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A Case Report on Surgical Removal of Odontoma

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ABSTRACT: Odontomas are the most prevailing type of odontogenic tumors. They constitute benign calcified odontogenic tumors.They are classified into complex and compound odontoma. This paper illustrates a case of surgical removal of compound odontoma.

A 13 year old male child came with the complaint of asymptomatic hard growth in left maxillary anterior region associatedwith impacted left permanentlateral incisor. Radiograph showed an ill formed calcified masssurrounded by a thin radiolucent rim and a radiodensity comparable to tooth structure suggestive of odontoma.

Surgical removal of odontoma was done under local anaesthesia. The lesion was accessed through intraoral approach and surgical excision of odontoma was done to enable the eruption of retained permanent lateral incisor.

I. INTRODUCTION

Paul Broca coined the word odontome in 1867 to describe tumours formed by the proliferation of complete or transient dental tissues.[1] Odontomas are developmental abnormalities caused by the proliferation of completely differentiated epithelial and mesenchymal cells forming ameloblasts and odontoblasts. Enamel and dentin make up the majority of these tumours, but they can also contain cement and pulp tissue in varying proportions.[2]

These odontogenic tumours might be detected anywhere in the dental arches. The vast majority of odontomas in the anteriorregion of the maxilla are compound, whereas the vast majority of odontomas in the posterior region, particularly in the mandible, are complex.[2,3]

In 2005, the World Health Organization classified odontomas as complex odontoma, calcified irregular mass not like teeth and compound odontoma, calcified irregular mass resembling teeth.[4]

Furthermore, odontomas are classified as hamartomatous malformations since they do not grow continuously or infiltrate into the surrounding tissues. They're frequently linked to impacted or retained teeth. The odontoma tissue of origin is thought to be the extraneous bud of the dental lamina.[5,6]

II. CASE DESCRIPTION

A 13-year-oldboy reported to the Department of Pediatrics and Preventive Dentistry at Haldia Institute of Dental Sciences and Research, Haldia, seeking treatment for his unerupted maxillary permanent left lateral incisor. He had no relevant medical and family history. Onintraoral examination, it was found that the maxillary leftlateral incisor was clinically absent, while the contralateral tooth had already erupted and was normally positioned in the arch [Figure 1].Intraoral swelling was also found to be present on the alveolar ridge distal to maxillary left central incisor. [Figure 2].On palpation, the mass was firm and non tender in consistency along with buccal cortical bone expansion

Fig 1 Front facial profile

Fig 2 Side facial profile

Fig 3 Intraoral swelling in upper left anterior segment

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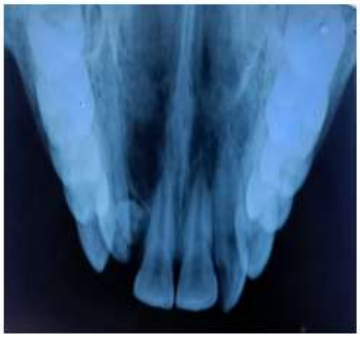

Fig 4 Upper occlusal x - ray

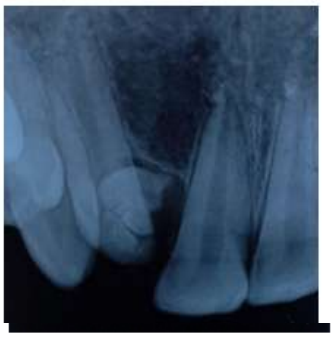

Fig 5 IOPA x - ray

Fig 6Surgical exposure of calcified mass

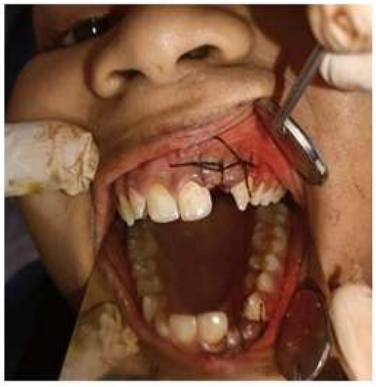

Fig 7 Suture done after surgical removal of odontoma

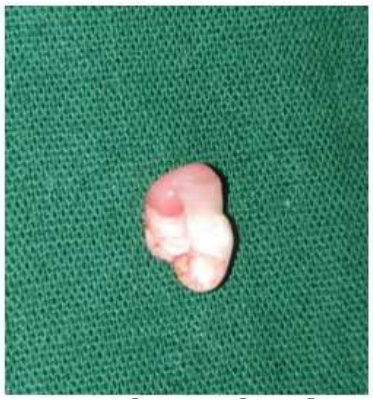

Fig 8 Odontoma

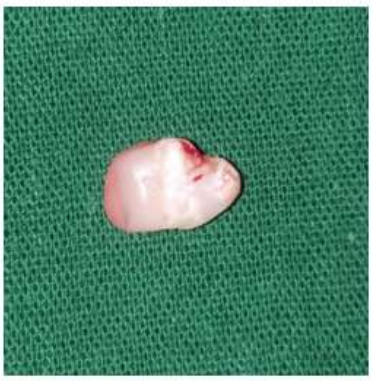

Fig 9 Odontoma

Occlusal and periapical radiographic findings revealed a radioopaque calcified structure located palatally to the crown of impacted lateral incisor. A thin radiolucent rim is seen to surround the radioopacity suggestive of compound odontoma like lesion.

Surgical removal of odontoma was done under local anesthesia. A mucoperiosteal flap was raised after giving a horizontal incision on the gingiva and two oblique vertical releasing incisions extending to the buccal vestibule. After elevation of the flap, crown of left impacted lateral incisor and the odontoma was exposed. Simple surgical extraction of the odontoma was done with upper anterior dental extraction forceps. The flap was repositioned after irrigation of the socket wound with 5% povidone iodine followed by suturing with 3.0 black silk suture.

Patient was advised soft diet on the day of surgery along with antibiotic regimen of Co-amoxyclav375mg twice daily for 5 days. He was given paracetamol 250 mg twice daily for 2 days and then as needed.Suture removal was done after 7 days. The patient did not complain of any postoperative complications. The clinical and radiographic diagnosis of compound odontoma were confirmed by the histopathological analysis.

III. DISCUSSION

Odontomas are prevalent odontogenic lesions that are usually asymptomatic. They mostly result in tooth impaction or delayed eruption.[2,7]Possible causes include mutant genes, odontoblastic hyperactivity, inflammatory and infectious processes, and primary dentition injuries. Gardner's syndrome and Hermann's syndrome are examples of genetic abnormalities that can cause odontomas.[3] A compound or complex odontoma is formed when remnants of the dental lamina persists during the developing stages.[8]

The odontoma was found to be presentin the maxillary anterior region in this paediatric example,which many researchers believe is the most common location.[3,8]There was minimal expansion of the cortical bone caused by the odontoma. The lesion presented radiographically as a radioopaque calcified structure surrounded by athin radiolucent rim.[9]

Radiographs can also be used to determine the stages of development of odontoma based on

the degree of calcification. The lesion appears radiolucent in the early stages due to the lack of calcification; the intermediate stage is characterised by incomplete calcification; and the ultimate stage is characterised by the odontoma appearing radiopaque surrounded by a radiolucent halo.[10,11]

Odontomas are well capsulated lesions with low risk of recurrence. Hence, they are best treated with conservative surgical resection.Despite the fact that it is not aggressive and has a limited growth capacity, early detection is critical in order to achieve harmony in the development of the dental arch and occlusion, including aesthetics.[12]

IV. CONCLUSION

Odontomas aretumors of odontogenic origin. They are benign and slow-growing with nonaggressive behaviour. They are commonly associated with unerupted teeth and are often detected on routine radiographic examination as an incidental finding.Timely detection and surgical intervention can help avert the probable consequencesof cystic alterations, bone growth and delayed eruption associated with it.

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