Case Report

Retrieval of mandibular third molar tooth accidentally displaced in submandibular space: Series of two cases

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INTRODUCTION

Usually, the impacted third molar tooth is indicated for extraction. Sometimes, it may displace into lingual pouch or submandibular space during extraction particularly when the lingual cortex is extremely thin. It may further traverse into pharyngeal spaces if not managed by some expert. This can cause severe complications or persistent pain. Besides anatomic considerations, such as distolingual angulation of the tooth or dehiscence in lingual cortical plate, excessive or uncontrolled force, improper manipulation and inadequate clinical and radiographic examination and assessment are important factors that can lead to tooth displacement.[1] The symptoms referred by patients may vary, because some patients remain totally asymptomatic, whereas others present pain, swelling, and trismus, requiring removal of the displaced root.

Case 1

A 46-year-old female patient reported to the Department of Oral and Maxillofacial Surgery, Postgraduate Institute of Dental Sciences, Rohtak, Haryana with the complaints of pain, slight swelling on the left side of mouth floor and discomfort during swallowing and limitation in mouth opening. Patient history revealed that a month earlier she had undergone an unsuccessful surgical procedure under local anesthesia performed by a general practitioner for removal of an impacted third molar on the left side.

Orthopantomography and cone beam CT in another patient revealed the displaced third molar in submandibular space. Patients were planned to retrieve the tooth under local anesthesia and the postoperative course was uneventful.

Key words: Parapharyngeal space, submandibular space, third molar
of the mandible. The tooth fractured during extraction. The procedure described by the patient as being difficult and complicated. On clinical examination, the root was not palpated on the posterior region of the mouth floor and submandibular region extraorally. After the history and careful assessment of the socket, the patient was advised panoramic radiography. Panoramic radiograph showed the presence of a radiopaque mass that is similar to the appearance of the third molar tooth root. Two-dimensional radiographs were inadequate in this case. For detailed radiographic examination, computed tomography (CT) scans were taken by spiral technique and axial sections were obtained [Figure 1]. Images were reconstructed to form sagittal and coronal sections and examined. CT examination demonstrated the presence of a high-density area located in the left submandibular region demonstrating the position of root fragment. Careful evaluation of the CT and orthopantomography (OPG) revealed the position of displaced root in submandibular space [Figure 1]. After routine blood investigations and preanesthetic check-up, it was planned to retrieve the tooth from submandibular space via extraoral submandibular approach under local anesthesia with conscious sedation.

The surgical site was exposed carefully with layer-wise dissection. The dislodged root was started locating using blunt dissection with small artery forceps with extreme care because there are increased chances of root displacement into pharyngeal spaces further. The dislodged root was not directly visible. As 1 month had been already passed, we were suspecting some fibrosed or infected tissue mass must be enclosing the root segment. Considering this fibrosed tissue the displaced root segment, it was grasped with Ellis forcep and there was instant ooze of pus in that area, which further confirmed the presence of root fragment there only. Care must have to be taken because this pus could have been progressed into submandibular space infection and further progressing to pharyngeal spaces or may be Ludwig’s Angina if not managed.[2] The fibrosed tissue was also dissected carefully. Dislodged root was grasped with artery forcep and retrieved from the fibrosed tissue and pus was wiped with gauze piece and the area cleaned with normal saline and metronidazole solution.

The surgical site was sutured layer wise. The patient was prescribed oral antibiotics for 1 week. The postoperative OPG confirmed the retrieval of the displaced root from submandibular space. Postoperative course was uneventful and the patient was asymptomatic at the follow-up visit 3 months later. Written consent was obtained from the patient for case presentation.

**Case 2**

A 26-year-old female reported to the Department of Oral and Maxillofacial surgery, Postgraduate Institute of Dental Sciences, Rohtak, Haryana with a chief complaint of pain on left side of posterior jaw region with a history of extraction of left mandibular third molar about 2 years back by some practitioner. On clinical examination, there was tender on percussion in the second molar. OPG revealed the vertically impacted Class III position C left mandibular third molar [Figure 2]. Cone-beam computerized tomography was further advised to elaborate the exact location and position of the tooth which further revealed fractured lingual plate and displacement of crown part of the third molar at the level of apex of roots of the second molar and apex of roots of the third molar almost at the level of lower border of angle of mandible [Figure 2]. On the basis of history provided by patient and radiographic

![Figure 1: (a) Case 1 – Preoperative orthopantomography. (b) Preoperative three-dimensional computed tomography showing tooth in submandibular space. (c) Coronal section of computed tomography scan of mandible confirming presence of displaced tooth in submandibular space. (d) Retrieved tooth from submandibular space via submandibular approach. (e) Postoperative orthopantomography confirming the retrieved third molar from submandibular space.](image)

![Figure 2: (a) Preoperative orthopantomography showing accidently displaced tooth in submandibular space. (b) Coronal section of computed tomography mandible showing displaced third molar in submandibular space. (c) Three-dimensional computed tomography of mandible confirming third molar in submandibular space. (d) Postoperative orthopantomography reveals retrieved third molar from submandibular space.](image)
investigations, it was anticipated that the operating practitioner had accidentally pushed the tooth into the lingual pouch and the even patient was not explained of the actual situation. So when the patient reported with pain after 2 years of the incidence, she was planned for intra-oral extraction and retrieval of the tooth from the lingual pouch under local anesthesia, as she refused of any extra oral procedure.

After explaining the patient about the perioperative complications related with retrieval via intraoral surgical approach, intra-oral Vazirani-Akinosi nerve block was given with 2% lignocaine along with the local infiltration in the surrounding tissues. Modified ward’s incision was planned for exposure of surgical site.[3] Moreover, subperiosteal flap was reflected carefully to prevent damage to the lingual nerve. Envelope flap was raised with utmost care on the lingual side from the second premolar to anterior border of ramus region, protecting the lingual nerve from damage by careful retraction of lingual soft tissue. Overlying bone was removed using round bur to expose the displaced crown portion of the mandibular third molar on the left side of the mandible. After removing the overlying bone in third molar region adjacent to second molar, the crown of dislodged tooth was observed below the mylohyoid muscle. Fibers of mylohyoid muscles were stripped off with very care to prevent further displacement into spaces. Crown part of the third molar was exposed with the help of Howarth elevator and with extreme care of not displacing into further spaces. The tooth was luxated and was taken out with the help of the help of long artery forcep. After observation and irrigating the surgical site, silk suturing was done for the closure of the surgical site and the patient was discharged after 1 h. The patient was advised oral antibiotics for 1 week. Follow-up after 1 week revealed lingual nerve paraesthesia. The postoperative course was uneventful and the symptoms of lingual paraesthesia completely resolved after 3 months follow-up.

**DISCUSSION**

It is possible that any tooth fragment lost in the Submandibular region could prove difficult to retrieve, but it would seem that this is a very rare complication of extraction and cannot easily be anticipated.[4] We speculate that in the current cases tooth broken during extraction might pushed to the submandibular space by instrumentation. Some authors usually prefer to postpone surgery for several weeks to allow fibrosis to occur and stabilize the tooth in a firm position. However, delayed intervention may increase the risk of infection and may result in a foreign body reaction or further migration of the dislodged tooth.[5] Therefore, in the first case, surgical operation was performed immediately as 1 month had been already passed. The patient was put on a regimen of oral antibiotics for 1 week postoperatively. In the second case, we managed to retrieve the displaced fragment with an intraoral incision only because the patient refused of the extraoral incision, but sometimes, it may be necessary to do a combined intraoral and extraoral approach with a submandibular incision.

When a tooth or root get displaced into submandibular spaces, it is necessary to inform the patient about the incidence and its further possible complications and refer immediately to the nearest oral and maxillofacial unit as an emergency.[6] However, in one case report, the patient was explained of false information of complete extraction of tooth, which was absolutely not ethical and a legal action may have been called against the practitioner. This reflects a big ignorance of the serious complication by the general practitioner.

**CONCLUSION**

The sublingual space is located superior to muscle and the submandibular space lies inferior to muscle but superior to the hyoid bone. No fascial border separates sublingual and submandibular spaces from the inferior parapharyngeal space. So is free communication between these spaces. Adequate clinical and radiographic examination and presurgical assessment should be performed before third molar extraction like an evaluation of the degree of impaction, the position of roots, distal inclination, bone density, and ease of surgical access should be assessed by the practitioners extracting mandibular third molar teeth. Mylohyoid muscle divides sublingual and submandibular spaces. The frequency of accidental tooth displacement may be reduced if adequate presurgical assessment and the advanced imaging techniques are often used before surgery and if possible a Maxillofacial Surgeon should be preferred for surgery of the third molar.

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**Conflicts of interest**

There are no conflicts of interest.
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