

## Multiple Compound Composite Odontome with Unerupted Permanent Incisor

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### Abstract

Odontomas are considered to be developmental anomalies which can be seen in any region of the oral cavity. There are two types of commonly occurring odontomas: compound and complex. This case report discusses about twelve years old boy who reported with unerupted upper left central incisor. Radiograph revealed a radiopaque mass in relation to the unerupted tooth which was later confirmed to be compound composite odontoma. A surgical excision was done and around 34 pieces were removed.

**Keywords:** Denticles; Compound odontoma; Odontoma

### Introduction

Odontoma is defined as tumour of odontogenic origin [1]. Odontomas are developmental malformations or lesions of odontogenic origin that are non-aggressive, hamartomatous and consists of enamel, dentin, cementum and pulp tissue (hence, they are also called composite i.e. consisting of multiple or more than one type of tissue) constituting 22% of all odontogenic tumours [2]. Paul Broca coined the term 'odontoma' in 1867. It is defined as tumours formed by the overgrowth or transitory of complete dental tissues [3]. It may be distributed in numerous combinations and different patterns as soft, calcified or mixed tissues. They are slow growing benign tumours showing non-aggressive behaviour [4]. Though the etiology of odontomas is still unknown, environmental factors such as infection and trauma are considered as causative agents. Genomic changes have also been attributed to the occurrence of odontoma. There is no gender predilection and are most often diagnosed during the first two decade of life on routine radiographic examinations [5]. According to the classification of the World Health Organisation (WHO, 2005) two types of odontomas can be found: complex odontomas and compound odontomas- the latter being twice as common as the former [1]. The purpose of the present article is to a case report with multiple compound composite odontoma with unerupted permanent central incisor.

### Case Report

This case report presentation of a 12 year old male who reported with the chief complaint of missing upper front tooth. There was no relevant medical or dental history and it was the patient's first dental visit. Any history of trauma was not revealed. On intra oral examination, 21 were found to be clinically missing (Figure 1). An intra oral periapical radiograph was recommended in relation to 21 to verify it was congenitally missing or impacted due to any other reasons. Intra oral periapical radiograph revealed the presence of 21 along with a radiopaque mass overlapping the crown of 21 (Figure 2a). From the clinical and radiographic findings, it was provisionally diagnosed as odontoma. Surgical excision of the radiopaque calcified mass was planned. Oral prophylaxis was done following which local anesthesia was administered in relation to 21 regions. Mucoperiosteal flap was raised both buccally and

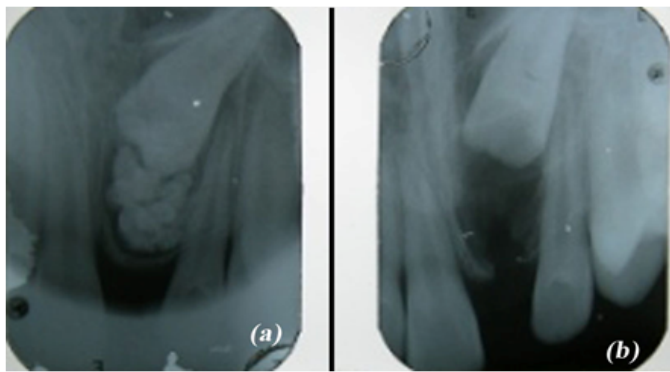
palatally in relation to 21 and small tooth like structures were seen after removing the thin bony coverage in relation to 21 (Figure 3). A complete surgical excision was done and there were nearly 34 pieces of tooth-like structures were removed (Figures 4 and 5). A post operative radiograph didn't show the presence of any denticles (Figure 2b). Once hemostasis was achieved, a suture was placed to close the mucoperiosteal flap that was raised both buccally and palatally. Zinc oxide eugenol pack was placed over the area. Differential diagnosis of odontogenic tumour, impacted tooth and osteoblastoma were considered. Patient was reviewed after one week. Histopathologically the sections revealed tooth like structures containing dentine, pulp and cementum confirming the provisional diagnosis of compound composite odontoma. During decalcification, the enamel cap on the denticles was removed (Figure 6). The patient was advised to seek a review once in 3 months in order to assess the eruption of unerupted central incisor.

### Discussion

Functional differentiation of epithelial and mesenchymal components of odontomas leads to the formation of enamel and dentin. [6] Although the etiology of odontoma is not known, several theories including local



Figure 1: Intraoral photograph showing clinically missing 21



**Figure 2:** Intraoral periapical radiograph (a) Preoperative radiograph showing unerupted 21 along with calcified radiopaque mass (b) Post operative radiograph showing completely excised compound odontoma



**Figure 3:** Mucoperiosteal flap elevated and the thin bony covering removed exposing the denticle

trauma, infection, family history, hereditary anomalies (Gardener's syndrome, Hermann's syndrome), odontoblastic hyperactivity and alterations in the genetic components responsible for controlling dental development have been proposed. Another important factor in the etiology of compound or complex odontoma is the persistence of a portion of lamina. [7] Compound odontomas generally occur in the maxillary anterior region, while complex odontomas occur in the posterior mandible region [8]. Tooth eruption disturbances such as delayed eruption of the primary and permanent teeth or over retained primary teeth are usually associated with odontoma in most of the children [9].

In the present case the compound odontoma was located in the anterior region as stated in the literature and the patient had unerupted maxillary central incisor. Clinically odontomas are generally asymptomatic. Occasionally, it increases in size and may produce facial asymmetry due to the expansion of bone. Odontoma most commonly occurs on the right side of the jaw than on the left (Compound 62%, Complex 68%) [1]. In the present case, the odontoma was seen on the left side. Radiographically, compound odontomas are identified as a collection of tooth-like structures that vary in size and shape and have a narrow radiolucent zone surrounding it. The complex odontoma appears as a calcified mass with a radio density of tooth structure, which is surrounded by a narrow radiolucent rim [10].

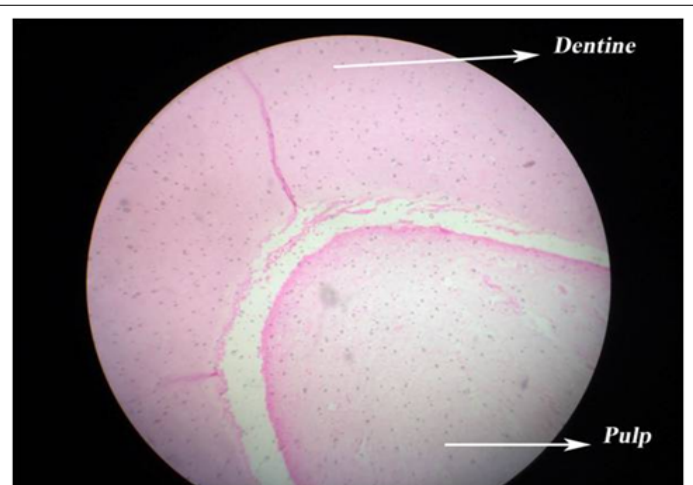
In a literature review by Amado-Cuesta et al. the number of denticles



**Figure 4:** Complete excision of the denticles



**Figure 5:** Excised 34 denticles



**Figure 6:** Photomicrograph of the decalcified denticles showing dentine and pulp (H&E X4)

varied from 4 to 28 [11]. The compound odontoma we encountered in the present case was 34 denticles which is the most striking feature. The extracted denticles display fusion, concrescence and dilaceration. Urvashi Sharma et al. reported a case with 37 compound odontoma denticles [12]. Surgical removal of calcified mass and proper positioning of the impacted tooth in the dental arch with the help of orthodontic traction and (b) extraction of the impacted tooth if it is not in favourable place or require sectioning of tooth are the other treatment options of odontomas with impacted teeth [13].

#### Learning Points

- Early detection of the condition will help in a better prognosis of teeth in relation to it.
- Odontomas are generally asymptomatic, most often diagnosed during routine radiographic examination for delayed eruption.
- Surgical elimination is commonly the treatment of choice for odontoma.

**Conflicts of interest:** Nil

#### References

1. Hine S, Levy (1993) A Text Book of Oral Pathology, 4th ed. W.B. Saunders and Co. 308-12.
2. Wood NK, Goaz PW, Lehnert JF (1997) Differential diagnosis of Oral and Maxillofacial lesions. St Louis: Mosby, 415-32.
3. Gurdal P, SeckinT (2001) Odontoma. Quintessence Int 4: 32-38.
4. Mupparapu M, Singer SR, Rinaggio J (2004) Complex odontoma of unusual size involving the maxillar sinus: Report of a case and review of CT and histopathologic features. Quintessence Int. 35: 641-645.
5. Regezi JA, Sciubba JJ (1999) Oral Pathology: Clinical Pathologic Correlations, 3rd ed. Philadelphia: Saunders, USA, 323-56.
6. Budnick S (1976) Compound and complex odontomas. Oral Surg Oral Med Oral Pathol 42: 501–506.
7. Liu K Kuang, Hsiao Ching-Kai, Chen Hung-An, Tsai Min-Ywan (1997) Orthodontic correction of a mandibular first molar deeply impacted by an odontoma: A case report. Quintessence Int 28: 381-385.
8. Owens BM, Schuman NJ, Mincr HH, Turner JE, Oliver FM (1997) Dental odontomas: A retrospective study of 104 cases. J Clin Pediatr Dent 21: 261-264.
9. Tomizawa M, Otsuka Y, Noda T (2005) Clinical observations of odontomas in Japanese children: 39 cases including one recurrent case. Int J Pediatr Dent 15: 37-43.
10. White PC (2000) Oral Radiology- Principles and Interpretation; Fourth Edition; Mosby 395-7.
11. Amado-Cuesta S, Gargallo-Albiol J, Berini-Aytes L, Gay-Escoda C (2003) Review of 61 cases of odontoma. Presentation of an erupted complex odontoma. Med Oral 8: 366–73.
12. Sharma U, Sharma R, Gulati A, Yadav R, Gauba K (2010) Compound composite odontoma with unusual number of denticles - A rare entity. Saudi Dent J 22: 145-9.
13. Mahfujul Haq Khan, Manjurul Karim, Sejuty Haque, Saeed Hossein Khan, Mohammad Towfiq Alam (2011) Compound Odontome with unerupted permanent incisor. Ibrahim Med Coll J 5: 29-31.