

# Inverted Impacted Maxillary Third Molar: A Rare Occurrence

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## ABSTRACT

Impacted maxillary third molars in inverted position are very rare occurrence and to the best of the author's knowledge, current case report is the fourteenth of its kind. Through this case review, authors have intended to discuss the assessment of difficulties which can be encountered; anatomic approximations which can pose iatrogenic hazards and cautions need to be exerted during surgical intervention of these type of Impactions. In authors view, surgical removal of inverted impacted maxillary third molars is more challenging than other type of impactions.

**KEYWORDS:** Maxillary Third Molar, Tooth Impaction, Inverted, Difficult Surgery

## INTRODUCTION

The advent of civilization is associated with increased progressive uneruption, impaction, and agenesis of teeth.<sup>1</sup> Mechanical impediment, which may be caused by the jaw bone, adjacent teeth or thickened gingival soft tissues<sup>2</sup> may prevent the eruption of these teeth into functional occlusal position.<sup>3</sup> However, discrepancy between tooth size and arch length still forms the basis of most of the theories of tooth impaction.<sup>4</sup> The third molars are the most frequently impacted teeth, with the incidence of mandibular impactions decidedly more than maxillary impactions.<sup>5</sup>

Impacted maxillary third molars are usually vertical, though they may sometimes assume mesioangular, distoangular or horizontal position in the jaws, and may further be deflected buccally or lingually.<sup>6</sup> Inverted maxillary third molar impactions are not commonly encountered in dental practice,<sup>1</sup> and are defined as those in which the crown points towards the maxillary sinus and the root faces the alveolar crest.<sup>7</sup> Maxillary third molars have been classified into Class A, B and C based on the anatomic position of lowermost portion of crown of third molar and its relation to the second molar. Another most commonly used classification is based on relationship of third molar to maxillary sinus and it classifies it as SA (Sinus Approximation) or NSA (No Sinus Approximation).<sup>8</sup> This paper describes a rare case of an inverted and impacted left maxillary third molar.

## CASE REPORT

A 42 year old female patient reported with pain on upper left side of jaw since one and half years. Personal and family histories were unremarkable, and there was no history of trauma. Clinical examination revealed missing

24, 25, 26, 27 and 28 with history of multiple tooth extractions. Radiographic evaluation by panoramic radiograph and Intraoral Periapical radiograph revealed the presence of an impacted left maxillary third molar in inverted position with crown in close approximation to the maxillary sinus (SA) and roots facing the alveolar crest (Fig 1). The patient was duly informed of the



Fig 1-Panoramic View showing Impacted Inverted Maxillary third molar on left side.

presence of the impacted tooth, and informed consent for its removal under local anaesthesia was taken. A crestal incision was made with an anterior releasing incision. Subperiosteal reflection was done to expose the surgical site. Buccal guttering technique was done to release the tooth from bone, luxated and removed in toto. Clinical examination of the extraction socket did not reveal perforation of the floor of sinus. Silk sutures were used to close the site. On sequential follow-up till 6 months, patient has reported the resolution of her chief complaint of pain and no post-operative complication has been observed.

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## DISCUSSION

Tooth impaction is a frequent phenomenon with a multifactorial etiology. These may include (i) mechanical obstruction in path of eruption, (ii) malpositioning of tooth germ (iii) primary failure of eruption due to genetic predisposition or acquired conditions<sup>1</sup>. Impacted third molars show a wide variety of developmental anomalies and it can vary considerably in size, contour or relative position to other tooth. They show more developmental variations than any other tooth.<sup>8</sup>

The incidence of inverted maxillary third molar impactions is rare. The first known case report of inverted and impacted maxillary third molar in English literature was by Gold and Demby in 1973.<sup>9</sup> Thirteen similar cases have been reported, thus to the best of the authors' knowledge, the current case report is the fourteenth of its kind<sup>2,7</sup> and would, therefore, add to the present academic literature available.

After establishing the position of the impacted maxillary third molars, the radiographs must be analysed to assess the difficulties that might be encountered and to prevent the possible complications of the procedure. Relative depth, angulation and sinus approximation must be assessed using OPGs and IOPAs.<sup>1</sup> Anatomical relations which can pose surgical hazards are approximation of impacted maxillary third molar to Maxillary sinus, Infratemporal fossa, and Pterygopalatine fossa. Infratemporal fossa is bounded anteriorly by thin maxillary cortex which also forms the posterior border of maxillary sinus. Besides that, Pterygopalatine fossa, which communicates laterally with infratemporal fossa, is bounded anteriorly by medial portion of maxillary tuberosity. Thus displacement of tooth or its fragment in these spaces (Orange seed phenomenon) is possible and can be problematic to retrieve.<sup>10</sup>

Caution must be exerted while removing an inverted maxillary molar tooth due to the complex relation of the crown of an inverted maxillary molar with the floor of maxillary sinus. Abnormal position of the crown may require excessive bone removal.<sup>1</sup> Secondly, access to inverted maxillary molars can be a problem, as the largest diameter of the crown is towards the maxillary sinus and the infratemporal fossa. Complication that could relate to difficult access is the tooth displacement into these spaces<sup>11,12</sup> (Winkler et al., 1977; Oberman et al., 1986). Thirdly, pneumatization of sinus in edentulous maxillary first and second molar region can be a surgical hazard as in present report, either through the creation of Oroantral

communication or by weakening of alveolar process, henceforth alveolar fracture.

## CONCLUSION

These Impacted teeth may warrant removal even in asymptomatic patients, owing to possibility of infection. On the other hand, the surgical intervention for inverted and impacted molars is more challenging than other types of impactions. Thus, in our view, the risks of removal should be carefully weighed with the benefits of retaining the tooth.

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