Case Report

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COMPOUND COMPOSITE ODONTOME IN A 9 YEAR OLD FEMALE IN ANTERIOR MAXILLARY ALVEOLUS REGION: A CASE REPORT

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ABSTRACT:

Odontomes are asymptomatic hamartomatous malformations, presenting as compound or complex types. Defect in the maturation phase of morpho-differentiation leads to these developmental anomalies. These are usually associated with unerupted teeth, impacted teeth, retained deciduous teeth, swelling and infection. Here, we present an interesting case of a 9-year old female, reported with unexpected compound composite odontome in the anterior maxillary alveolus region in relation to left maxillary permanent tooth, during thorough clinical and radiographical examination for her orthodontic complaint.

Key Words: Compound composite odontome, unerupted, orthopantomogram, maxillary occlusal, surgical excision

INTRODUCTION:

The abnormal arrangement of enamel and dentin which are formed by functional ameloblasts and odontoblasts leads to odontome. The morphodifferentiation layer exhibits immature odontogenic cells [1-4]. The asymptomatic odontome, as known by Broca in 1867, present with impacted, unerupted, retained deciduous teeth, infection and oedema. The classification presents as intraosseous and extraosseous whereas the World Health Organization delineates as compound and complex [2,5,16,17]. In this case report, we present an interesting clinical scenario in a 9 year old female who came for orthodontic treatment but presented with compound composite odontome in anterior maxillary alveolus region in relation to unerupted permanent tooth.

CASE DETAIL:

A 9- year old female presented to the Department of Dentistry and Faciomaxillary Surgery for orthodontic treatment of left maxillary central incisor which was partially erupted. The patient was conscious, oriented and afebrile. No significant findings from her past medical and dental history. Family history of the patient was non-contributory. Extraoral examination revealed a bulge in the left upper lip region on palpation. Intraoral examination revealed a firm swelling seen labially in relation to 21 at the anterior maxillary alveolus region. The swelling was of firm, 1 cm x 1cm, exhibiting lobulated and blanched surface area, well defined, immobile and fixed to underlying structures. Surrounding mucosa exhibited no signs of erythema, ulcer, inflammation and pain. Absence of lymphadenopathy and paresthesia witnessed. Provisional diagnosis was of mesiodens, cystic

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odontome, osteoma and osteoblastoma. Orthopantomogram and maxillary occlusal radiograph revealed a radioopaque structure outlined by radiolucent area leading to diagnosis of compound composite odontome requiring surgical removal (Fig1, Fig 2). Patient was placed in supine position under left nasotracheal intubation. Extra and intraoral painting was done with 5% povidone iodine solution followed by sterile drape. Semilunar incision given in relation to upper vestibule region of 11,21. After mucoperiosteal flap was raised, bony protuberance was observed in relation to 11,21. Superficial bone was removed with round bur. Multiple tooth-like structures were removed with elevator without damage to adjacent teeth. Frenectomy was performed to correct high frenal attachment. Flap was approximated and sutured with 4-0 vicryl. Postoperative recovery period was uneventful. The patient was discharged after one week. Last follow up was done before 3 months with no more recurrence. Surgical excision of odontome was required in order to avoid cystic or tumour transformation.

DISCUSSION:

Of all the odontogenic tumours, odontome constitute 22% [18,19]. Termed by Broca in 1867, still dilemma in accepting it as a hamartoma or a true tumour [5,20]. Based on the developmental origin, Gabell, James and Payne classified odontome as purely epithelial, a mixture of epithelial and mesodermal and purely connective tissue. Based on their nature of presentation, Thoma and Goldman classified in 1946,

- Fusion of two or more, more or less well developed teeth known as geminated composite odontome
- More or less rudimentary teeth, similar to natural teeth, presenting as compound composite odontome
- Dissimilar appearance to teeth like structures, presenting as complex composite odontome.
- Enlargement of coronal or radicular portion of tooth leading to dilated odontome.
- Encapsulation within a cyst or in its wall leading to cystic odontome[6,8].

WHO classification:

- Calcified irregular mass not resembling teeth known as complex composite odontome.
- Calcified mass bearing resemblance to the teeth, known as compound composite odontome.
- Combination of calcified dental tissue and dental papilla like tissue, known as ameloblastic fibro-odontome [7,9].

Recently, a new type known as hybrid variety has been reported [1].

Moreover, odontomes are also classified as extraosseous due to their location in

the soft tissue surrounding the tooth bearing portions of upper and lower jaw and intraosseous – within the bone [17,21]. Bilateral odontome of maxillary sinus has been reported by Bland Sutton in 1888[9]. Multiple compound composites of maxilla and mandible has been reported by Thomson et al in 1968. Compound composite odontome containing 2000 denticles has been reported by Herrman in 1957. Multiforme odontome in maxilla and mandible has been reported by Manil 1974. Regezi et al stated that odontomes constitute 65% of all odontogenic tumours[8]. Compound composite odontome accounts between 9% and 37% whereas the complex composite odontome accounts between 5% and 30% [10-12]. Clinical findings include paresthesia, oedema due to associated tooth displacement, retained deciduous teeth, pain, cortical bone expansion and unerupted permanent teeth. The most common site for the compound composite odontome is anterior maxillary region whereas complex composite odontomes are frequently seen in posterior part of maxilla and mandible [17].

Etiology of odontome are as follows, infection, inflammation, hereditary disorders, genetical alterations and odontoblastic hyperactivity[13, 14]. Persistence of a portion of dental lamina plays an important role in the formation of compound or complex odontome. Any change in the epithelial cells of persistent lamina might alter the inherent capacity of the odontogenic epithelium to pass through tooth formation stages and maintain its ability to differentiate into functional ameloblast and odontoblast, leading to the formation of composite compound odontome [11]. Bone resorption is usually witnessed by gradual increase in the size of odontome [15,17]. Definite treatment includes surgical removal of the compound composite odontome.

CONCLUSIONS:

Being a hamartomatous malformation, an accurate differentiation has to be done for better prognosis and futuristic conservation of the existing dentition.

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FIGURES:

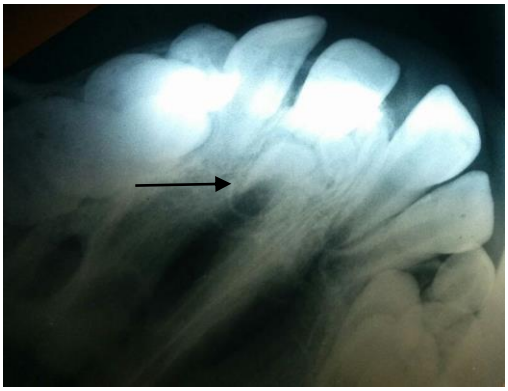

Fig 1: Maxillary occlusal radiograph depicting compound composite odontome (arrowhead)

Fig 2: Orthopantomogram depicting compound composite odontome (arrowhead)