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**Case Report** 

# An Atypical Presentation and Management of Bilateral Impacted Inverted Maxillary Third Molars: A Case Report

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**Abstract:** *Background:* The maxillary third molar is among the most commonly impacted teeth and can present in various forms depending on the direction and depth of impaction. However, bilateral inverted impaction of the maxillary third molars is an exceptionally rare condition, with only a single case reported in the current literature. *Case Report:* This case report unequivocally outlines the uncommon presentation and management of bilateral inverted maxillary third molars in a 50-year-old female. Routine radiographic imaging unmistakably identified the inversion, with crowns oriented upward and roots directed toward the alveolar crest, alarmingly close to the maxillary sinus. Since the teeth were symptomatic, surgical removal was decisively recommended to avert potential complications, such as infection and disruption of prosthetic rehabilitation. The extractions were executed across two sessions, with healing proceeding without any complications. *Conclusion:* This case underscores the critical necessity for thorough imaging and a bespoke treatment strategy for addressing rare dental anomalies. It accentuates the need for personalized care, considering the patient's health, surgical risks, and prosthetic objectives. Given the rarity of bilateral inverted maxillary third molar impactions, this report delivers significant insights into their management and surgical strategy

Keywords: Impacted tooth, inverted molar, bilateral inverted, maxillary impaction, third molar.

### INTRODUCTION

An impacted tooth is defined as one that cannot follow its normal eruption path due to inadequate space or physical obstructions. Maxillary and mandibular third molars, or wisdom teeth, are the most commonly impacted teeth. The impacted maxillary third molar can be seen in various angulations and positions within the alveolar bone. Vertical impaction occurs in 63% of cases, while distoangular and mesioangular impactions account for 25% and 12%, respectively. Rare positions, such as inverted and transverse, are found in less than 1% of cases. Bilateral inverted teeth impaction is an extremely rare phenomenon, with only one case documented in the literature [1].

Inversion, a condition where the tooth is positioned upside down, is defined as the malpositioning of a tooth with its crown pointing upward and its root apex directed toward the alveolar crest. In severe cases, inverted maxillary molars may be displaced toward anatomical structures like the floor of the orbit [2]. Inversion may occur due to abnormal

**Copyright** © **2025** The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution **4.0** International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

Citation: Kavya Priya T., Shiva Kumar H. R., Prachi Bheke, Sahana N. E., Anvitaa Gurudatta, Kirthi Kumar Rai (2025). 19 An Atypical Presentation and Management of Bilateral Impacted Inverted Maxillary Third Molars: A Case Report. *South Asian Res J Oral Dent Sci*, 7(2), 19-24. proliferation of odontogenic epithelium during early tooth germ development, leading to irregular positioning within the maxillary bone. Such anomalies are often incidentally detected during routine imaging, given their rarity and atypical presentation [3].

This case report focuses on the clinical evaluation and surgical management of a rare case involving bilaterally inverted and impacted maxillary third molars. The findings emphasize the significance of thorough diagnostic imaging and precise surgical planning in managing complex dental anomalies.

# **CASE REPORT**

A 50-year-old female patient presented to the Department of Oral and Maxillofacial Surgery at Bapuji Dental College & Hospital, Davangere, Karnataka, India with a primary complaint of pain and mobility in the upper and lower teeth for the past month. The patient was referred by the prosthodontist for full mouth extraction. The patient had no known systemic comorbidities and had undergone multiple extractions 2 years ago in a private clinic.

Clinical examination revealed grade III mobility in the upper incisors and premolars and lower incisors, canines, first and second molars. Additionally, the maxillary third molars were clinically absent on both the left and right sides. However, a bulge could be palpated on the buccal side at the position of third molars bilaterally. Orthopantomography revealed generalized bone loss associated with the remaining teeth. Interestingly, bilateral impacted maxillary third molars were observed radiographically, which were inverted and distally oriented (Fig. 1). Both impacted teeth were symptomatic and showed evidence of associated bone loss on radiographic evaluation. The crown of the inverted right maxillary third molar was located in close proximity to the maxillary sinus (Fig. 2). In contrast, the left inverted molar was positioned at a safer distance from the sinus and exhibited a more buccally directed orientation (Fig. 3). CBCT was not performed since the patient did not consent for the same.



Fig. 1: Bilateral inverted maxillary third molars



Fig. 2: The right inverted upper third molar



Fig. 3: The left inverted upper third molar

The patient was informed about the presence of the impacted and inverted maxillary third molars (fig. 4). The case was subsequently discussed with the prosthodontist, and the finalized treatment plan involved fabricating a removable complete denture following the extraction of the remaining teeth and surgical removal of the impacted teeth. Regarding the inverted maxillary third molars, the treatment option was the surgical removal of teeth. The patient was provided with a detailed explanation of the treatment option, including a thorough discussion of the potential risks and benefits associated with the surgical removal of the impacted teeth. After careful consideration and with the patient's consent, it was decided to proceed with the surgical removal of the inverted molars. The surgical removal of the maxillary third molars was deemed ideal, as the close proximity of the right molar to the maxillary sinus posed an increased risk of infection, while the buccal prominence created an obstacle for the proper fabrication of the denture. The extraction of the remaining teeth was done at prior appointments in our unit after which patient was recalled for the surgical removal. After taking prior consent from the patient, the impacted third molars were surgically removed under local anaesthesia following all the aseptic precautions during two separate appointments, spaced one week apart.



Fig. 4: Maxillary arch showing missing bilateral third molars

Preoperatively the patient was given intravenous injection dexamethasone 8 mg and loading dose of amoxicillin 1g. The left side, a crestal incision was given and full thickness mucoperiosteal flap was elevated in the region of the third molar to expose the impacted tooth. About three fourth of the tooth was covered with bone and it showed slight mobility (fig. 5.B). Deroofing of bone was done using round bur No. 8 rosehead round bur under copious saline irrigation was performed to expose the crown, and the tooth was luxated and delivered using a straight Coupland elevator (fig.6.A-C). The water holding test was performed after the tooth removal to rule out the involvement of maxillary sinus communication. Closure was achieved bilaterally with 3-0 black braided silk sutures, which were removed after one week. The patient was prescribed a five-day course of oral antibiotics (amoxicillin 500 mg thrice a day for five days), analgesics, and anti-inflammatory medications. At the time of suture removal, healing was satisfactory. On the right side, a similar procedure

was followed (fig. 5A). The patient was advised to follow up with post-operative radiographs for 6 months to one year to evaluate the bone formation (fig. 7). The lower two lateral incisors were retained to use as abutments for over denture fabrication. The patient was subsequently referred for prosthodontic rehabilitation.



Fig. 5: Exposure of right and left maxillary third molar regions showing bone covering the teeth



Fig-6: Showing surgically removed right and left maxillary third molars



Fig. 7: Immediate postoperative radiograph

## DISCUSSION

Maxillary third molar impactions can be categorized according to Pell and Gregory classification based on their depth in the bone (Class A, B, C), their position relative to the long axis of the second molars (Position I, II, III), and their relationship to the maxillary sinus (with or without sinus approximation). Inverted maxillary third molars, characterized

by their crown pointing upward and root apex toward the alveolar crest, are among the rarest and most complex types of impactions. These teeth typically remain asymptomatic for years but may occasionally lead to complications such as ectopic eruption into the nasal floor, adjacent tooth resorption, crowding, diastema formation, or pathological changes. Owing to impedance by the jawbone, adjacent tooth, or the thickened gingival tissues, impacted teeth cannot erupt completely into the oral cavity within the predictable period [1].

The first reported case of a unilateral inverted maxillary third molar impaction dates back to 1973, with subsequent literature indicating a higher prevalence in the Indian population [3]. Abu Mostafa n *et al* reported the first case of bilateral impacted inverted third molars which was managed conservatively [1]. Currently, there is no standardized treatment protocol for these cases. Conservative management is often preferred if the tooth is asymptomatic and protected by intact bone and mucosa. Removal of an inverted impacted maxillary molar is warranted if the tooth follicle is associated with pathology or if the patient exhibits symptoms, with prompt surgical management being crucial. In some cases, even asymptomatic patients may require surgical intervention due to the potential risk of infection [4].

Additionally, the patient should be informed about the indications, contraindications, potential risks, and benefits associated with both conservative management and surgical removal of impacted teeth, allowing them to actively participate in the decision-making process [5]. Furthermore, the patient's medical condition, age, and the potential local complications linked with conservative management, such as infection and pathology should be considered. Surgical removal of the impacted molars will also facilitate future prosthetic rehabilitation and help prevent additional complications. The decision to proceed with surgery should be made after carefully weighing the risks and benefits, ensuring that the anticipated benefits surpass the potential risks.

The inverted impactions that are usually surgically addressed are symptomatic. These impacted teeth are either located in close proximity to the maxillary sinus and the pterygoid plates, or are fully encased within bone [6].

Mohan S *et al.* proposed the possible treatment protocols for impacted inverted teeth. They proceeded with surgical treatment involving bone guttering, lateral transposition, and extraction and found that the post-operative healing was uneventful. Although no complications were observed post-surgery, the possibility of complications remains. Therefore, they concluded that is crucial for patients to be monitored regularly through follow-up appointments [5].

To the best of our knowledge, no documented case of surgical removal of bilateral inverted and impacted maxillary third molars has been reported in the PubMed or Google Scholar databases. This study presents an exceptionally rare case of bilateral inverted and impacted maxillary third molars managed through surgical removal.

### CONCLUSION

In conclusion, this case report presents a rare instance of bilateral inverted maxillary third molars. Surgical removal was necessary due to their proximity to vital structures and the need for prosthetic rehabilitation. The case underscores the importance of thorough evaluation and careful treatment planning, contributing valuable insights to the management of similar dental anomalies.

### List of Abbreviations- None

Declarations Ethics Approval- Not Applicable Consent to Participation- Obtained Consent for Publication- Obtained Availability of Data and Material- Not Applicable Competing Interests- The Authors Do Not Have Conflicts of Interest. Funding- No Financial Support Was Provided for This Work

#### Authors' Contributions-

Dr. Kavya Priya T: conceptualization and supervision, Dr. Prachi Bheke: performed surgical procedure and writing original draft, Dr. Sahana N E: literature research, Dr. Anvitaa Gurudatta: literature research, Dr. Kirthi Kumar Rai: data curation and supervision, Dr. Shiva Kumar H. R: conceptualization, data curation and supervision

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