

## Story of a Displaced Tooth – A Case Report

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### ABSTRACT

Various iatrogenic complication may be seen during extraction of mandibular 3rd molar. Displacement of mandibular 3rd molar into pterygomandibular space is usual but displacement into an unusual space like submandibular space or sublingual space is very rare. This can cause significant physical and psychological problems for the patient. The treatment for this kind of complications may vary from a conservative treatment to surgical procedure, what will depend on clinical features, symptoms, the location of the tooth, and its relation to adjacent structures. The present case report illustrates a rare complication of extraction of impacted mandibular third molar that was displaced into the sublingual region. Upon locating the tooth, successful removal of tooth was performed. Healing was uneventful after a 3 month of follow up.

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### Introduction

The removal of mandibular 3<sup>rd</sup> molar is the most common procedures performed by oral and maxillofacial surgeons. Complications associated after removal of mandibular third molar includes dry socket, swelling, paresthesia of lingual or inferior alveolar nerve, bleeding and infection; that occur in about 1% of third molar cases [1].

Displacement of teeth or roots during extraction may be a rare phenomenon. Tooth which are generally lingually inclined or those which are deeply impacted mostly have a higher risk of being displaced into the lingual soft tissues. Elevation may also lead to displacement. Mandibular molars, especially third molars, can be squeezed into the sublingual space, submandibular space, pterygomandibular space, lateral pharyngeal space and cervical spaces in the neck [2]. It generally occurs due to application of uncontrolled or excessive force, excessive manipulation, improper surgical planning or poor clinical and radiological assessment [3].

The incidence of displacement of mandibular 3rd molar into any space is very low, there is very few literatures about it. We present a case of rare incidence of displacement of lower third molar in sublingual space and removal of the tooth under local anesthesia extra orally. The study has been approved by the Institutional

Review Board (IRB).

### Case Report

A 27-year-old male patient reported to Department of Oral and Maxillofacial Surgery, ITS Centre for Dental Studies & Research, Ghaziabad with chief complain of pain, and swelling on the right side of the oral cavity as a result of attempt to removal of 3rd molar. On clinical examination, reduced mouth opening with difficulty in swallowing and swelling in the floor of the mouth was observed.

Orthopantomogram (OPG) and Cone-beam computed tomography (CBCT) revealed displaced right third molar medial to the adjoining lingual cortex in the right posterior body to ascending ramus region and the tooth was inverted with two distinct roots with blunt apex having root apex fracture. The fractured root fragment was noted embedded at the base of the empty root socket abutting the adjoining buccal cortex at the level of mid-apical thirds of the alveolus (Figure: 1).

The present case operated under local anesthesia taking all kind of precautionary measures as it was performed during covid-19 pandemic. Patient was draped and surgical site was painted under aseptic condition. The skin was marked by marker before injecting local anesthetic solution with vasoconstrictor. Extra oral infiltration of lignocaine 1:2,00,000 adrenaline and right inferior alveolar nerve block was given. The incision was 1.5 to 2 cm inferior to the mandible for preserving the marginal mandibular

branch of the facial nerve (Risdon approach) (Figure: 2).

Retraction of the skin edges revealed the underlying platysma muscle, the fibers of which run super-inferiorly. After undermining the platysma muscle over the white superficial layer of deep cervical fascia, the tip of the instrument was pushed back through the platysma muscle at the other end of the incision. With the instrument deep to the platysma muscle, a scalpel was used to incise the muscle from one end of the skin incision to the other. The anterior and posterior skin edges retracted sequentially to allow a greater length of platysma muscle division than the length of the skin incision, exposing the underlying superficial layer of deep cervical fascia. The submandibular salivary gland was visualized through the fascia. Dissection to the Pterygomasseteric muscular sling was done and the facial vein and artery were encountered. The facial artery and vein were then isolated, clamped and ligated. Dissection through the superficial layer of deep cervical fascia was accomplished by nicking it with a scalpel and bluntly undermining with a hemostat. Then by approaching the sublingual space and dissecting the fiber of mylohyoid muscle we palpated for the offending tooth that was locate just above the mylohyoid muscle and visualized and removed by the help of hemostat (Figure: 3, 4, 5). The wound was irrigated with normal saline and adequate hemostasis achieved followed by layered suturing (Figure: 6). Antibiotics and analgesics were prescribed for five days and patient recalled after 7 days for suture removal. Healing was satisfactory with no post-operative complications.



**Figure 1:** Orthopantomogram (OPG) showing displaced right third molar medial to the adjoining lingual cortex in the right posterior body to ascending ramus region



**Figure 2:** Incision marking (Risdon Approach)



**Figure 3:** The tooth was palpated after dissecting the fiber of mylohyoid muscle that was locate just above the muscle



**Figure 4:** The offending tooth removed by the help of hemostat.



**Figure 5:** The Offending Tooth



**Figure 6:** Skin Closure

## Discussion

At the floor of the mouth, above the mylohyoid muscle under the free portion of the tongue a triangular space is present known as the sublingual area. No posterior fascial borders separate the submandibular and the sublingual space and the inferior parapharyngeal space, having free communication between these spaces. There are many important structures in the sublingual space, such as the submandibular duct and sublingual duct, branches of the lingual artery, and the lingual and hypoglossal nerve bundles. Complications like bleeding, pain and limited mouth opening occur due to displacement of a tooth or root into the sublingual space. Infection within the space may cause life-threatening complications, such as deep neck infections, thrombosis of the internal jugular vein, erosion of the carotid artery and its ramifications, interference with cranial nerves (IX to XII), mediastinitis, and airway compromise [4].

Displacement of a mandibular third molar or its root into an adjacent anatomical space has most commonly involved the submandibular space. Besides anatomic considerations such as distolingual angulation of the tooth and thinning or loss of lingual cortical bone, improper manipulation due to lack of experience, excessive or uncontrolled force, and inadequate clinical and radiographic examination can lead to tooth displacement [5].

The first case of iatrogenic displacement of a tooth date to 1958 and was published by Howe, who described the removal of a third molar located on the floor of the mouth. Since then, several cases of sublingual displacement of third molars have been reported [6].

It may be helpful to place the index finger on the lingual aspect to protect and prevent displacement of the third molar or its root when there is a potential for displacement into adjacent anatomical spaces [7]. All third molar extraction cases should be carefully evaluated in advance by the help of OPG and CBCT and significant risks included in the informed consent discussion. Dentists attempting these extractions should follow the general rules regarding adequate access, appropriate bone removal, and avoidance of excessive force [8].

Impacted mandibular third molars may be pushed through a perforation in the lingual surface of the mandible into the region of the submandibular fossa. The thin lingual plate can be fractured during the attempt to remove the tooth, and retrieval of such a displaced tooth is usually difficult. The conventional retrieval technique uses an assistant to keep constant upward external pressure in the submandibular region to push the fragment toward the oral cavity. The lingual gingiva may be reflected as far forward as the premolar region, and the mylohyoid muscle is detached to gain adequate access to the submandibular space [9].

## Conclusion

This type of situation should be addressed as soon as possible. Where there has already been a delay in the referral, one should note any existing nerve injury or infection, and record this carefully. If the fragment or tooth is close to the socket, we suggest that our modified method is very suitable. However, when the fragment is large and palpable, one may use either the modified method or the conventional method, with pressure upwards from beneath the mandible if necessary. If the tooth or fragment is close to the submandibular space, sublingual space, lateral pharyngeal space or deep cervical space and there is limited mouth opening, an extra oral approach or a combined intra/extra oral approach may be needed. When the fragment is not palpable and the panoramic

and occlusal films are inconclusive, a computed tomography scan should be mandated [10].

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