

# DISTANT IMPACTION OF MANDIBULAR SECOND PREMOLAR: A CASE REPORT

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## SUMMARY

A rare case of distant impaction of mandibular left second premolar in the angle of the mandible below inferior alveolar neurovascular bundle was observed in 35 years old female who reported with the vague pain radiating to different regions. Extraoral submandibular surgical approach was performed for the removal of such a deep impacted premolar. The clinical report, radiological features and its surgical management for the impaction of the tooth is presented in this paper.

## INTRODUCTION

Impacted teeth are those that are prevented from erupting into the dental arch within the expected time by physical barrier in the eruption path, the physical barriers may be adjacent teeth, overlying bone and excessive soft tissue<sup>1,2</sup>. Embedded teeth are individual teeth which are unerupted usually because of lack of eruptive force and that is interchangeable with the term impaction.<sup>1,2</sup> Shafer et al<sup>1</sup> described an uncommon condition of multiple unerupted teeth due to lack of eruptive force which is referred to as 'pseudoanodontia' are associated with conditions like endocrine dysfunction, cleidocranial dysostosis etc.

In the case presented, the phenomenon of impaction remains unclear to explain the distant impaction of mandibular left second premolar situated over the angle of the mandible, below the inferior alveolar neurovascular bundle, where as most mandibular teeth are normally impacted above the neuromuscular bundle.

## CASE REPORT

A 35 years old female patient reported to dental department at Bir Hospital with a complaint of intermittent local and referred pain with trismus. On examination, mandibular left second premolar was missing and other teeth were also absent due to previous extractions and also some intact fillings were observed. On palpation, left side of the angle of the mandible was tender.

On radiographic examination of panoramic view, mandibular left second premolar was found impacted over the angle of the mandible and follicle around the crown of the tooth measuring approximately 2mm which looked like a miniature dentigerous cyst. There was no bone damage & resorption of impacted tooth (Figure A). A diagnosis was made as the impacted second premolar over left side of the angle of the mandible and a decision was made for surgical extraction of the impacted premolar. Patient didn't have any significant

systemic disease and routine examination as well as chest radiograph was normal to undergo an operation under general anaesthesia.

On 1st July 1999, under general anaesthesia; an incision was given over left submandibular area and angle of the mandible was exposed surgically. Then the bulge over the impacted area of the premolar at the angle of the mandible was observed and bony window was made by micromotor using round bur with sufficient irrigation to prevent bone necrosis. The impacted second premolar was totally exposed and removed. After complete haemostasis, the wound was closed in layers with 3/0 vicryl and 5/0 nylon.

Postoperatively the patient tolerated the procedure and was discharged on 4th day of the operation.

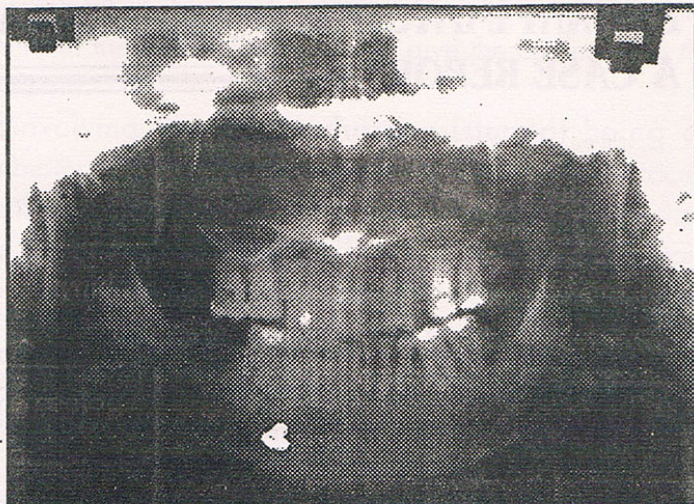
## DISCUSSION

A tooth may be impacted because of inadequate dental arch length resulting crowding<sup>1,2</sup>. Lack of space due to narrowing of dental arch or premature loss of deciduous teeth with subsequent partial closure of the area by adjacent teeth is a common factor in the etiology of partial or complete impacted teeth.<sup>1</sup>

The teeth most frequently impacted are mandibular and maxillary third molars maxillary cuspids, mandibular and maxillary second premolars, and supernumeraries<sup>1,3</sup>. Epidemiological studies show that frequency of impaction varies from 1.7 to 25 percent<sup>4,5</sup>. There is predilection for impaction of teeth in female over male and in maxilla over mandible<sup>3</sup>.

Multiple impacted teeth are rare and are associated with systemic disorders like cretinism, cherubism and cleidocranial dystosis. Only very few case presentation of impaction of multiple teeth is observed in the literature where patient doesn't have any significant systemic diseases<sup>3,6</sup>. In the case presented here, the patient doesn't have any such local and systemic disease.

Most impactions are supported by phenomenon of obstruction theory due to physical barrier. The commonest factor for the impaction is change of position of tooth buds resulting the tooth in wrong direction<sup>1</sup>. The impacted third molar sometimes may be completely



**FIGURE – A :** The orthopantomograph showing a mandibular left second premolar over the angle of the mandible and the radiolucent area around the crown of the impacted tooth simulating a minute dentigerous cyst.

embedded in the ramus of inverted whereby the crown is directed toward lower border of the mandible<sup>1</sup>. In this case the etiology for distant impaction of mandibular premolar is quite unclear but it seems that it has obtained a wrong direction early in the process of tooth development.

If impacted tooth is allowed to remain in situ it may undergo resorption and replaced by normal bone<sup>2</sup>. As impacted teeth is associated with follicular sac either it retain its original size or may form dentigerous cyst.

Dachi and Howell<sup>7</sup> observed in their study that 37 and 15 percent of impacted mandibular and maxillary third molars respectively exhibited an area of radiolucency around the crown in which 10 percent of cases were considered as dentigerous cyst. The diagnosis of the impacted tooth is greater than 3 mm<sup>2</sup>. In the case presented the radiograph shows a radioluscent area around the crown of the impacted teeth, which resembles a minute dentigerous cyst. Odontogenic tumor can arise from odontogenic epithelium contained within the dental follicle and most commonly occurring Odontogenic tumor in this region is ameloblastoma<sup>1,2</sup>.

Although the overall incidence of Odontogenic cyst and tumor around the impacted teeth is not high and remains asymptomatic throughout the life, the removal of the impacted teeth is strongly suggested to prevent the occurrence of odontogenic tumor or cyst.

In the case presented the phenomenon of impaction due to physical barrier remained unclear to explain such a distant impaction below inferior alveolar neurovascular bundle and only predictions regarding the etiological factor for the distant impaction of the tooth has been made. So a further detailed study on theory of impaction is required to have clear concept to understand the mechanism of such impactions.

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