CASE REPORT

Compound odontoma in a nine-years-old boy associated with impacted permanent central and lateral incisor — a case report

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Abstract

Odontomas are one of the most common tumours of odontogenic origin. They are usually asymptomatic but may be associated with retained primary teeth or missing permanent teeth. Though the exact aetiology is unknown, the postulated causes include trauma, infection, inheritance and genetic mutation. Early diagnosis and management will result in fewer complications. Conservative surgical excision is the treatment of choice. This case report presents a treated case of compound odontoma associated with delayed eruption of the permanent central incisor in a nine-years-old boy.

Keywords: Compound Odontoma.

DOI: https://doi.org/10.47391/JPMA.877

Introduction

Odontomas may be defined as "tumours formed by the overgrowth of transitory or complete dental tissues."[1] Odontomas are a common type of benign odontogenic tumours. They are considered to be hamartomas rather than a true neoplasm.[2] They arise from the differentiated epithelium and mesenchymal cells that give rise to ameloblasts and odontoblasts.[3] These tumours are mainly formed from enamel and dentine and contain variable amounts of cementum and pulp tissue.[2] Odontomas have been classified into compound odontoma and complex odontoma. In complex odontomas, dental tissues are arranged in a disorderly manner while in compound odontomas, the tissues are organised in a similar pattern as in the tooth.[4] Approximately 10 percent of all odontogenic tumours of the jaws are compound odontomas.[5] They are most commonly found in anterior maxilla and resemble tooth-like structures, while complex odontomas are found in posterior mandible.[6] According to Hitchin,[7] odontomas originate because of an inherited genetic mutation or any interference with the genetic control of the development of the teeth. He also suggested that the persistence of remnants of lamina between the tooth germs may also be an aetiological factor. Odontomas are managed by conservative surgical excision.[8] Prognosis after treatment is very favourable, with rare chances of recurrence.[9]

Case Report

A nine-years-old boy presented to the Department of Paediatric Dentistry, PIMS, Islamabad, with the chief complaint of non-erupting upper front tooth and associated swelling in the anterior upper jaw (Figure-1). His permanent maxillary left central incisor erupted two years ago. Medical history of the child was not significant. There was no history of fall or trauma to the jaw. On clinical examination, his maxillary right permanent central and lateral incisors were absent and a firm, non-tender swelling was present labially with protruding white spicules. A periapical radiograph and OPG was taken which revealed the presence of multiple, radiopaque masses confined to the area of maxillary permanent

Figure-1: Clinical picture of 9-year-old boy presenting with complaint of delayed eruption and swelling.

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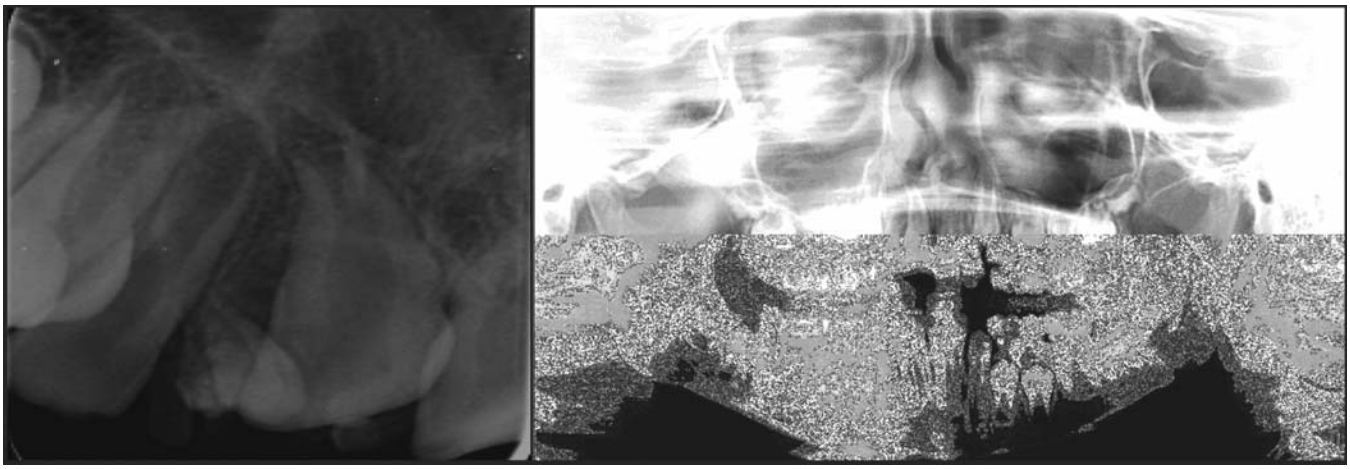

Figure-2: (OPG distorted in figure) Periapical radiograph and OPG showing multiple calcified masses in anterior maxilla.

Figure-3: Surgical exposure of anterior maxillary region for enucleation of odontoma.

central and lateral incisors (Figure-2). The permanent incisors were present but their eruption was impeded by these calcific structures. A provisional diagnosis of an odontoma was made. Surgical enucleation was planned. Parents were educated about the condition and the treatment plan. Informed consent was obtained. After local anaesthesia, a crestal incision from the mesial of maxillary permanent left central incisor to the mesial of maxillary permanent right lateral incisor was made and a full thickness mucoperiosteal flap was reflected (Figuer-3.). Multiple, tooth-like small odontoids were observed which confirmed the clinical diagnosis of compound odontoma. About seven odontoids were excised ranging from 3 to 10mm (Figure-4). Careful curettage was performed to ensure that no remnants were left and the area was thoroughly irrigated with 0.9% saline. After achieving haemostasis, the flap was sutured back into its position. The tooth-like masses were submitted for histopathological examination. The decalcified section showed the presence of dentinal tubules and pulp space. Pulpal tissue was absent (Figure-5). The diagnosis of compound odontoma was confirmed.

On the seventh post-op day, the sutures were removed. Healing was uneventful with no complaint of pain or swelling. The patient was scheduled for follow-up to observe the eruption of permanent incisors. Two months after the surgery, partial eruption of the impacted permanent central incisor was observed (Figure-6). The tooth appeared to be slightly rotated. The patient is under follow-up to observe the eruption of central and lateral

Figure-4: Seven odontoids excised measuring between 3 to 10 mm.

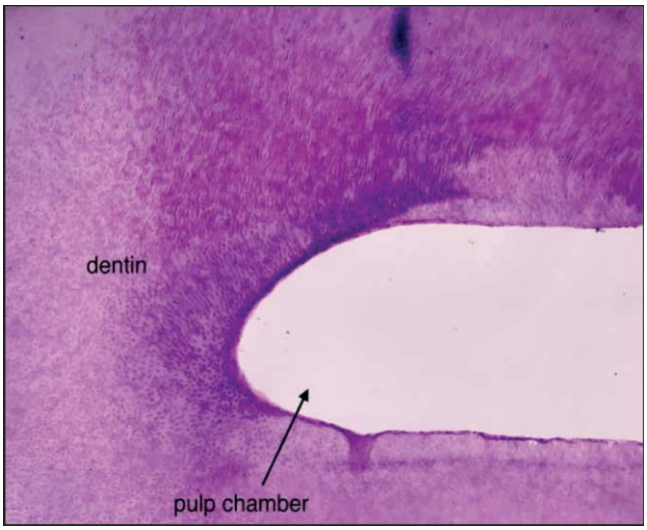

Figure-5: Decalcified sections showing dentinal tubules and pulp space.

Figure-6: Two-month follow-up clinical picture showing eruption of permanent right central incisor.

incisors. Option of orthodontic treatment (2x4 appliance) was discussed with the parents to make space for lateral incisor if no eruption is seen in the next 3-6 months.

Discussion

Odontoma is a dental anomaly that mostly goes unrecognised unless associated with symptoms such as delayed eruption or is incidentally detected on radiographic examination.[10] Compound odontomas are more common than complex odontomas.[11] They are usually found in the anterior region of the maxilla (61%), while complex odontomas have a predilection for mandibular molar region.[12] In the current case, compound odontoma in the anterior maxilla was encountered in a nine-years-old patient. The patient presented with swelling and delayed eruption of the permanent tooth. Mostly odontoids are asymptomatic but may impede the eruption of permanent teeth.[13] The same was seen in the current case in which the odontoids were impeding the eruption of maxillary permanent right central incisor. Odontomas can also manifest as a part of some syndromes such as Gardeners syndrome, Hermann syndrome, basal cell nevus syndrome, etc.[14] but the current case had no such association.

In a study by Lee & Park,[15] it was found that compound odontoma usually consists of 4 to 21 odontoids and the size varies between 5 to 30 mm. In this patient, almost seven odontoids were found. Odontomas are easily enucleated,[8] so conservative surgical excision was planned for this patient.

The World Health Organisation classifies odontoma under 'benign tumours containing odontogenic epithelium with odontogenic ectomesenchyme, with or without dental hard tissue formation'.[4] Histologically, odontomas comprise varying amount of enamel, dentin, pulp and cementum.[14] Similar findings were observed in the present case in which enamel and dentine was organised around the pulp space as in the teeth.

It has been found that the removal of the odontoma mass results in the spontaneous eruption of the unerupted tooth in 45% of the cases. The determining factors include the morphology of the tooth, its location in the jaw, age of the patient and the space available in the dental arch.[16]

Conclusion

As odontomas are one of the most common odontogenic tumours of the jaw so its early diagnosis and management is very important. The presented case demonstrated the successful management of typical presentation of a compound odontoma. Routine radiographs are of utmost importance in the case of delayed eruption, as their early diagnosis might overlook the possible complications.

Disclaimer: None to declare.

Conflict of Interest: None to declare.

Funding Sources: None to declare.

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