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# Bipronged Inverted Impacted Third Molar-A CBCT Analysis

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***Authors' contributions***

*This work was carried out in collaboration between all authors. Author ST designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors RC, PT, HR, SS and MM managed the analyses of the study. Author OPD managed the literature searches. All authors read and approved the final manuscript.*

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***Short Communication***

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## ABSTRACT

Bilateral inverted impacted third molar is a very rare incidence. Dearth of dental arch length and space are also considered as the chief cause for tooth impaction. Reviewing the literatures, mandibular third molar was the most frequently impacted tooth, followed by the maxillary third molars, the maxillary canines and the mandibular premolars.

*Keywords: Unilatral impaction; bilatral impaction; cone beam computed tomography; ortho pantomo gram.*

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## 1. INTRODUCTION

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 [1,2]. The inverted impaction is one of the complicated impactions[1]. Inverted tooth is where crown pointing downwards, root apex pointing toward the alveolar crest. Radiographs have a major role in detecting the position of impacted teeth [3]. A very few cases of inverted and impacted mandibular third molars have been reported in the literature. Cone Beam Computed Tomography (CBCT) has rarely been used to confirm the presence of impacted molars. This case report describes a very rare case of inverted and impacted bilateral mandibular 3rd molars.

Position A: The highest portion of mandibular third molar is on a level with or above the occlusal plane.

Position B: The highest portion of impacted third molar is below the occlusal plane but above the cervical line of the second mandibular molar.

Position C: The highest portion of impacted mandibular third molar is below the cervical line of the second mandibular molar.

Position I: None of the crown is in the ramus of the mandible.

Position II: Less than half of the crown is in the ramus of mandible.

Position III: More than half of the crown is in the ramus [4,5].

## 2. Case Report

A 35 year old male patient reported to the department of Conservative Dentistry And Endodontics, Career Post Graduate Institute Of Dental Sciences, Lucknow, India. Patient complained of pain with the lower right region of mouth. Intraoral periapical radiograph revealed caries with second molar of the fourth quadrant on the mesial aspect (Figs. 1 and 2).

Due to unusual proliferation of odontogenic epithelium before development of tooth germ, third molars in mandible and maxilla may develop far from their normal location [6]. Impacted third molar was seen with its mesial aspect, doubting the presence of impacted third molar bilaterally a digital Ortho Pantomo Gram was planned and it revealed the presence of the same (Fig. 3).

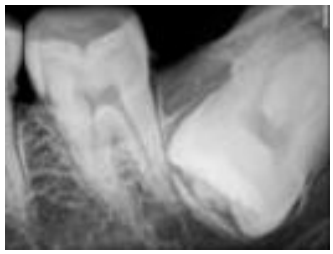

**Fig. 1. Impacted molar of third quadrant**

**Fig. 2. Impacted molar of fourth quadrant**

Root canal treatment was performed with the second molar of the fourth quadrant and final scan was done using Cone Beam Computed Topography (I-CAT).

Radiograph revealed the presence of impacted third molars in both the mandible (bilateral) and maxilla (unilateral). On keen observation it was elicited that the molars in the mandible are inverted whereas that of maxilla in normal, which made this case report a rarest one with bilateral inverted impacted third molars. The patient was informed that we can pursue it as a case report and we have the written consent of the patient with us.

## 3. DISCUSSION

On detailed literature evaluation very few reports of inverted teeth were found. Tooth impactions can occur because of various reasons, such as:

(i) Hard tissue abnormalities like Odontomes, soft tissue conditions such as Myxofibrous Hyperplasia and Ameloblastic Fibroma cause mechanical obstruction in the path of eruption;

(ii) Either due to trauma or unknown reasons, which may lead to abnormal path of eruption, this may lead to impactions due to lack of space;
(iii) Primary failure of eruption of well formed tooth may have strong genetic component or it could be an acquired condition;
(iv) Access to inverted maxillary molars can be a problem, since the largest circumference of the tooth (crown) is opposite [7].

The many kinds of impaction include: vertical, horizontal, buccal, lingual and inverted impaction.

The presence of impacted third molar in both the third and fourth quadrant was clearly evident in the 3D construction view of both the arches. It was clear that both sides had impacted inverted third molars and can be seen in the Postero Anterior view of the 3D Ortho Pantomo Gram.

Third molar teeth have been reported in the literature, the incidence of inverted impaction of Mandibular third molar teeth bilatral are scarce. Gold and Demby in 1973 reported the first case of inverted maxillary third molar tooth impaction [8]. Healing is deficient in these cases, this has been documented [9,10]. With the teeth being completely impacted in the bone there is evidence of bone loss. Inverted impactions should be carefully communicated to the patient [11,12]. There appears to be little literature for the extraction of pathology-free impacted third molars [13,14].


**Fig. 3. Ortho Pantomo Gram**

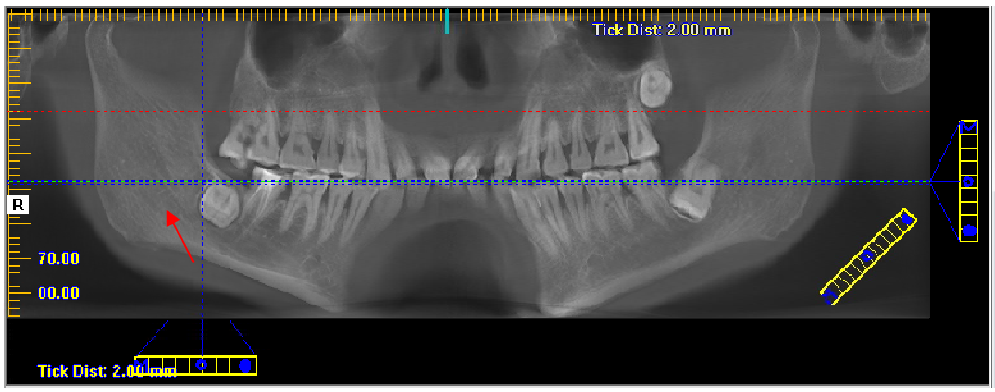


**Fig. 4. Cone Beam Computed Topography (I-CAT) showing root canal treatment**

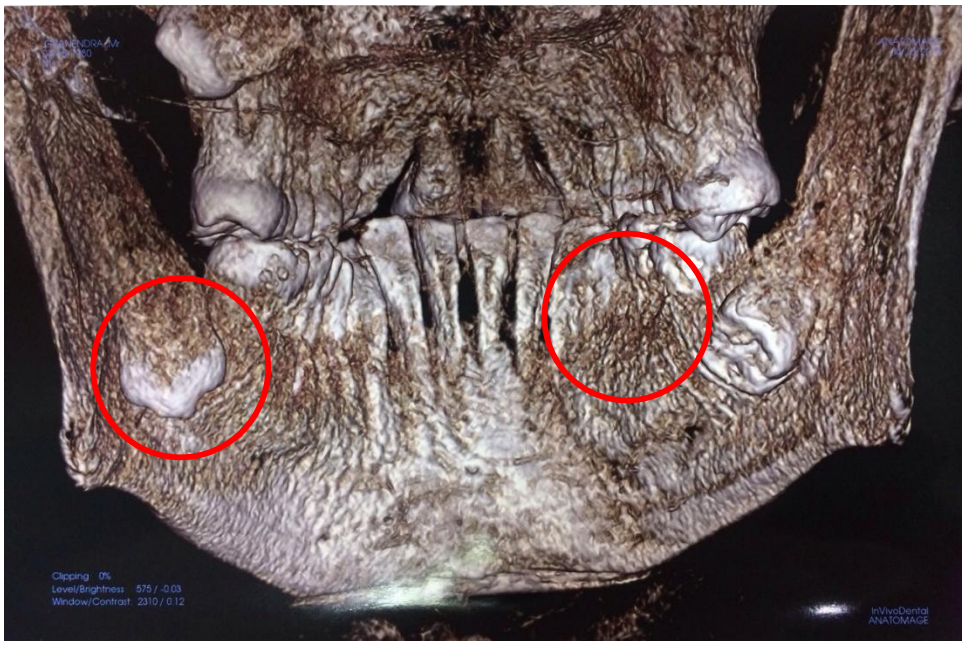


**Fig. 5. 3D Construction of the skull in the Antero-Posterior view**

## 4. CONCLUSION

Literature available, has shown related complications particularly depend on justification that whether the tooth follicle has pathology or is pathology-free. Pathology-free and asymptomatic cases can be treated in a conservative manner. Conservative treatment mainly involves leaving molars in the bone [15,16]. Patient's need, findings and surgeons skills are to be considered while planning the treatment protocol for impacted inverted tooth. Periodontitis and tooth decay are the main complications of impacted molars [17,18]. Hence, the impacted teeth could usually need to be surgically removed. The surgical intervention for inverted molars is more challenging than other types of impactions, thus it should be considered that if the involved tooth is normal and has no other complications than just being impacted and if the surrounding Peridontium is sound the tooth should not be extracted and it has to be salvaged.

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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