



# A Deeply-Impacted Mandibular Third Molar with its Root Protruding from the Lingual Plate

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## Clinical Image

An impacted mandibular third molar with its root protruding from the lingual plate is a rare occurrence. Excessive tooth extraction force can displace a deeply-impacted third molar into the adjacent fascial spaces. Computed tomography (CT) can provide excellent visualization of the complex anatomy around the tooth and aid in treatment planning for tooth removal.

A 45-year old female patient was referred to the department of oral and maxillofacial surgery for removal of the right mandibular third molar. Orthopantomography (OPG) showed that the third molar was vertically deeply-impacted in the mandible (Figure 1). CT disclosed that the root of the tooth was protruding from the lingual plate (Figure 2).

Under general anesthesia, the lingual bone overlying the tooth was removed and the tooth was cautiously extracted preventing displacement of the third molar into the adjacent fascial spaces. The post-operative course was uneventful.

The mandibular third molars are often misaligned/impacted and indicated for extraction. Surgical removal of the third molars is common in the field of oral and maxillofacial surgery. In anatomy, a lingual undercut is frequently recognized in the posterior mandibular region [1]. Cross-sectional CT images can locate and evaluate the degree of a lingual concavity in the mandible [1]. Hence, deeply-impacted mandibular third molars can protrude their roots into the lingual undercut. During extraction, the third molars might be displaced into the adjacent spaces through fenestration or due to a thin lingual plate [2]. Displacement of the teeth or fragments into the anatomical spaces is unlikely, but may result in serious iatrogenic complications [2]. Displaced teeth or roots should be retrieved immediately to

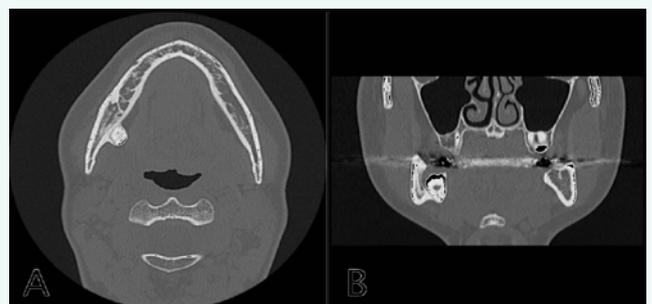
avoid devastating complications, such as, deep neck infections, mediastinal infections, and airway obstruction [3].

Imaging diagnostics are essential to predict the anatomical relationship among the teeth and surrounding structures. OPG is useful as the first-line diagnostics and widely used to confirm the position of the third molars and to observe the relationship of the teeth to the inferior alveolar canal [4]. OPG reveals two-dimensional vertical and mesio-distal relation around the teeth, but does not provide cross-sectional images. However, CT with multiplanar reformatted views presents the accurate relationship between the structures, discloses the presence of a lingual undercut, and enhances intra-surgical safety [1].

It is recommended that oral surgeons be alert to removing such deeply-impacted mandibular third molars. Incomplete pre-operative assessment is one of the risk factors for the displacement of the third molars and subsequent complications. CT is highly instrumental in depicting the accurate position of the malposed third molars and yielding detailed information with cross-sectional images of mandibular bone morphology.



**Figure 1** The deeply-impacted right mandibular third molar.



**Figure 2** Axial CT image (A) and coronal CT image (B) showing the right mandibular third molar with its root protruding from the lingual plate..

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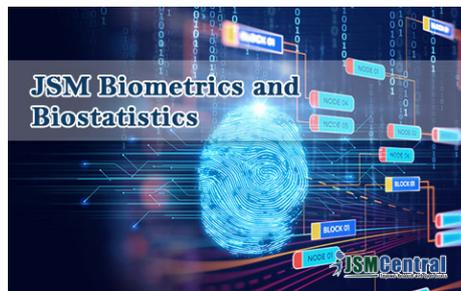
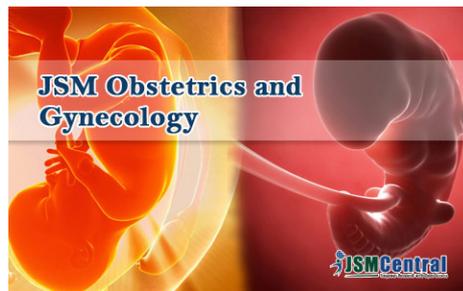
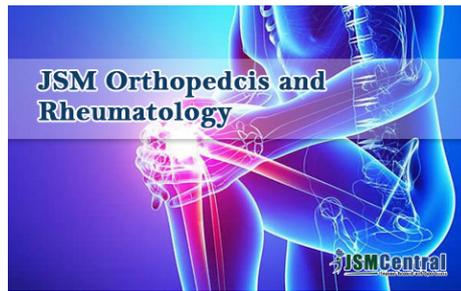
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