

UNUSUAL IMPACTIONS

5 Case Reports



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Introduction

Impacted teeth are those teeth with a delayed eruption time or that are not expected to erupt completely according to the clinical and radiographic findings¹. Any permanent tooth can become impacted. In literature reported that the incidence of tooth impaction varies from 5.6% to 18.8% of the population.^{9,23}

Impacted teeth were seldom a problem for Neolithic man. Their highly abrasive diet caused attrition of teeth which results in a reduction of mesio-distal distance of the dentition. This allowed mesial migration of teeth and adequate space for the eruption of third molars.⁴ The arrival of processed foods and consequential reduction in masticatory functional demand, the incidence of impacted wisdom teeth has dramatically increased.⁵ Racial and genetic inheritance may play a less significant role.⁶

Impacted mandibular second molars and first molar are relatively rare, but when impacted they are very challenging for orthodontists and oral surgeons.⁷ Many studies have reported on their prevalence, which has ranged from 0.03% to 0.3%.^{8,10} They have a slight predilection for males, and they have been detected more unilaterally than bilaterally.⁸ Some studies reported on bilaterally impacted mandibular second and third molars.^{8,10} The impaction of the first permanent molars is uncommon, with few cases reported¹¹. Sometimes, the buried impacted teeth were displaced and were far from their normal position. Stafne¹² found that the displacement occurred mostly with the premolar, canine, and third molar.

For patients, pain is notably the most common factor responsible for their consultation to the clinician. Despite the fact that pain in relation to impacted wisdom teeth is usually due to pericoronitis, in unerupted teeth pain may be the most evident symptom of an associated destructive pathology.¹³

Abstract

In the present study five cases of unusual impaction are reported impacted 1st molar in edentulous patients and impacted supernumerary teeth along with 3rd molar and impacted 1st, 2nd and 3rd molar along with large size odontoma. Their management is important esthetically and functionally for the patients. The management of impacted wisdom teeth has changed over the past 20 years from removal of non symptomatic third molars to simple observation. A 2005 Cochrane Oral Health Group systematic review found no evidence to support either the prophylactic removal of impacted wisdom teeth or their retention. Thus, the early identification of tooth impaction is of critical interest to researchers.

The impaction of permanent teeth is a relatively common occurrence and can involve any tooth in the dental arch. Their occurrence presents a clinical problem for orthodontists and oral surgeons. The cause, frequency, complications, and surgical operation of impacted teeth are always interesting subjects for study and research. An impacted tooth can result in caries, pulp disease, periapical and periodontal disease, temporomandibular joint disorder, infection of the facial space, root resorption of the adjacent tooth, and even oral and maxillofacial tumor.

Key Words – Impacted teeth, Odontoma, Supernumerary teeth.

Normally the eruption of the first permanent lower molar tooth is 6-7 years, second molar is 11-13 years and third molar is 17-21 years (William et al). as the jaw lengthen the dental lamina grows posteriorly from the istal aspect of second deciduous molar germ as a solid cord of epithelium not connected with the surface. From deep border of this burrowing lamina, buds for the three permanent molars develop in mesio distal sequence, the first molar bud appearing in the 16th week fetus, the second at about one year and the third at five years. Each bud is initiated in the ramus of the lower jaw with progressive resorption of the anterior border of coronoid process they come to occupy the body of the mandible.

From each deciduous tooth germ at its bell stage a lingual successional lamina grows from the the site of continuity between outer and inner epithelium and dental lamina.

Each grows down in the mesenchymal lingual to deciduous tooth and form its end a bud develops for a permanent successor, which becomes surrounded by its own follicle and crypt.

The follicle maintained fibrous continuity with the lamina propria of oral mucosa by the development of teeth and their emergence in to the oral cavity is significance in clinical or surgical practice and in the forensic medicine and archaeology as well. (Miloro 2004, William et al)²⁵



Cases

Case 1. A young male patient of 26 year old came to our department with complain of pain in right mandibular posterior region. On radiographic evaluation we found a radio opaque mass of 2 x 3 cm in size in body region of mandible and horizontally impacted mandibular first, second and third molar in ramus. On this finding we decided for removal of radio opaque mass anterior to impacted teeth. But patient was not willing for extraction of impacted teeth. The odontoma was removed under general anaesthesia by intraoral approach. After one year he again came with chief complain of pus discharge from operated site. Then we decided for removal of impacted teeth. We extracted impacted teeth under general anesthesia with extraoral approach. After extraction patient kept on soft diet for one month avoiding any unexpected fracture of mandible which was weakened by extraction of impacted teeth. Post extraction healing was uneventful.



Fig 1:Pre operative OPG showing impacted 1st ,2nd and 3rd molar along with odontoma .
 Fig 2:OPG after removal of odontoma bony cavity filled with hydroxyapatite
 Fig 3:Extra oral incision for extraction of Molars .

Case 2.

A 60 year old female patient came to our department with chief complain of pus discharge from right posterior region of mandible since last two months. Patient was edentulous .On panoramic radiograph we found impacted mandibular first molars in pus discharge region and mandible was highly atrophic. So we decided for trans alveolar extraction under local anesthesia with all precautions, The tooth was extracted under local anesthesia using intraoral approach without any intraoperative complication. Postoperative healing was uneventful.

Case 3

Another 65 year old female patient came to our department with complain of continuous pus discharge from right posterior region of mandibular edentulous area with respect to mandibular first and second premolars and first molar since last



Figure 1:OPG showing impacted first molar. Figure 2:OPG after extraction.



Figure 3:Intra operative photograph. Figure 4: Extracted tooth.

two months. Patient was given history of extraction with mandibular first and second premolars four year back but didn't give history of extraction of mandibular first molar. On radiological examination we found impacted mandibular first molar in body region of mandible. So we thought that cause of pus discharge was impacted tooth and extraction was done under local anesthesia. Patient got relief after extraction. Till date she was freed of any symptoms.



Figure 1:Pre operative OPG showing impacted first molar .
 Figure 2:Extracted tooth.

Case 4

A 67 yr old lady reported to the department of oral and maxillofacial surgery with the complaint of dull pain in relation to left lower jaw for 3 months . Patient was edentulous , with tenderness over left alveolus , OPG showed impacted first molar , which was extracted under GA . Post operative healing was normal patient was advised for soft diet ,just to prevent any complication, as mandible was atrophic.



Figure 1:OPG showing impacted first molar .
 Figure 2:Extracted tooth.

Case 5

A 60 year old male patient came to our department with chief complain of pain in right posterior region of mandible since one month. On intraoral examination there was severely attrited tender mandibular second molar. On radiological examination there was impacted 3rd molar along with two other impacted supernumerary teeth in ramus region of mandible. As the patient was diabetic and hypertensive, and he was not willing for extraction of any impacted teeth. Mandibular second molar



extracted, he was kept on antibiotic and analgesic for five days and advised for regular follow up to avoid any pathological changes due to impacted teeth. Till the date he was freed of any sign and symptoms.



Figure 1:OPG showing impacted 3rd molar and supernumerary teeth.
Figure2.OPG.

Discussion

The canine tooth was the most frequent non third molar impaction identified followed by premolar and second molars (Ahlqvist&Grondahl 1991,Miloro)Thilander &Myeberg (1973) found a 5.4%prevelence of impacted teeth excluding third molar. The impaction of first molar and incisors are relatively uncommon (Raghoeber et al 1990,1991) . Systemic factors such as cleidocranial dysplasia ,endocrine deficiency , febrile disease . Down syndrome and irradiation other systemic factors or local factors such as prolonged deciduous teeth retention ,malposed tooth germ but not causing arch length deficiency and supernumerary teeth.²⁵

The principle cause of tooth impaction was tooth-size-arch length discrepancies, which was especially common in canine impaction.¹⁴ Jacoby¹⁵ thought that it was valid for most canine impaction, but not for palatal impaction of the maxillary canine. The second and third factors causing tooth impaction are prolonged retention and early loss of the deciduous tooth. They have long been suggested as factors in the etiology of incisor, canine, and second premolar impaction.¹⁵ So, it was very important to maintain a proper inter dental space during clinical treatment. The fourth factor is supernumerary teeth. About 1% to 3% of the population has supernumerary teeth or hyperdontia. More than 90% of supernumerary teeth are found in the maxilla, which usually results in impaction of the permanent maxillary incisors.¹⁶

The fifth factor is tumor. Tumor was often seen in dentigerous cyst, keratocyst, ameloblastic fibroma, and odontoma. Although Shashikiran et al¹⁷ reported a case of a dentigerous cyst associated with lateral incisor that had resulted in inverted impaction of both premolars; cystic formation was often seen with impaction of the third molar. Schmidt- Westhausen et al¹⁸ found nine cases of ameloblastic fibroma associated with teeth impaction. Odontoma could also be detected, usually in the anterior teeth region.^{14,19} Cildir et al¹⁹ reported a compound odontoma that resulted in impaction of both primary and permanent canines. The sixth factor is deformity of the jawbone, such as cleft palate, which also led to impaction of the permanent tooth. These cases were often seen in the maxillary

lateral teeth region. In addition, trauma could be a local factor for impaction of teeth.²⁰ It can lead to developmental disturbance of the permanent dentition.²⁰ Other local factors could contribute to tooth impactions for example, an abnormal position of the tooth buds.¹⁴

X-ray is a favored method to localize an impacted tooth. To provide accurate localization, dental film, panoramic radiography, and even computed tomography have been introduced in the diagnosis and treatment of tooth impaction. The panoramic radiography, which provides information about all the teeth in both arches, and the surrounding structures, is often the initial radiograph.²¹ It is also widely used as the main method and basis for evaluation in epidemic research because of its economic and practical properties. Of importance is that the panoramic radiography cannot provide all the information regarding the impacted teeth, although it is very simple and intuitive. Occasionally, the information from the panoramic radiograph will not coincide with the oral conditions found clinically.

The literature recommends that the removal of third molars (wisdom teeth), like the removal of any other tooth, should be on the basis of evidence obtained from diagnosed pathology or demonstrable need. Song et al stated that "in the absence of good evidence to support prophylactic removal, there appears to be little justification for the removal of pathology-free impacted third-molars."

Guidelines issued by the British National Institute for Clinical Excellence²² and the Scottish Intercollegiate Guidelines Network²³ have reached similar recommendations that surgical intervention in the absence of pathology is not indicated for asymptomatic impacted third molars. Parenthetically, everyone should have periodic oral examinations by general dentists, who are capable of monitoring retained third molars and who can provide appropriate treatment for diseased teeth. Predicting the development of future pathology for wisdom tooth is currently an uncertain science. Dr. Dodson suggests that the unpredictability of wisdom tooth morbidity is a reason to consider extraction. But unpredictable morbidity applies to other anatomical structures, such as the appendix, tonsils, gall bladder, uterus, and prostate, for which prophylactic removal is not advocated by any organization. However, it is the recommendation of the American Association of Oral and Maxillofacial Surgeons for wisdom teeth.²⁴

According to Venta et al. (1991), 84% of lower third molars are completely or partially unerupted at an age of 20 years, and 91% of impacted mandibular third molars at 20 years of age will have life-long impaction. Impacted third molars are associated with the risk of different disorders and complications. The indications for removal of lower wisdom teeth are based on the most common complications such as recurrent pericoronitis, cyst development, or periodontal breakdown distal to the lower second molar (NIH, 1980). Approximately one third of completely unerupted and partially erupted mandibular third molars are associated with pericoronitis, being the most common problem (Punwutikorn et al., 1999). Retention of