

Dentigerous Cyst associated with Palatal Impacted Premolar: A Case Report

Abstract

Dentigerous cyst is a most commonly seen benign odontogenic cyst associated with crowns of impacted permanent teeth. Crowns of impacted permanent teeth associated with dentigerous cyst are most oftenly seen displaced into ectopic position which prevents its normal eruption and also leads to resorptive changes in nearby tooth present. There is a long standing relationship shared by impacted tooth and orthodontist where the oral surgeon plays a decisive role towards the success of orthodontic treatment. Most commonly seen impacted teeth are third molar and canine, their effects and management have been discussed in detail in many literatures, impacted premolars are less commonly encountered in literature, especially maxillary premolars.

This paper describes a case report of dentigerous cyst in a 13 year old boy, associated with impacted maxillary right second premolar, which appeared as bulge in palate but was not palpable. Histological examination revealed a cyst with epithelial lining resembling reduced enamel epithelium.

Key Words

Dentigerous cyst; impacted; maxillary premolar

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INTRODUCTION

Dentigerous cyst is the most common type of odontogenic cyst seen associated with crowns of impacted permanent teeth. It accounts for more than 24% of jaw cysts, mainly involving crown of impacted mandibular third molar, followed by maxillary canines, mandibular premolars and then maxillary premolars.^[1] It is mostly seen in second to third decade of life. An impacted tooth by definition is one that is embedded in the alveolus so that its eruption is prevented or where the tooth is locked in position by bone or the adjacent tooth/teeth.^[2] The prevalence of impacted teeth vary according to age. The prevalence range from 0.2-0.3% for mandibular premolars. In frequency of occurrence of impaction it has been seen that premolars come after third permanent molars and canine. In maxilla impaction of premolars and canine is seen mostly towards palatal side as compared to buccal side, while in mandible impacted premolars is seen mostly on lingual side.^[3] Literature in support of impacted premolars is not extensive. The position of palatally impacted premolar can vary from very high in palatal vault to close to the nasal and sinus floor.

Such positioning of impacted premolar sometimes makes it difficult to detect its presence in intra oral periapical radiograph.^[4] Here we are presenting a case report of a dentigerous cyst in a 13 year old boy, associated with impacted maxillary right second premolar, which appeared as bulge in palate and was palpable.

CASE REPORT

A 13- year old boy presented to the department of oral and maxillofacial surgery for impacted maxillary premolar on right side. He was referred to the department from department of orthodontics. The clinical examination showed increase in over jet with moderate mandibular and maxillary anterior crowding. His right side permanent second premolar was missing. On examination a bulge was seen on the right side of the palate in between first premolar and first molar. On palpation teeth was not palpable (Fig. 1). The orthopantomogram and lateral cephalometric view showed that missing right maxillary premolar was impacted with crown facing downward and root very high in the palatal vault (Fig. 2a & Fig. 2b). A crevicular incision was placed on the palatal side, extending from the distal



Fig. 1: Bulge on the Palate (right side)



Fig. 2b: Lateral Cephalometric view



Fig. 3b: Removal of impacted premolar



Fig. 4b: Closure of flap

papilla of the first molar on right side to mesial side of canine of right side. A full thickness mucoperiosteal flap was reflected and raised (Fig. 3a). After reflecting the flap the tooth was exposed. Bone overlying the tooth was shaved using round bur. Buccal and palatal cusp of the crown was exposed until the CEJ, using straight bur under continuous irrigation with normal saline. The tooth was elevated using curved warwick james elevator and was extracted out (Fig. 3b). The cyst was enucleated along with extraction of impacted premolar tooth (Fig. 4a) along with cystic lining and

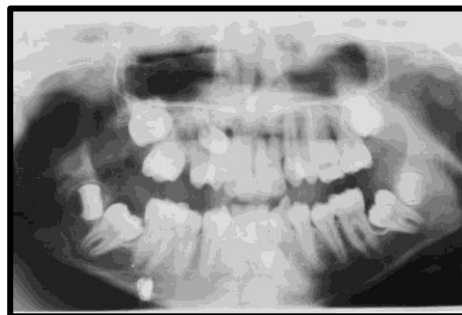


Fig. 2a: Orthopantomogram



Fig. 3a: Exposure



Fig. 4a: Extracted tooth along with cystic lining

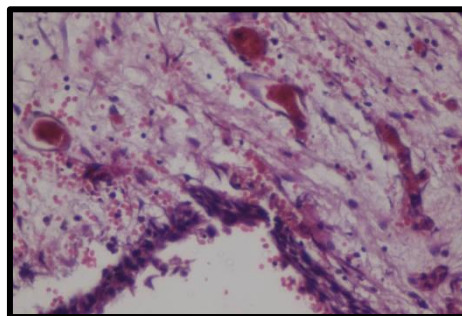


Fig. 5: Histological picture of Dentigerous cyst

closure of flap with 3-0 silk suture (Fig. 4b). Hemorrhage was controlled. Closure was done using 3-0 mersilk suture by interrupted sutures for papilla to papilla closure, along with pressure compression to avoid blood collection in dead space. Pressure was applied using cotton gauze placed over the palate and patient was asked to press with his tongue for approx 30 minute. The macroscopic findings revealed the cystic lining attachments to the cement enamel junction of right maxillary second premolar which is seen in cyst wall. Histopathological examination showed a thin

fibrous cystic mass lined by 2-4 layers of flat epithelial cells resembling reduced enamel epithelium, features suggestive of dentigerous cyst (Fig. 5).

DISCUSSION

The tooth normally erupts into occlusion but sometimes because of some reason like ankylosis, root resorption the tooth is not able to erupt and becomes impacted. Dentigerous is the most common benign odontogenic cyst seen associated with the crowns of impacted permanent tooth and may be the cause of failure of eruption.^[5,6] Treatment options for the management of impacted teeth include observation, intervention, relocation and extraction.^[7] In this case the position of the impacted maxillary second premolar was unfavourable that is no orthodontic treatment of the tooth was possible and also its presence had effect on adjacent tooth structure so extraction of tooth was planned.^[8,9] Choice of appropriate treatment option depends upon the etiological factors, space requirements, degree of impaction, associated pathology and root formation of the impacted premolar.^[8,9] The epithelial lining of the dentigerous cyst often contains focal areas of ortho-keratinized or mixture of mucin secreting ciliated cells. Untreated Dentigerous cyst have potential to develop odontogenic tumors like ameloblastoma, Oral squamous cell carcinoma.^[10] Before planning the surgical procedure it is very important to know the correct position of impacted tooth, for which radiographic technique plays a major role. In case of canine and premolar usually there is more predispositions for palatal position.^[9] To confirm the position two IOPA's are taken according to Clark's rule or tube shift principle. Some times for confirmation occlusal view also can be used.

CONCLUSION

Surgical management of impacted teeth requires correct knowledge of regional anatomy, good manipulation of surrounding soft tissues and correct application of mechanical principles involved in extraction of teeth. The management of impacted teeth also depends upon the age, associated pathologic condition and a good consult with the orthodontist in order to achieve good result by preserving functional teeth. Proper treatment plan is a key to fruitful outcome of surgical case.

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