



ERUPTED COMPLEX ODONTOMA: AN UNUSUAL PRESENTATION

Dental Science

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ABSTRACT

Odontomas are the most common non aggressive odontogenic tumors of the jaws .They are usually asymptomatic and are diagnosed routinely on radiological examination. According to WHO classification (2005) two types of odontomas are found: complex odontomas and compound odontomas, the latter is more common than the former. The eruption of odontomas in the oral cavity is infrequent very rare occurrence and few cases are reported in the literature. Thus this article focuses on an erupted complex odontoma associated with impacted third molar which adds to the previously reported cases in the literature.

KEYWORDS

Complex odontoma, erupted, impacted third molar.

INTRODUCTION:

Broca first coined the term odontoma in 1866.¹ According to 2005 WHO classification of odontogenic tumors, there are two types of odontomas ,composite and complex.²Odontomas are hamartomas and account for 22 % of odontogenic tumors³They are the most common benign odontogenic tumors of epithelial and mesenchymal origin.⁴The incidence of compound odontoma ranges between 9 and 37 % and complex odontome between 5 and 30%.⁵ Eruption of odontomes in the oral cavity is rare and complex odontomes are less common as compared to compound odontomes .Here we report a case of complex odontome which erupted in the oral cavity in the right mandibular third molar region .The aim of the article is to bring to light the unusual eruption of odontome in the oral cavity and adding it to the existing literature .

CASE – REPORT:

A 23 year old male patient reported to the MGV'S KBH Dental College and Hospital, Nashik with the chief complaint of pain in lower right posterior region since 3-4 months. The pain aggravated on mastication. Intra oral examination revealed a yellowish irregular solid mass resembling calculus.



Fig.1 Intraoral Photograph showing bony hard yellowish mass

The right mandibular third molar was missing. On palpation the solid mass appeared to be hard with tenderness in the region of the right mandible associated with the lesion. OPG revealed an irregular mass of calcified material surrounded by a narrow radiolucent band with smooth outer periphery in the region of the right body.



Fig.2 OPG showing mixed radiopaque and radiolucent lesion

CBCT examination revealed the extent of the lesion to be 13.43 mm antero-posteriorly, 22.31mm bucco-lingually and 14.43mm superior-inferiorly. A-3D CBCT showed an irregular radiopaque mass surrounded by a radiolucent band in the right mandibular region extending antero-posteriorly from distal of 47 to mesial of 48. Horizontally impacted 48 was seen. Routine blood investigations revealed no abnormal findings and a biopsy was advised. Based on the clinical and radiologic findings, a diagnosis of horizontally impacted 48 associated with odontome was made and the differential diagnosis that were considered included complex odontoma, cemento- ossifying fibroma, cemento-osseous dysplasia and ameloblastic fibro – odontoma. Patient was then referred to the Department of Oral Surgery for surgical treatment. The lesion was excised and surgical removal of horizontally impacted 48 was done. The lesion came out in pieces and was then subjected to histopathological examination.



(a) and (b) Pre – operative photographs

(c) Excised odontome



(d) Extracted third molar



(e) post-operative photograph

Fig 3. (a) And (b) Pre-operative photograph (c) Excised odontome (d) Extracted third molar (e) Post –operative photograph

On gross examination multiple bits of specimen were obtained, out of which three were hard tissue bits including the horizontally impacted 48. Ground section and decalcification of hard tissue bits was performed. The histopathological examination of ground section revealed disorganized arrangement of hard tissues such as enamel and dentin. Enamel showed irregular arrangement of enamel rods and enamel lamellae were also noted.



Fig. 4 Ground section of complex odontome showing haphazardly arranged hard tissues (10X)

Dentinal tubules were also noted with entrapped pulp spaces. Decalcified section showed multiple areas of tubular dentin, enamel spaces arranged haphazardly and pulp tissue. Histopathological examination of soft tissue revealed dense chronic inflammation, quiescent odontogenic rests, dense collagen fibres and no cystic lining was evident. A final diagnosis of complex odontome and hyperplastic follicle associated with 48 was made.

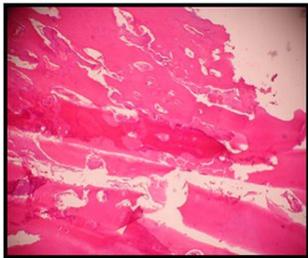


Fig. 5 Decalcified section shows multiple areas of dentin, enamel spaces and connective tissue (H and E, 10X)

DISCUSSION:

Complex odontomas are slow growing, expanding and painless lesions and are associated with pain and inflammation in rare cases. The frequency of complex odontomas varies between 5% and 30% among odontogenic tumors and are rare variants as compared to other odontogenic lesions. Complex odontomas occur at any age most commonly before the age of 30 with peak incidence in second decade and males are commonly affected than females with a ratio of 1.5:1 to 1.6:1. Complex odontomas are mostly seen in the posterior mandible. Similarly in the present case the lesion was present in the posterior mandible and in a 23 year old male patient.⁶ Odontomas refers to any tumor of odontogenic origin in which epithelial and mesenchymal cells exhibit complete differentiation with result that functional ameloblasts and odontoblasts form enamel and dentin.⁵ Complex odontomas may be associated with malformation, impaction, delayed eruption, malposition, cyst formation and displacement of teeth.⁷ In our case, an impacted tooth was seen to be associated with the lesion. The first case of erupted odontoma was described in 1980 by Rumel et al.⁸ Clinically three types of odontomas have been recognized in literature. Central (intra- osseous) odontoma, peripheral (extra-osseous or soft tissue) and erupted odontoma. Our case report is unique as we present the case of an erupted odontoma which is a rare intra-osseous lesion and very few case reports are reported till date. The mechanism of odontoma eruption appears to be different from that of a tooth since there is no formation of root and there is lack of periodontal ligament around odontoma.⁸ As root formation in odontoma does not follow the pattern of normal odontogenesis, eruption of odontoma is attributable to intrinsic enlargement of the lesion, leading to resorption of overlying bone and hence its eruption into the oral cavity.³ Erupted odontomas are seen most often in older people as a result of resorption of edentulous part of alveolar process and also may be possible due to reactive growth of capsule. Eruption at young age may occur due to bone remodelling that might have resulted from presence of dental follicle.⁹ In our case, eruption of odontoma was seen in young age. These are usually asymptomatic lesions but sometimes their eruption in oral cavity may give rise to pain, inflammation, infection.¹⁰ Similarly pain and inflammation was present in affected area in our case. Radiographically, the compound odontoma appears as a collection of tooth like structures of varying size and shape surrounded by a narrow

radiolucent zone whereas a complex odontoma appears as a calcified mass which is also surrounded by a narrow radiolucent rim.¹¹ Similar findings were present in our case report in which lesion appears to be surrounded by a narrow radiolucent rim. Microscopically, complex odontoma consists of disordered arrangement of odontogenic tissues. Cementum like substances are often admixed with dentinoid structures. Small spaces with pulp tissue, enamel matrix and epithelial remnants may be observed within calcified mineralized masses of dentin.⁶ Dentin encloses hollow circular structures that contain mature enamel. The spaces may contain small amounts of enamel matrix or immature enamel.¹¹ The connective tissue capsule around the odontoma is similar in all respects to the follicle surrounding a normal tooth.⁵ Conservative surgical excision is the treatment of choice of complex odontoma.

CONCLUSION

Complex odontomas are less common compared to compound odontomas and the eruption of odontomas in the oral cavity are unusual and rare occurrences. Although odontomas are associated commonly with impacted third molars, the eruption of odontomas associated with the same are rare occurrences. Thus the aim of this case report is to carefully diagnose the lesion and to avoid misdiagnosing it as other lesions. Diagnosis should be done as soon as possible following conservative surgical approach. The prognosis is always good since these tumors do not tend to recur.

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