

Intraoral Management of Iatrogenic Tooth Displacement: A Report of Two Cases and a Brief Review of Literature

Abstract

Iatrogenic displacement of a tooth or tooth fragment is a rare but well-recognized complication that occurs during exodontia. The most common sites of dislodgment of a mandibular third molar fragment are the sublingual, submandibular, and pterygomandibular and lateral pharyngeal spaces. Removal of a displaced tooth from these spaces may be complex due to poor visualization and limited access. A thorough evaluation of all significant risk factors along with precise localization of the tooth by clinical and radiographic means should be performed to prevent untoward complications. This paper reports two cases of iatrogenic displacement of mandibular third molar teeth, in the sublingual space and lingual pouch. Both the cases were managed intraorally under general anesthesia, and the postoperative healing was satisfactory and uncomplicated. A brief review of literature is also provided in this paper.

Keywords: Iatrogenic displacement, intraoral, lingual pouch, mandibular third molar, sublingual space

Introduction

Iatrogenic displacement of the lower third molar tooth is a rare but well-recognized complication.^[1] Some fragments of the tooth might accidentally get displaced into the sublingual, submandibular, or pterygomandibular space due to lingual location, fenestration of the lingual cortical plate with root exposure,^[1] application of uncontrolled or excessive force, excessive manipulation, improper surgical planning, or poor clinical and/or radiological assessment.^[2] Here, we are providing two cases of intraoral retrieval of iatrogenically displaced mandibular third molar tooth in the sublingual space and lingual pouch and a brief review of the relevant literature.

Case Reports

Case report 1

A 42-year-old female reported with the chief complaint of pain, restricted mouth opening, and swelling in the right lower jaw for 3 months. She had a history of a difficult extraction of her lower right mandibular third molar tooth, 3.5 months back. Her treating dentist had informed about her tooth. However, she developed persistent

pain, restriction of mouth opening, and a firm swelling in her lower jaw and visited our institution thereafter. On examination, an interincisal opening of around 20 mm was observed. A firm swelling was present in her right submandibular area, which was tender on palpation. Intraorally, a slight bulge was present on the lingual aspect of the mandibular third molar area, near the mylohyoid ridge, which was hard and tender on palpation. We prescribed her with routine antibiotics and analgesics for 5 days and asked her to come for a follow-up after 7 days. On her second visit, the pain had completely subsided, and mouth opening had increased to 30 mm; however, the swelling in the submandibular area was persistent. To exclude the presence of any lesion, a computed tomography (CT) scan of her jaw was advised. The CT scan revealed an intact third molar tooth, displaced lingually and inferiorly in the sublingual pouch [Figure 1]. A fracture was also evident in the patient's lingual cortical plate near the third molar region. Surgical intraoral removal of the displaced tooth was planned under general anesthesia after the procedure, and potential complications were explained to the patient. Intraoperatively, the neck was extended, and bimanual

**Abira
Chattopadhyay,
Md. Arif Hossain,
Aritra Chatterjee,
Mohsina Hussain,
Sanjit Barman,
Anirban Raha**

*Department of Oral and
Maxillofacial Surgery,
Dr. R Ahmed Dental College
and Hospital, Kolkata,
West Bengal, India*

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Address for correspondence:
*Dr. Mohsina Hussain,
Department of Oral and
Maxillofacial Surgery,
Dr. R Ahmed Dental College
and Hospital, Kolkata,
West Bengal, India.
E-mail: mohsina.hussain.mh@
gmail.com*

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palpation was done to locate the exact position of the tooth. Digital pressure was applied at and lingual to the lower border of the mandible to prevent further displacement of the tooth. Incision was placed directly over the lingual bulge, taking care to avoid injury to the lingual nerve. A substantial amount of fibrosis made dissection difficult. Minor blunt dissection of the mylohyoid muscle was done until the tooth was visible in the sublingual space with good illumination and support from extraoral digital pressure. With the help of a curette, the tooth was pushed outward and upward and retrieved from the oral cavity [Figure 2]. The wound was irrigated with normal saline and sutured with 3-0 Vicryl sutures [Figure 3]. The removed tooth is seen in Figure 4. Antibiotics and analgesics were prescribed for 5 days. On the 7th postoperative day, the patient was called for suture removal and reported that she was not experiencing any troubling complications. Her healing appeared to be satisfactory. There was no incidence of lingual nerve paresthesia. After 1 month, the mouth opening significantly improved to 35 mm.

Case report 2

A 50-year-old male reported with the chief complaint of pain during swallowing for 1 week. The patient had a history of attempted difficult extraction 1 week back, following which the symptoms developed. On examination, no extraoral swelling was evident; mouth opening was normal. Intraorally, the right lower mandibular third molar was missing; a bulge was present just lingual to the lower first and second molar area. On palpation, the bulge was hard in consistency and mildly tender. Clinically, the tooth was thought to be displaced in the lingual pouch. A panoramic radiograph confirmed the clinical findings and revealed a deep-seated root fragment positioned distally, away from the root tip of the mandibular second molar [Figure 5]. Surgical intraoral removal of the displaced tooth was planned under general anesthesia after the procedure, and potential complications were explained to the patient. The surgical procedure was exactly similar to the previous case except here; dissection through the mylohyoid muscle was not required. Since retrieval was early, fibrosis did not complicate the procedure as in the previous case. However,



Figure 1: Computed tomography scan showing intact third molar tooth displaced lingually and inferiorly in the sublingual space



Figure 2: Tooth retrieved from the sublingual space



Figure 3: Suturing of the wound on the lingual side



Figure 4: The retrieved tooth

a firm digital pressure was applied lingually and posteriorly to prevent further displacement of the root fragment. After incision, blunt dissection through the tissues [Figure 6] revealed the broken tooth in the lingual pouch. The tooth was retrieved from the oral cavity, and the removed root fragment can be seen in Figure 7. Antibiotics and analgesics were prescribed for 5 days. Sutures were removed on the 7th postoperative day. Healing was satisfactory and uncomplicated. No incidence of lingual nerve paresthesia

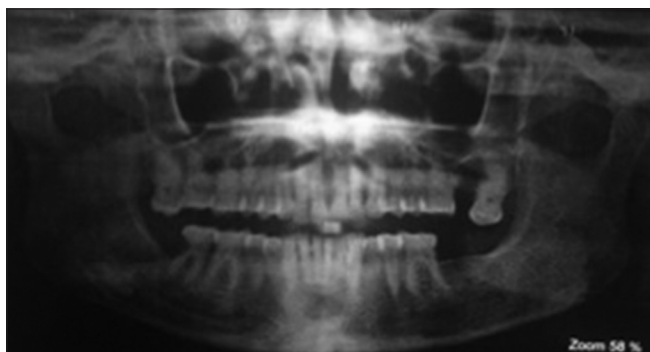


Figure 5: Panoramic radiograph revealing a deep-seated root fragment positioned distally, away from the root tip of mandibular second molar



Figure 6: Blunt dissection through lingual tissues

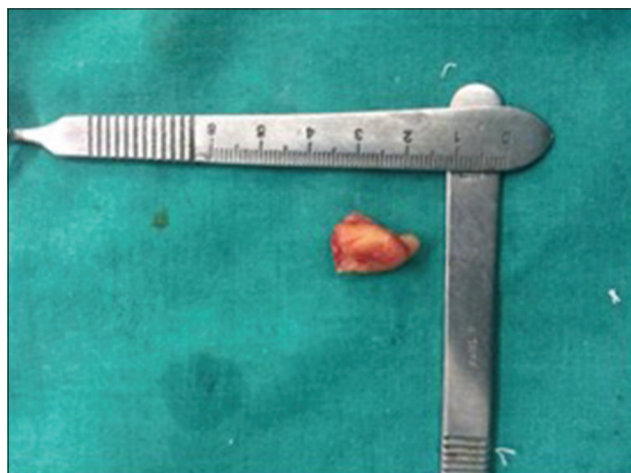


Figure 7: Retrieved tooth

was reported. Pain during deglutition subsided completely by the 14th postoperative day.

Discussion

Accidental displacement of the third molar into the sublingual, submandibular, or pterygomandibular space is a rare complication.^[3,4] Unfortunately, the prediction of such an accident intraoperatively, even after thorough clinical and radiographic assessment, is impossible.^[5] The timing of the retrieval has been the subject of debate. Huang *et al.*^[1] favor the earliest retrieval possible. Some prefer to postpone the surgery for several weeks to allow fibrosis to occur, thereby stabilizing the tooth. Attempts of immediate retrieval with a lack of skill or anatomic and surgical knowledge worsen the condition by deepening the fragment into adjacent tissue spaces. Consequently, no single method of retrieval is applicable in all situations.^[6]

Lingually located or deeply impacted molars present a higher risk of displacement to other facial spaces.^[4] The symptoms after displacement may vary from asymptomatic to reports of pain, edema, and restricted mouth opening. Based on these findings, treatment options also vary between conservative management and surgical retrieval under local or general anesthesia.^[7] Tooth fragments bigger than 5 mm should be retrieved surgically, but if smaller and not palpable, conservative treatment can be an option. Teeth left *in situ* for a prolonged time period may incite foreign body-induced inflammatory reaction and spread to fascial spaces of the neck.^[4]

Bimanual examination assists in localizing the fragment as an adjunct to radiography, especially in cases of lower tooth displacement. External digital pressure avoids further displacement of the fragment in the tissue spaces, elevation of the mouth floor, and palpation of the area. CT scanning is considered to be the gold standard technique to determine the exact size and location of the displaced tooth. Cone-beam CT can provide the added advantage of low-radiation exposure and three-dimensional views.^[1,2,8] If CT is not available, panoramic and occlusal radiographs can also provide useful information.

Wide visualization of the surgical site along, good illumination and proper instrumentation prevents further displacement into adjacent fascial areas. Sudden movements of the patient may complicate the procedure and can be avoided under general anesthesia. If the retrieval is possible in relatively safe conditions, an intraoral approach under local anesthesia is the simplest and least invasive technique for the removal of displaced root pieces in the soft tissue of the lingual pouch. When a fragment is displaced within deep spaces, an extraoral approach may be indicated.^[9,10] Indeed, a combination of intra- and extraoral approaches may be needed to retrieve tooth and root fragments.^[10]

Many complications, including paresthesia and hemorrhage, can occur following retrieval of a root fragment from

the sublingual space and lingual pouch due to its close proximity to the lingual nerve, inferior alveolar nerve, and blood vessels.^[1,8] Surprisingly, most reports indicate no injury to the lingual nerve. Some authors recommend identifying and protecting the nerve. In our cases, no untoward complication was seen, and the postoperative healing was uneventful.

Conclusion

The accidental displacement of a tooth into the tissue spaces is a rare complication but needs to be diagnosed and managed early to reduce morbidity. If the tooth is inadvertently displaced into the adjacent anatomical spaces during attempted extraction, the patient should be duly informed. The treating surgeon should verify the exact location of the tooth fragment through clinical examination and imaging and formulate a treatment plan based on clinical characteristics, size, location, and adjacent structures.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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