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Tanveer Karpe
Professor, Dept. Of Oral &
Maxillofacial Surgery, S.B Patil
Dental College and Hospital,
Bidar, Karnataka.

Mohammed Abidullah
Assistant Professor, Dept. Of
Oral & Maxillofacial Pathology,
S.B Patil Dental College and
Hospital, Bidar, Karnataka.

G. Kiran
Reader, Dept. of Oral &
Maxillofacial Pathology,
Government Dental College and
Hospital, Hyderabad,
Telangana.

Kavitha Gaddikeri
Reader, Dept. of Oral &
Maxillofacial Pathology, S.B
Patil Dental College and
Hospital, Bidar, Karnataka.

Md Imran Ul Haque
II Year P.G Dept. of
Prosthodontics, Al-Badar Rural
Dental College & Hospital
Gulbarga, Karnataka.

Correspondence
Md Imran Ul Haque
Al-Badar Rural Dental College
and Hospital, Gulbarga, 585 102
Karnataka, India.

Compound Odontoma - A Case Report

**Tanveer Karpe, Mohammed Abidullah, G. Kiran, Kavitha Gaddikeri,
Md Imran Ul Haque**

Abstract

Compound odontoma shows anatomic similarities to teeth. They are usually asymptomatic but often associated with eruption disturbances. We report clinical, radiographic and histologic features of a case of compound odontoma which was treated by surgical removal.

Keywords: Odontoma, composite, compound.

1. Introduction

The term odontoma was first used in 1967 by Paul Broca to describe all the odontogenic tumors [1]. Now odontomas are considered as hamartomas rather than true neoplasms [2]. Odontomas are the most common type of odontogenic tumors. They chiefly consist of enamel, dentin and variable amounts of cementum and pulp. They are slow-growing, benign tumours showing nonaggressive behaviour [3, 4]. In odontome, the hard tissues are laid down in an abnormal pattern because the organisation of odontogenic cells fails to reach a normal state of morpho differentiation. As this lesion is composed of more than one type of tissue, it is called as composite odontome. Odontomas are subdivided into compound and complex types. Compound odontomas is composed of multiple, small tooth like structures. If the calcified dental tissues appear as an irregular mass bearing no morphologic similarity to even rudimentary teeth, they are called as complex composite odontome [5]. Complex odontomas are less common than the compound variety and are in the ratio of 1:2 [6].

Odontomas constitute of about 22% of all odontogenic tumors of the jaws [4]. Odontomas occur more often in the permanent dentition and are very rarely associated with the primary teeth [7]. Here we present a case of a compound composite odontome in a 14 year old patient.

2. Case Report

A 14 year old female patient was referred to the orthodontic department with a complaint of missing teeth in left upper front teeth region and palatally placed an upper front tooth which has become annoying for her aesthetically. Her history revealed that the patient had undergone extraction of upper left central incisor two months back because of trauma to the tooth.

Examination revealed skeletal class I pattern and class I molar relationship. Intraoral examination showed missing 21 and a palatal swelling of 1x1 cms in size in relation to 21, 22, 23. The swelling extended from mesial aspect of 11 to 24 regions. The overlying mucosa was of normal color. 23 was buccally placed. On palpation the swelling was hard in consistency (Fig.1).



Fig 1: Radiograph showing radiopaque odontome.

Periapical radiograph (Fig.2) and OPG (Fig.3) revealed masses of radiopaque calcified tooth-like structures juxtaposed to the root of upper left lateral incisor. The lesion was surgically removed under local anesthesia and the specimen was sent to the department of oral pathology.



Fig 2: Intra-op picture showing odontome.



Fig 3: OPG (Ortho Pantomo Gram)

The gross findings showed a calcified mass resembling a small tooth like denticle. The entire specimen was kept for decalcification. Histology showed a mass of tooth-like structures made up of dentin, enamel matrix, pulp (Fig. 4). Thus correlating the clinical, radiographic and microscopic findings, the diagnosis of compound composite odontoma was made.

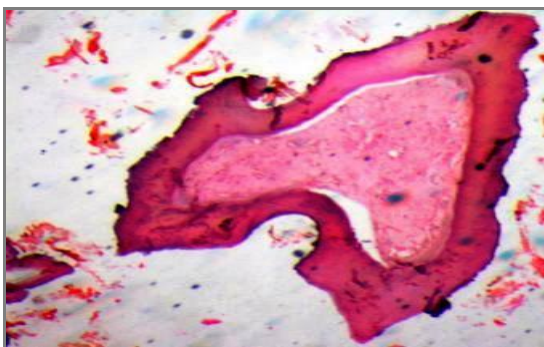


Fig 4: Photomicrograph showing dentin arranged in a haphazard manner with pulpal tissue and enamel space.

3. Discussion

Paul Broca defined the term odontoma as “tumors formed by the overgrowth of transitory or complete dental tissues”^[8].

They are mixed tumours, consisting of both epithelial and mesenchymal cells that present a complete dental tissue differentiation^[9]. Etiology of odontome is largely unknown. It has been suggested that local infection, trauma may lead to the production of this lesion. Hitchin suggested that odontomas are either inherited or are due to a mutant gene or post natal interference with genetic control of tooth development.⁵ the lesions are invariably asymptomatic and are usually discovered on routine radiographical examinations during the second and third decades of life^[10].

Studies have shown that most of odontomes occur on right side of jaws, whereas in our case odontome was seen in upper left quadrant^[11]. The average age of occurrence was found to be 20.3 years whereas our patient was much younger and 14 year old^[12]. Considerable controversy exists over gender distribution. While some studies consider odontomas to be more common in females than in males^[13]. Others consider these lesions to be similarly distributed between both genders.^[14] On the contrary, Iatrous *et al.*^[15] and Yadav *et al.*^[16] found a male predilection. Our patient was a female.

Clinically most odontomas are asymptomatic. Seldom they cause swelling, pain, suppuration, bony expansion, and displacement of teeth^[6]. Odontomas can measure anywhere from a few millimetres to many centimetres in their greatest dimension^[17].

Odontomas are either complex or compound, and are classified as intraosseous, which occur inside the bone and may erupt (erupted odontoma) into the oral cavity and extraosseous or peripheral that occur in the soft tissue covering the tooth-bearing portions of the jaws^[18].

This lesion is composed of more than one type of tissue and for this reason, has been called a composed composite odontoma. In some composite odontoma the enamel and dentine are laid down in such a fashion that the structure bear considerable anatomic resemblance to the normal teeth, except that they are often smaller than typical teeth^[5].

They have been termed compound composite odontoma when there is at least superficial anatomic similarity to normal teeth. It is usually located in the anterior maxilla^[5].

On the other hand when the calcified dental tissue are simply an irregular mass bearing to morphologic similarity even rudimentary teeth, the term complex composite odontoma, It is usually located in the posterior mandible^[5].

Radiographically, the first stage is characterized by radiolucency due to the absence of dental tissue calcification, the second or intermediate stage shows partial calcification and the third or classically radiopaque stage exhibits predominant tissue calcification with the surrounding radiolucent halo described above^[20].

Histopathologically, the lesion consists of normal appearing enamel or enamel matrix, dentin, pulp tissue and cementum which do not exhibit a normal relation to each other. The connective tissue capsule around the odontoma is similar to the follicle surrounding the normal tooth. Ghost cells are seen in 20% of the cases^[6].

Treatment of odontomas is surgical removal. The prognosis of these tumors is excellent with a little tendency towards relapse.

4. Conclusion

Odontomas, both compound and complex, must be examined microscopically, to establish a definitive diagnosis. Though the diagnosis of composite odontoma is not very challenging to the oral pathologists, it is very necessary for early diagnosis and proper management of odontomas to prevent later craniofacial complications and other developmental problems.

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