Complex Odontome?? Or Ectopic Supernumerary?? With Impacted Maxillary Third Molar - An Unusual Presentation

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Introduction

Odontomas generally appear as small, solitary or multiple radio-opaque lesions found on routine radiographic examinations. Traditionally, odontomas have been classified as benign odontogenic tumors and are subdivided into complex or compound odontomas morphologically[1]. Compound odontomas commonly occur in the incisor-canine region of the maxilla and complex odontomas are frequently located in the premolar and molar region of both jaws. Occasionally, odontoma may cause disturbances in the eruption of teeth such as impaction, delay eruption or retention of primary teeth[2]. In general, odontomas occur more often in the permanent dentition and there are very few reports of odontomas associated with third molar teeth in the literature. In this case report; odontoma with impacted maxillary third molar in a adult patient, which are very rarely diagnosed associated with impacted third molar teeth, is presented.

Case Report

A 25 years old male patient reported with a complaint of pain and heaviness in the right upper back tooth region since one month. Pain was spontaneous in onset, dull, intermittent, nonaddicting, aggravates on chewing and relieved by itself after few minutes. His past Dental and medical history was not significant. Intraoral examination revealed a uneruped third molar over the right retromolar area distal to 17. The surrounding mucosa was inflamed. On palpation the brown mass was bony hard in consistency and was covered with calculus deposits. Slight expansion of the buccal and lingual cortical plate was appreciated in the same region (Figure 1). Based on history and clinical examination, a provisional diagnosis of benign bony lesion was given. Intraoral periapical radiograph of right upper back teeth region revealed a well defined radiopacity in the maxillary third molar area starting anteriorly from the distal aspect of the coronal portion of 17 extending posteriorly into the maxillary tuberosity. Superiorly starting from the level of the occlusal surface of 17, inferiorly extending upto the level of the coronal portion of 18.

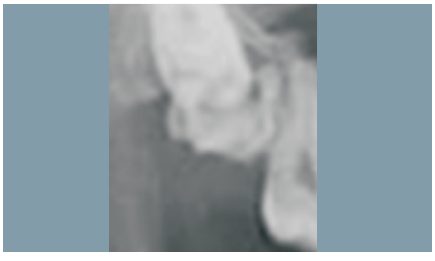

Fig 1: Showing IOPA of the 17, 18 region

Coronal portion of 18 is deeply embedded within the alveolar bone and lies inferior to and on the mesial border of the radiopacity superimposing the distal root of 17suggestive of impacted 18.

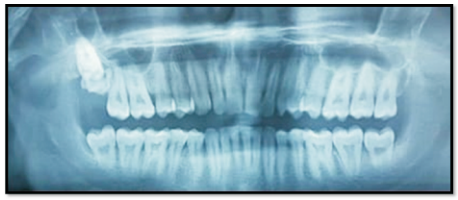

Fig.2: OPG

These tooth like structutres were surgically removed and were sent for histopathological examination. Macroscopically, these hard tissue structures were two in numbers, and measured approximately 2.5cm and 1cm.

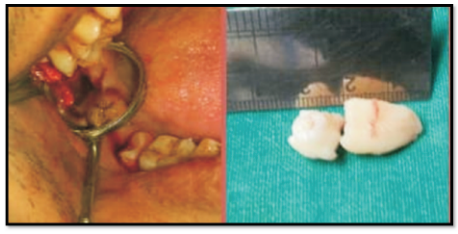

Fig. 3: surgically removed structures

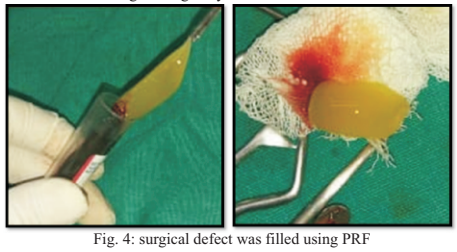

Fig. 4: surgical defect was filled using PRF

They appeared yellowish white in color and were hard in consistency. Specimens were subjected for to histopathological processing. A part of specimen was studied, and on examination normal appearing enamel, dentin and pulp tissue were seen. Presence of cementum was not evident. Ground section revealed normal tooth architecture. Dentinal tubules and abundant interglobular dentin was seen. Cementum was sparse and seen in isolated distribution. The definitive diagnosis of "compound odontome" was established.

Classification

After Brocas (1866) first attempted to classify odontomas according to the stages of tooth development, many classifications were proposed according to structural tissues from which tumor arouse[2].

WHO Classification One of the most common classification is given by World Health Organization (WHO). Four lesions containing enamel and dentine of normal appearance are defined in the WHO classification[3].

They are as follows-

1. **Ameloblastic fibro-odontome:** Consists of varying amounts of calcified dental tissue and dental papilla like tissue, the latter component resembling fibroma. The ameloblastic fibro-odontome is considered as an immature precursor of complex odontome
2. **Odonto-ameloblastoma:** It's a very rare neoplasm which resembles an ameloblastoma both structurally and clinically but contains enamel and dentine
3. **Complex odontome:** When the calcified dental tissues are simply arranged in an irregular mass bearing no morphologic similarity to rudimentary teeth
4. **Compound odontome:** Composed of all odontogenic tissues in an orderly pattern that results in many teeth like structures but without morphologic resemblance to normal teeth. On the basis of gross, radiographic and microscopic features[4,5], two types of odontoma are recognized: (a) compound and (b) complex.

On the basis of their developmental origin, in 1914, Gabell, James and Payne grouped odontome into three types: a. epithelial b. Composite (epithelial and mesodermal) and c. Connective tissue. According to their position within the jaws:[6,7]

a. Intraosseous (erupted odontoma): They occur inside the bone and may erupt into the oral cavity. To date, 12 cases of the erupted variety have been described in the literature

b. Extra osseous or peripheral odontomas: These are odontomas occurring in the soft tissue covering the tooth bearing portions of the jaws, having a tendency to exfoliate.

According to Thoma and Goldman (1946):[8,9] Germinated composite odontomes-two or more, more or less well-developed teeth fused together Compound composite odontomes-made up of more or less rudimentary teeth Complex composite odontomes-calcified structure, which bears no great resemblance to the normal anatomical arrangement of dental tissues Dilated odontomes-the crown or root part of tooth shows marked enlargement Cystic odontomes-an odontome that is normally encapsulated by fibrous connective. Z Gorlin et al eliminated the term composite as redundant and classified odontomas as either complex or compound. There are essentially two types of odontome[10,11]

Complex composite odontome Compound composite odontome. A new type known as hybrid odontome is also reported by some authors. According to Robinson[12] in 1952, in his classification restricted the term odontome for those tumors which aroused from both epithelial and mesenchymal dental forming tissues. But presently, this term is used in a very restricted sense to designate only those tumors which consist of dental hard tissues. Compound Odontome These are the malformations in which all dental tissues are represented in a more orderly pattern, so that the lesion consists of many tooth like structures or denticles composed of enamel, dentin , cementum and pulp. It is a tumor of enamel and dentin arranged in the form of anomalous miniature teeth. Several small abnormal teeth surrounded by a fibrous sac. Complex Odontome these are the malformation in which all dental tissues are represented but not in an organized form or disorderly pattern. It is an odontogenic tumor characterized by the formation of calcified enamel and dentin in an abnormal arrangement because of lack of morphodifferentiation. Signs and Symptoms Most of the odontomes are asymptomatic, although occasionally signs and symptoms relating to their presence do occur. These generally consist of unerupted or impacted teeth, retained deciduous teeth, swelling and evidence of infection.5 Compound odontomas seldom cause bony expansion but complex odontomes often cause slight or even marked bony expansion. The presence of odontomas may lead to malpositioning or displacement of adjacent teeth, aplasia, malformation and devitalization of adjacent teeth[13].

Discussion

Odontoma is a generally asymptomatic, slowly progressing tumor that may pass unnoticed[14,15]. The presence of odontomas may cause a series of disorders and sequelae in the patient, such as problems related to their interference with the process of tooth eruption, ectopic eruption, displacement and malformation of adjacent teeth, diastema, anodontia, and growth pressure exerted by the odontoma that may cause pain, devitalization, and tooth and bone resorption.Complex odontomas generally reach diameters ranging from several millimeters to 3-4 cm [16]. These odontomas preferentially involve the posterior portion of the jaw and might be associated with an unerupted or absent tooth in the region. The present case of complex odontoma can be considered to be rare because of its atypical location, occupying the posterior region of the maxilla. Caboc et al. reported that odontomas in the maxillary sinus may cause pain, facial asymmetry and chronic congestion of the sinus. This was observed in the present case in which the odontoma caused marked discomfort to the patient due to the communication between the sinus and oral cavity caused by exposure of the tumor. This fact favored maxillary sinusitis due to the continuous communication between the two cavities. The presence of well-defined borders and a radiolucent halo around the radiopaque mass is a characteristic finding of odontoma, which was observed in the present case and confirmed by histopathology. Complex odontomas can be associated with other more aggressive odontogenic lesions such as cysts and tumors. Thus, there is consensus in the literature that, once detected, odontomas should be surgically removed. In the present case, the indication for surgery was based on the presence of sinus infection and the need for oral rehabilitation of the edentulous area. However, no pathologic lesions associated with the odontoma were observed. The decision of removing the tumor under general anesthesia in the hospital was based on the extent of the mass and the need for maxillary sinus treatment after excision. Odontomas are common tumors that can be easily diagnosed and treated. However, these tumors should not be underestimated since they may show rare and aggressive features that can lead to serious disorders in the patient. This was the case here, with the patient presenting atypical facial pain caused by a complex odontoma, which was diagnosed after clinical and imaging evaluation and confirmed by histological analysis.

Reference

1. Compound odontoma – diagnosis and treatment: three case reports Branca Heloísa de Oliveira DDS, MS Vera Campos DDS, MS Sonia Marçal DDS, MS.
2. Odontome: A Brief Overview 1 V Satish, 2 Maganur C Prabhadevi, 3 Rajesh Sharma
3. Pindborg, JJ.; Kramer, IR.; Torloni, H. Histological typing of odontogenic tumors, jaw cysts and allied lesions. In: International Histological Classification of tumors. Geneva: World Health Organization 1970. pp.29-30.
4. Bhasker, SN. Synopsis of oral pathology. 6th ed. St Louis: CV Mosby Co 1977. pp. 241-284.
5. Regezi JA, Kerr DA, Courtney RM. Odontogenic tumors: Analysis of 706 cases. J Oral Surg 1978 Oct:36(10);771-778.
6. Vengal M, Arora H, Ghosh S, Pai KM. Large erupting complex odontoma: A case report. J Can Dent Assoc 2007 Mar;73(2): 169-172.
7. Junquera L, de vincente JC, Roig P, Olay S, Rodriguez-Recio O. Intraosseous odontoma erupted into the oral cavity: An unusual pathology. Med Oral Pathol Oral Cir Bucal 2005 mayJul;10(3):248-251.
8. Batra Puneet, Gupta Shwetha, Rajan Kumar, Duggal Ritu, Hariprakash. Odontomes-diagnosis and treatment. A Case Report. J Pierre Fauchard Acad 2003;19:73-76.
9. Thoma, KM.; Goldmn, HM. Oral pathology (5th ed). St Louis, The CV Mosby Company 1960. pp.1221-1222.
10. Kramer, IR.; Pindborg, JJ.; Shear, M. Histological typing of odontogenic tumor. WHO. International histological classification of tumors. 2nd ed. Berlin, Springer 1992. pp.16-21.
11. Singh S, Singh M, Singh I, Khandelwal D. Compound composite odontome associated with an unerupted deciduous incisor: A rarity. J Indian Soc Pedod Prev Dent 2005 Sep;146(3):146-151.
12. Robinson HB. Proceedings of the 5th annual meeting of the American academy of oral pathology. Oral Surg Oral Med Oral Pathol Oral Radiol 1952 Feb;5(2):177-178.
13. Bodin I, Julin P, Thomsson M. Odontomas and their pathological sequels. Dentomaxillofac Radiol 1983:12(2):109-114.
14. Crespo Del Hierro J, González MR, Portela MD, García del Castillo E, Serrano JC. Odontoma compuesto como causa de sinusitis maxilar crônica. Acta Otorrinolaringol Esp 2008:59;359-61.
15. Hisatomi M, Asaumi JI, Konouchi Honda Y, Wakasa T, Kishi K. A case of complex odontoma associated with an impacted lower deciduous second molar and analysis of 107 odontomas. Oral Dis 2002:8;100-5.
16. Lee CH, Park GJ. Complex and compound odontomas are clinico-pathological entities. Basic Appl Pathol 2008;1:30-3.