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Case Report

Cystic Complex Odontoma - A Case Report

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Abstract

A complex odontoma is a malformation in which the various odontogenic tissues are sorted in a haphazard arrangement and is generally characterized by normal histodifferentiation and abnormal morphodifferentiation. It contains many disordered tooth like structures and hence may have little or no resemblance to normal tooth form. Nearly all lesions are discovered accidently on radiographic examinations since it is usually asymptomatic. A case of complex odontoma associated with a swelling was reported.

Keywords: *Odontoma; Complex Odontoma; Compound; Infected; Erupting; Impacted Tooth*

Introduction

The term odontoma or odontome firstly described by Paul Broca in 1867 was originally used as a general descriptive for any tumor of odontogenic origin. However, owing to their composition and behavior, odontomas have become known as hamartomatous lesions or malformations rather than true neoplasms; the epithelial and the ectomesenchymal tissues along with their respective cells may appear normal, but they seem to have a deficit in the structural arrangement [1]. On the basis of gross, radiographic and microscopic features, two types of odontoma are recognized: the compound and the complex [2]. Compound odontoma comprises of odontogenic tissues which are laid down in a normal relationship resulting in structures that resemble the normal tooth form. In Complex odontomas, the hard tissues are well formed but are less well organized and hence tooth-like structures are not formed.

Complex odontomas are painless, slow growing and expanding lesions that usually occur before the age of 30 with a peak in the second decade of life. Most of the odontomas are associated with pathologic changes such as malpositioning, resorption of adjacent teeth, malformation, impaction, cyst formation or displacement and delayed eruption [1]. Both kinds of odontomas are generally present within the jaw bones but few odontomas are peripheral developing [3]. Some are reported to be found in the maxillary sinus or subcondylar regions [4]. In extremely rare instances they may seem to erupt into the oral cavity [2].

Case Report

A 65 year old female patient presented with a slow growing swelling on the left middle-third of the face since one year. The medical and family histories were non-contributary. She gives a history of extraction in the maxillary left molar region one and a half year back. On extraoral examination, a swelling was seen in the left middle-third of the face (Figure 1A) extending antero-posteriorly from the left ala

of the nose to 1 cm beneath the pre-auricular region and super-inferiorly from the infraorbital ridge till the corner of the lip measuring 4.5 * 5 cm. On palpation, the swelling is bony hard and tender without any local rise in temperature. On intraoral examination, a swelling was seen extending from the left maxillary second premolar to the left maxillary second molar measuring 1 * 2.5 cm along with vestibular obliteration (Figure 1C). On palpation swelling was bony hard and tender with buccal cortical expansion. A provisional diagnosis of dentigerous cyst was made. An intra-oral periapical radiograph (Figure 1D) revealed a dense radio-opaque mass lined by a thin radiolucent halo extending from the left maxillary first premolar to the left maxillary second molar. Occlusal radiograph showed buccal lingual cortical expansion from the left maxillary first premolar to the left maxillary second molar with destruction of bone in the middle and a rotated left maxillary second premolar was also seen. Orthopantomograph (Figure 2) showed dense radio-opaque mass surrounded by a thin halo extending from the left maxillary first premolar to the left maxillary second molar beneath which a tooth-like structure was present suggestive of root stumps. Histological examination showed dental tissue constituting irregular dentin mass and multiple hallow space with pulp tissue and enamel matrix (Figure 3).

Figure 1: *1A- Shows a diffuse swelling on left middle third of the face, 1B- Shows a mild asymmetry on the left side in comparison to the right side, 1C- Intraoral picture shows a swelling on upper left posterior region with the evidence of vestibular obliteration, 1D- Intraoral periapical radiograph shows a dense radio-opaque mass lined by a thin radiolucent halo extending from left maxillary first premolar to left maxillary second molar.*

Figure 2: *Orthopantamograph shows a dense radio-opaque mass surrounded by a thin halo extending from the left maxillary first premolar to left maxillary second molar.*

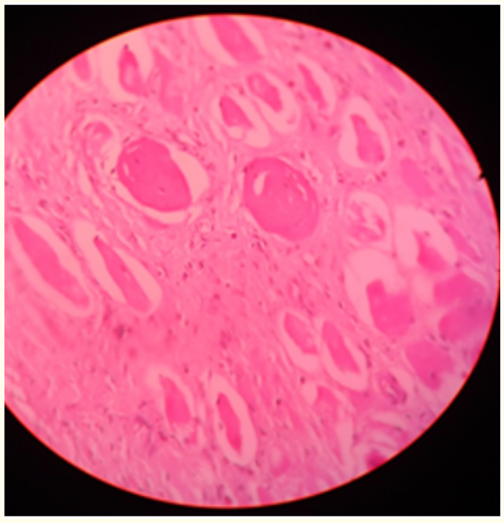

Figure 3: *Histopathology picture shows dental tissue constituting irregular dentin mass and multiple hallow space with pulp tissue and enamel matrix.*

Taking into account the clinical, radiographical and histopathological presentations a final diagnosis of complex odontome was determined and referred to the department of oral and maxillofacial surgery for surgical evaluation.

Discussion

The etiology of complex odontome is undiscovered but several hypotheses say that it could be caused by infection, genetic mutation, local trauma and family history. Postnatal interference or inheritance from a mutant gene along with the genetic control of tooth development is also one of the proposed causes [5].

Complex odontome tend to occur in the posterior regions of the mandible but differences exist in the writings regarding their prevalence [1]. It shows slight predominance in females and the male to female ratio of 8:12 has been reported [5]. It usually occurs at any age, but 84% of the cases occur before the age of 30 and almost less than 11% are found in the patients over 40 years of age [1]. Usually 10 - 44% of complex odontomas are associated with unerupted teeth and around 74% correspond to delayed eruption of at least one permanent tooth [5].

Although they are usually asymptomatic and often detected on routine radiographs, clinical indicators of odontoma may include retention of deciduous teeth, non-eruption of permanent teeth, expansion of the cortical bone and tooth displacement. Other symptoms include paresthesia of the lower lip, headache in the frontal area of the skull and swelling in the affected area [6].

The radiological appearance depends on their stage of development and degree of mineralization. Due to lack of calcification, the first stage is marked by radiolucency. The intermediate stage shows partial calcification and in the third stage the lesion usually appears radiopaque with structureless masses of dental hard tissue surrounded by a thin radiolucent zone which relates to the connective capsule histologically [5].

In our case, the lesion is found distal to 24 and missing 25, 26 and 28. The radiolucencies found within the lesion may very well correlate with the pulp like soft tissue seen histologically and we consider the present lesion to not be completely matured as in the intermediate stage.

The process behind the eruption times of odontomas in the oral cavity remains unclear. It appears to be different from tooth eruption because of the lack of periodontal ligament in odontoma. Its increasing size may lead to the sequestration of the overlying bone even though there is no root formation seen the odontoma cases [7]. Resorption of the edentulous part of the alveolar process is most likely seen in older individuals and it is possible for reactive growth of the capsule to occur [8]. Bony remodeling of the jaws could contribute to this case. The presence of dental follicles which result in bone remodeling could be a cause for the eruption of odontomas at a young age [7].

The morphology of the tooth, its position, location in the jaw and the available space in the dental arch should be examined radiographically, which will determine the treatment.

Conclusion

Complex odontomas are irregular odontogenic tumors which look like a mineralized mass that is composed of enamel, dentin and cementum. They are not associated with any systemic disease and are usually discovered on radiographic examination since they are asymptomatic in nature. There could be cases of facial asymmetry due to the cortical expansion caused by large lesions. An awareness of the clinical, radiographical and pathological findings of such lesions will in result in early treatment and better prognosis.

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