Case Report

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An Unusual Large Erupted Complex Composite Odontoma A Rare Case with Rare Presentation

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Abstract

Odontomas are hamartomatous malformation of fully developed tooth structures like enamel, dentin and cementum. These tumours are of two types, compound and complex depending on the basis of differentiation towards normal teeth. Of these complex odontomas are rare, asymptomatic and incidentally diagnosed on radiography. The tumours rarely present with large size causing facial asymmetry, inflammation and very rarely erupt into the oral cavity. Hence, herein we report the case of an unusual large complex composite odontoma erupting in the left posterior mandible of the oral cavity.

Keywords: Complex Odontoma; Oral Cavity; Mandible; Facial Asymmetry.

Introduction

Odontomas are hamartomatous lesion and it represents malformation of odontogenic origin in which both epithelial and mesenchymal cells exhibit complete differentiation to ameloblast and odontoblast. These tumours are formed from enamel and dentin with variable amount of cementum and pulp tissue [1].

In complex odontomas (CO) the dental tissues form an irregular hard mass which is well developed and shows disordered pattern of arrangement. It occurs at any age, with greater prevalence in the second decade of life. Odontomas commonly seen in males in the posterior region of the mandible [2].

Exact etiology of complex odontoma is not known, but the probable causes include trauma, infection, family history and genetics [3].

Complex odontomas rarely erupts in the oral cavity and causes pain, inflammation and infection of the adjacent structures along with expansion of the cortical bone. To the best of our knowledge there are very few case reports of erupted complex odontomas in the English literature resulting in ulceration of the buccal mucosa.

In the present case odontoma measuring 4.5 cms mediodistally and 3.5 cms buccolingually and weighed 49.5grams, thus was unusually large. Past literatures reveal, the weight of the largest reported odontoma was 0.3 Kg [4].

Hence, herein we report a rare case of large erupted complex odontomas with rare presentation in the form of facial asymmetry, expansion of cortical bones with ulceration of the buccal mucosa.

Case Report

A 21-year-old male presented to the out patient department of oral surgery, Dental College. Patient presented with complaints of swelling on the lower left in posterior mandible region since 3 years. The swelling was gradually increasing in size over a period of three years with history of pain, ulceration of buccal mucosa since 1 year.

Extra-oral examination revealed facial asymmetry. The swelling located on the left posterior region of the mandible. The swelling extended anteroposteriorly measuring 4x4.5 cms. There were no secondary changes on the overlying skin, or any difficulty in swallowing or breathing.

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Intra-oral examination revealed yellowish brown, irregular solid mass measuring 4.5 cms mediodistally and 3.5cms buccolingually located in the left posterior mandibular region (figure 1).

On palpation, the lesion was bony hard and nontender in nature. The patient further was evaluated on radiography which revealed well-defined radiopaque mass with fine radiating periphery and surrounded by thick radiolucent band in the left mandibular region (figure 2). No evidence of second and third molars was noted. The first molar was found to be submerged in the lesion. Computer tomography (CT) was not done in our case due to poor economic constraint.

In view of above clinical and imaging findings the diagnosis of cemento-ossifying fibroma with differential diagnosis of fibro-osseous lesion, odontoma, fibro-odontoma and cementoblastoma were considered. The patient underwent conservative surgical excision under general anesthesia through intraoral approach. Excised mass was fixed in 10% buffered formalin and sent for histopathological examination.

Gross

The mass was yellowish to brown in colour with hard in consistency measuring 5x4.5cms and weighed about 49.5gms.

Histopathology

On histopathological examination showed loose connective tissue containing strands and islands of odontogenic epithelium (Figure 3). The matured dental tissues, enamel, dentin and cementum are arranged in a haphazard pattern. Focal areas show calcified structures which does not resemble the normal histological pattern of arrangement of dental tissues (Figure 4). Hence the final histopathological diagnosis of complex composite odontoma was done. Post operative follow- up of the patient was insignificant and patient was well and had no recurrence till the date of review of the case.

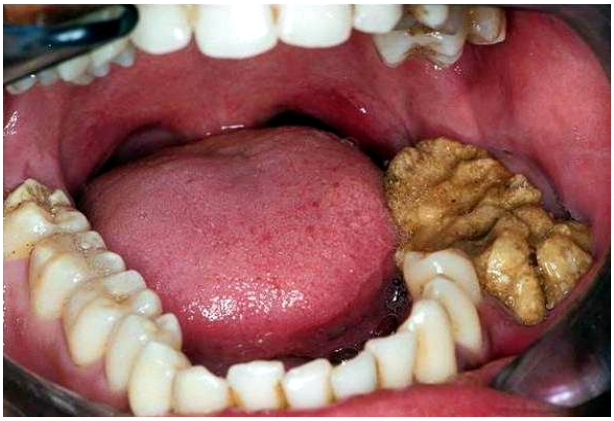

Fig. 1: Intra-oral irregular solid mass yellowish brown, located in the left posterior mandibular region

Fig. 2: Radiography showed well-defined radiopaque mass with fine radiating periphery and surrounded by thick radiolucent band in the left mandibular region

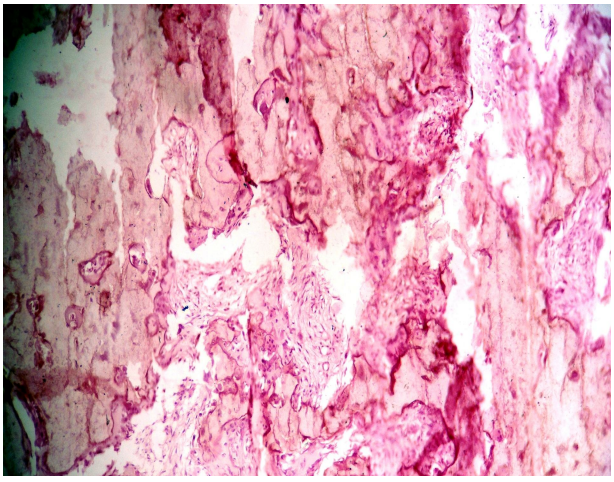

Fig. 3: Section showed loose connective tissue containing strands and islands of odontogenic epithelium (H&E; x100)

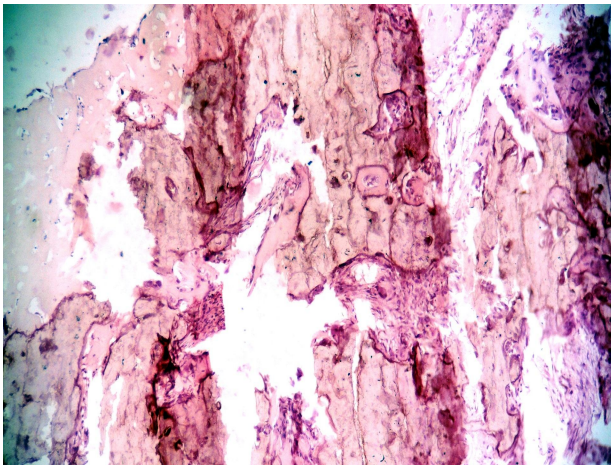

Fig. 4: Section shows calcified structures which does not resemble the normal histological pattern of arrangement of dental tissues (H&E; x400)

Discussion

The word "odontoma" was first introduced by Paul Broca in 1867[1]. Compiex Odontomas are painless, expanding and slow-growing lesions. It rarely presents with pain and inflammation. It constitutes 5-30% of all odontogenoc tumours and is rare compared to other variants[5]. Compiex odontomas rarely erupts in the oral cavity and commonly seen in the older population.

Its occurrence in the younger age could be due to bone sequestration / remodeling the jaw bones [2]. Complex odontoma eruption in the oral cavity differs from routine tooth eruption by the absence of periodontal ligament. They are usually asymptomatic and patient usually presents with complaints of malformation, impaction, delayed eruption, malposition, and cyst formation, and displacement, resorption of the adjacent teeth or with expansion of the cortical plate. Patient symptoms include numbness of the lower lip, frontal headaches, swelling of the affected areas and facial asymmetry [2].

Various classification of odontoma has been adopted. In 2005, WHO classified odontomas as compound and complex. Based on the location it has been classified as central odontoma (present inside the bone), Peripheral odontoma (present inside the soft tissue covering the tooth bearing portions of the jaw and based on clinical presentation as erupted odontoma. The other classification of odontomes is Thoma and Goldman classification [1].

1. *Geminated Composite Odontomes*: two or more, more or less well developed teeth fused together.
2. *Compound Composite Odontomes:* made up of more or less rudimentary teeth.
3. *Complex Composite Odontomes*: calcified structure, which bears no great resemblance to the normal anatomical arrangement of dental tissues.
4. *Dialated Odontomes*: the crown or root part of tooth shows marked enlargement.

Literatures reveal that complex odontomes can be associated with infections, inflammations and genetic hereditary anomalies like Gardner's syndrome and Hermann's syndrome and also associated pigmentation have been reported in the literature [2].

Radiologically, the diagnosis of complex odontomes depends on the stage of development and degree of mineralization. The first stage shows radiolucency due to lack of calcification and the intermediate stage characterized by partial calcification. The third stage of the lesion reveal radio-opaque with masses of the dental hard tissue surrounded by thin radiolucent zone [6].

In our case the patient showed radiopaque shadows of dental hard tissues with radiolucent zone surrounding the lesion and absence of cortication at the superior aspect of the lesion reveals that the complex odontoma is totally matured and lies in the third stage and thus erupting in the oral cavity.

Complex odontoma (CO) should be differentiated from calcifying ossifying fibroma (C-OF), periapical cemento-osseous dysplasia (PCOD), ameloblastic fibro-odontoma, odonto-ameloblastoma, hypercementosis, condensing osteitis. Odontoma is differentiated from cement-ossifying fibromas as most of the complex odontoma are associated with unerupted molar tooth and the property of being more radio-opaque than fibromas [7].

The other differential diagnosis is PCOD which closely mimcs complex odontoma (CO) on histopathology. But the age predilection of PCOD is more than 30years and its placement in the deep alveolar bone in contrast to CO occurs much in younger age group < 20years and extends high into the alveolus towards the crest of the ridge [8].

In ameloblastic fibro-odontoma present as multiple hard tissues and with greater soft tissue component whereas CO present as solitary hard tissue mass with disorganized tissue in the centre of the lesion.

Odonto- ameloblastoma is an extremely rare lesion which includes simultaneous occurance of ameloblastoma and CO [7].

The treatment of CO includes conservative surgical enucleation under general anaesthesia with correction of facial asymmetry.

Here in our case an unusually large size of the lesion located in the right posterior mandible region which rarely erupts in the oral cavity as most of the lesions are located intra-bony [8]. To the best of our knowledge there are very few cases of CO with unusually large size erupting in the oral cavity causing cortical expansion with facial asymmetry, ulceration and infection.

Hence any patient with with history of delayed permanent tooth eruption/ temporary tooth displacement without history of previous trauma should undergo radiography.

Conclusion

As complex odontomas (CO) are asymptomatic and incidentally diagnosed on radiography, it is very

essential to keep CO as one of the differential diagnosis in evaluating the patient. The patient with delayed tooth eruption or temporary tooth displacement should undergo radiography and carefully be evaluated. It is also important to know the clinical and histopathological feature of CO to differentiate from other diagnosis so that early and accurate diagnosis is done to ensure better prognosis and prevent expensive overtreatment of the patient.

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