma, infection, family history, and genetic mutation. It has also been suggested that odontomas are inherited from a mutant gene or interference, possibly postnatal with the genetic control of tooth development. Complex odontomas are typically found in the posterior mandibular region with female predilection and peak in second decade^{5,6}. Epidemiologically, odontomas are the most frequent odontogenic tumors, and according to different sources in the literature, it accounts for 22–67% of all maxillary

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tumors^{7,8.} Surgical removal is the treatment of choice. Care should be taken, however, not to harm adjacent teeth and permanent buds in children, while follow-up is essential for evaluation of further development of the permanent dentition at the removal location⁹.

Case report

A 12-year-old girl was referred to the Department of Paedodontics, Government Dental College for missing of an upper left central incisor. There was no history of trauma to the facial region as a child, the patient was fit and well medically. Extra oral examination was unremarkable. The skin overlying the missing area was normal.



Case reports

Fig.2. Radioopaque mass irt to 11 to 23.

Intraoral Periapical radiograph, OPG were taken. The radiographs demonstrated a well-defined radiopaque mass in between the roots of 11 to 23. Considering the clinical and radiologic presentations, a diagnosis of compound odontoma was determined. The patient underwent surgery with following infiltration of local anesthesia (2% lignocaine 1:80,000 adrenaline). A mucoperiosteal flap was opened, the tumor was curetted well and lining was removed. The specimen was sent to histological examination, which revealed mostly irregular dentin, cementum, enamel, and loose fibrous connective tissue, which confirmed the diagnosis of compound odontoma.

Discussion

Odontoma is the most common type of odontogenic tumor, although some authors prefer to it as hamartoma, not a true tumor¹⁰. Complex odontoma tend to occur in the posterior region of the jaw and compound odontoma are more common in the anterior region¹¹.Usually they are commonly asymptomatic ,clinical indicators of odontoma may include retention of deciduous teeth, non eruption of permanent teeth, pain, expansion of the bone and tooth displacement. In the present case there was non eruption of permanent tooth. The etiology of odontoma is unknown, but has been attributed to various pathological conditions like local trauma, infections, hereditary anomalies (Gardners syndrome, Hermanns syndrome), odontoblastic activity and alteration in the genetic component responsible for controlling dental $\ensuremath{\mathsf{development}}^{12}$. Hitchin suggested that odontoma are either inherited or due to a mutant gene or interference with genetic control of tooth development postnatally¹³.

All the odontoma, 67% occurred in the maxilla and 33% in the mandible. The compound odontoma has a predilection towards the anterior maxilla (61%) whereas only 34% of complex odontomas occurred in this site. In general, complex odontoma has a predilection for the posterior jaws (59%)¹⁴. In this case, compound odontoma was found in the anterior maxilla which is in accordance with the reported literature. Interestingly both types of

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odontoma occur more frequently on the right side of the jaw than on the left (Compound 62%, Complex 68%), whereas in our case, the odontoma occurred on the left side. 70% of the odontomas, pathologic alterations are observed in the neighboring teeth, such as devitalization, malformation, aplasia, malposition, and remaining embedded¹⁵. In our case, permanent central incisor was malpositioned.



Fig. 3. Surgical excision of the lesion

A compound odontoma which is a mixed tumor is presented here with occurrence in the anterior maxillary region. The case is treated with excision.

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