CASE REPORT

Inverted impacted mandibular third molar: An unusual eruption

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Abstract
Impacted tooth is the one which fails to erupt within the dental arch in the expected time. Inverted tooth can be explained as the malposition of a tooth in which the tooth is reversed and positioned upside down. Most commonly impacted teeth are third molars, with a frequency of 20–30%, and a higher incidence in women. This case report presented a 26-year-old male with pain in the lower right back tooth region and radiographic investigation revealed inverted impacted mandibular third molar which was surgically removed under local anesthesia.

Case Report
A 26-year-old male patient reported to the department of oral and maxillofacial surgery with the chief complaint of pain in the lower right back tooth region for the past 7 days. The pain was obscured occasional and non-radiating in nature. There were no signs of periodontal involvement in any of the teeth in the area of pain. An orthopantomogram was taken to assess the status of third molar as well as possible carious lesions in the teeth in that region. No carious lesion was found in any tooth, thus the possibility of pain due to reversible or irreversible pulpitis was eliminated. The status 48 tooth was assessed which was found to be impacted and inverted [Figure 1]. The patient was informed about the surgical procedure needed for the removal of impacted tooth and also explained about the complications associated with the procedure.

Introduction
The management of impacted teeth is one of the basic components for oral and maxillofacial surgery practices. Peterson defined that impacted tooth is the one which fails to erupt within the dental arch in the expected time.[1] The level of impaction can be determined by the Pell and Gregory classification.[2] Position A: The occlusal plane of the impacted tooth is at the same level as the adjacent tooth. Position B: The occlusal plane of the impacted tooth is between the occlusal plane and the cervical line of the adjacent tooth. Position C: The impacted tooth’s occlusal plane is apical to the cervical line of the adjacent tooth. Position I: Situated anterior to the anterior border of the ramus. None of the third crown is in the ramus of the mandible. Position II: Less than half of the crown is in the ramus of the mandible. Position III: More than half of the crown is in the ramus. Most commonly impacted teeth are third molars, with a frequency of 20–30%, and a higher incidence in women. Inverted tooth can be defined as the malposition of a tooth in which the tooth is reversed and positioned upside down. The eruption process of a tooth is very complex phenomenon, which might be altered by genetic, molecular, cellular, or tissue causes leading to impaction. Therefore, the impacted teeth may be non-functional, abnormal, or pathological.[3]
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The tooth root was removed using elevator. Buccally, a purchase point was made on the embedded crown and elevated with elevator. Irrigation of the socket was done with betadine and saline solution; bony margins were smoothened using bone file followed by closure done with 3-0 black braided silk suture [Figures 2 and 3]. Post-operative follow-up revealed satisfactory wound healing without any alteration in the sensation [Figures 4-6].

Discussion

Inverted impacted teeth may stay in the same position for a long time without any symptoms such as pain and swelling. However, they may lead to complications such as crowding, diastema, resorption of the adjacent tooth root, and development proximal caries in the adjacent tooth.[4] In the literature, a very few cases of inverted and impacted third molars have been reported.[5-7] The pathology for the inversion of teeth is recognized as unusual proliferation of odontogenic epithelium before the development of the tooth germ.[3] The most common location of inverted impacted three molar in the mandible noted as in the ascending ramus, whereas, in the maxilla, teeth may be displaced as far as the floor of the orbit.[6] In the literature, surgical removal of invertedly impacted tooth has been described as very complicated procedure as the crown points downward inferiorly and root points upward toward the alveolar crest.[7,8] Radiographic investigation plays an significant role in detecting the exact position of inverted impacted tooth and their relation to vital anatomic structures, and helps in development of a proper treatment plan to prevent damage of the surrounding anatomical structures with minimum surgical trauma.

Figure 1: Pre-operative picture showing unerupted 48

Figure 2: Closure done using 3-0 black braided silk suture

Figure 3: Post-operative orthopantomogram

Figure 4: Pre-operative orthopantomogram showing impacted inverted 48

Figure 5: Intraoperative picture showing full-thickness mucoperiosteal flap reflection
Removal of an inverted, impacted tooth is more complicated than the removal of normally impacted tooth, usually because of the deeper bony position of the tooth. The extraction of the tooth requires removal of large amounts of bone during surgery as these teeth are completely embedded in the bone. No clear treatment protocol given in the literature till date, so the treating surgeon must weigh the risks and benefits of removing inverted impacted third molars.\(^{[9,10]}\) Risk factors and intraoperative, post-operative complications associated with surgical removal should be properly conveyed to the patient, and a written consent obtained from the patient before surgery is mandatory.

### Conclusion

Inverted and impacted third molars, whether maxillary or mandibular, are rare clinical entities and no clear treatment protocol given in the literature till date. Hence, the surgeon should be aware of them and be able to assess the level of difficulty posed by each case to facilitate the planning of treatment and proper patient management.

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