



## CASE STUDY

### COMPOUND ODONTOMES IN MIXED DENTITION: SPEED BUMPS IN TOOTH ERUPTION

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#### ABSTRACT

An odontoma is merely a developmental anomaly. Odontomes are one of the most common type of odontogenic tumors and are generally asymptomatic. An odontome gives rise to ameloblasts and odontoblasts and are considered to be developmental anomalies resulting from the growth of completely differentiated epithelial and mesenchymal cells. Histologically, there are two types of odontomes: Compound and Complex. Both undergo a second classification considering the location: (1) Central Odontoma, have intra-bony location (2) Peripheral Odontoma, have extra-bony location; usually in soft tissues like muscles, gums and mucosa, and (3) Erupted Odontoma, exposed to the oral cavity, causing painful symptoms due to inflammation, which is the rarest in Literature. The most frequent being intraosseous while an erupted odontoma in the oral cavity can be regarded as a rarity. This case report describes a compound odontome diagnosed in a child with resultant delayed eruption of permanent mandibular teeth. Impacted permanent mandibular left canine and premolar were brought in normal positions by surgical excision of the lesion. An early diagnosis of the same allows better prognosis with the adoption of a less complex and expensive treatment.

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## INTRODUCTION

Twenty percent of the maxilla-mandibular tumors are odontomas and are characterized as benign developmental anomalies. (Mendonça *et al.*, 2009) Single and intraosseous lesions can also be seen in the dental arch which resembles different arrangement of the tooth structures. (Mendonça *et al.*, 2009; Patriarca, 2008) They may appear at any age and are associated with the permanent teeth in children, adolescents and young adults. Most of them are diagnosed in the second decade of life. (Serra-Serra *et al.*, 2009; Nóia *et al.*, 2008) According to the classification of the World Health Organization (WHO), the complex odontoma has disordered dental tissues, forming a single solid mass. (Silva *et al.*, 2007) Some theories mention that aetiology of odontoma can be heredity, genetic, local trauma or infection. Many authors have reported a slight predilection for males but may also affect both sexes. (Patriarca, 2008; Ali Azhar *et al.*, 2013) Clinically the odontomas are asymptomatic lesions, but may show signs and symptoms associated such as retention of permanent teeth, malformation of adjacent teeth, infection, presence of a diastema and swelling. (Weissmann *et al.*, 2006) An odontoma is the most frequent pathology that is associated with dental occlusion in the oral cavity.

(Passeto *et al.*, 2005) The odontomas are predisposed to be located in maxillary incisors and canines, followed by all the mandible due to its variable sizes and slow growth. They are usually diagnosed due to the delay in tooth eruption and routine radiographic examination by the dentist. (Silva *et al.*, 2007; Tejasvi and Babu, 2011) There are three types of odontoma clinically recognized: (1) Central Odontoma, (2) Peripheral Odontoma, and (3) Erupted Odontoma, being associated with impacted teeth positioned coronal to the tooth, thus allowing their exposure in the oral cavity. (Pimenta *et al.*, 2007) Generally, this exposure can cause inflammation of adjacent soft tissue, pain or even infection. Hereby, we present a case of compound odontoma which was timely diagnosed and successfully treated.

### Case report

An 8 year old female patient reported to us with a chief complaint of unaesthetic lower teeth. Patient was accompanied by her mother. Intra-oral examination revealed that lower left permanent lateral incisor appeared 3mm below the occlusal plane when compared to permanent lateral incisor on contra-lateral side. Intraoral periapical radiograph was taken followed by OPG (Figure 1) which revealed, occlusal level of lower left first premolar 3mm below the occlusal plane of second premolar and when compared to contralateral side it was observed that occlusal plane of both the premolars were at

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same level, also small irregular mass resembling teeth like appearance was found below the lower left primary molars (74,75).

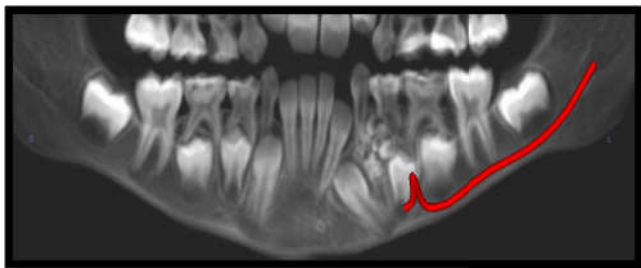


Figure 1. Orthopantomogram view showing the affected region

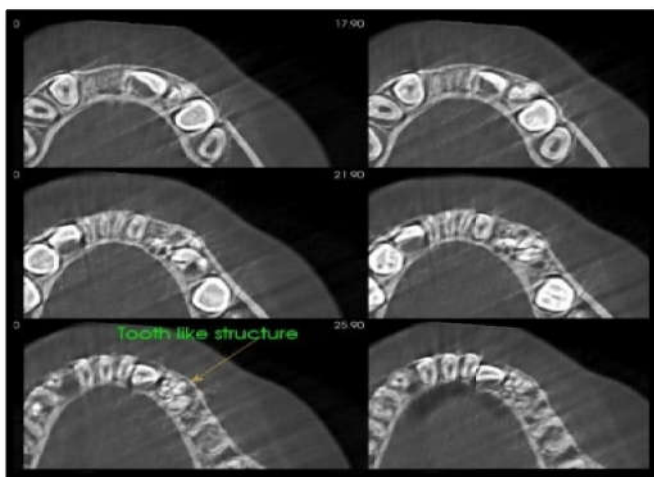


Figure 2. CBCT (volumetric and axial views) depicting the odontome and associated retained permanent teeth

The OPG was also suggestive of the lower left permanent canine having a horizontal inclination hitting on the root of the adjacent erupted lateral incisor at the level of middle to apical 1/3<sup>rd</sup>. CBCT (Figure 2) was advised to the patient for confirmation of the diagnosis which revealed tooth like structures and therefore the diagnosis of compound odontoma was arrived upon. Surgical removal of the odontomes was planned. Local anesthesia was given to the patient and the patient's behavior during the procedure was classified as positive, according to Frankel's Behavior Rating Scale. Painting and draping was done following all aseptic precautions. Extraction of lower left primary molars (74,75) were done. Creviceular incision was taken, surgical site was exposed and removal of the twelve mineralized structures showing tooth-like appearance (odontomes) (Figure 3) was done followed by irrigation with normal saline. Closure was achieved using Vicryl 4-0.

The extracted sample was sent for histopathological review, the results of which was in accordance with the clinical findings and provided a confirmative diagnosis of compound odontome.

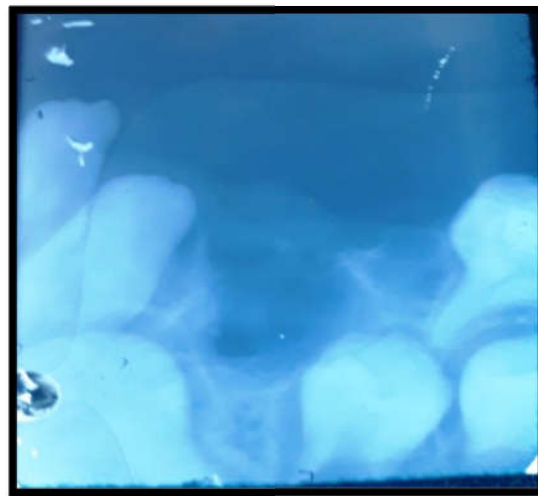


Figure 3. Post operative Intra oral periapical radiograph (L) and clinical photograph depicting the extracted odontome and lower left primary canine and molars

Postoperative instructions related to the maintenance of oral hygiene, cold compression, ingestion of cold and soft meals, avoiding spitting of saliva for twenty four hours and management of pain were given to the patient's mother. Follow-up of patient was done after seven days.

## DISCUSSION

(Queiroz *et al.*, 2005) reported that odontomes are odontogenic tumors which undergo functional differentiation and is composed of tissues having epithelial and mesenchymal origin. (Pimenta *et al.*, 2007) regarded odontomes as the complete differentiation of specific cells with developmental anomalies. In most cases, the odontomas being diagnosed by the absence of an erupting permanent tooth and thereby routine radiographic findings. (Nóia *et al.*, 2008) Serra-Serra, Berin-Aytés and Gay-Escoda, (Serra-Serra *et al.*, 2009) in their clinical cases, reported that the odontoma was diagnosed by a radiographic finding, the same happened in the case described here. The odontoma can be complex or compound, wherein compound odontomes have a higher predilection in the anterior maxilla and complex odontomes in the posterior mandible. (Serra-Serra *et al.*, 2009) In relation to its location, odontoma also suffer a classification, being basically recognized as peripheral odontoma (extra-osseous), central odontoma (intraosseous), and erupted odontoma. (Pimenta *et al.*, 2007)

The intraosseous type is more frequently reported. In exceptional cases, they can be seen as extra-osseous or in occlusion in the oral cavity. (Mendonça *et al.*, 2009; Patriarca, 2008) In order to achieve proper occlusion, surgical removal of odontoma is always considered as the most appropriate conduct such that the eruption process of permanent teeth is not hampered. (Freitas *et al.*, 2009) Radiographic examinations in the form of OPG and CBCT, play an important role in diagnostic and surgical planning, which aims to accurately excise the odontomes from oral cavity.

### Conclusion

The appropriate and early diagnosis of odontomes is essential for the favorable prognosis and further prevention of dental and craniofacial developmental anomalies. An appropriate scheme of treatment lessens the chance of infection while aiding in achieving a stable occlusion. Hence, a sound knowledge of developmental abnormalities, their clinical findings and radiographic appearance can pronounce the correct diagnosis with appropriate treatment at the earliest. As stated by Desiderius Erasmus that "Prevention Is Better Than Cure".

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