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CASE REPORT

DELAYED REMOVAL OF DISPLACED MAXILLARY THIRD MOLAR FROM THE INFRA-TEMPORAL FOSSA BY INTRA ORAL APPROACH

Paramjit Kajla[1], Jeevan Lata[2], Bharpur Sharan Sharma[3], Kamini Verma[4]

[1]Senior Demonstrator, [2]HOD & Professor, [3]PG Student Final Year, Dept. of Oral & Maxillofacial Surgery, Pb. Govt. Dental College & Hospital, Amritsar (Punjab), [4]BDS, Govt. Dental College & Hospital, Jaipur (Rajasthan)

ABSTRACT:
Impacted maxillary third molar removal is a simple and easy procedure for an Oral and Maxillofacial Surgeon. Nevertheless, the possible associated complications with removal of maxillary 3rd molar include infection, facial swelling, trismus, wound dehiscence, root fracture or even oroantral fistula. Iatrogenic displacement into the infratemporal fossa is frequently mentioned but rarely reported. The incorrect extraction technique, distopalatal angulated tooth, decreased visibility or less bone distal to the third molar are some of the factors responsible for it. The exact anatomic location of the displaced tooth is not easy to determine clinically so various radiographs like OPG , CBCT, especially 2D/3D CT are suggested to know the exact location. Recommended treatment includes immediate surgical removal if possible or initial observation and secondary removal, depending upon the patient's chief complaint. Sometimes, the displaced tooth may spontaneously migrate inferiorly and become accessible intraorally. Herein, a 45 year old female patient reported to our department with chief complaint of pain and swelling in the right maxillary third molar region. History, clinical examination and x-ray examination confirmed the presence of displaced right upper third molar in the infratemporal fossa. Thorough history of patient revealed accidental slippage of the tooth during extraction by a private dental practitioner six months back. The tooth was recovered successfully under LA.
Key words: Tooth displacement, infra-temporal space, complications of exodontia, maxillary tuberosity

Corresponding Author: Dr. Bharpur Sharan Sharma, 209-II, Rajendra Path, 21 South Colony, Niwaru Road, Jhotwara, Jaipur, Rajasthan, India, 302012, Email: bharpoorsharma936@gmail.com

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INTRODUCTION

The surgical removal of impacted maxillary third molars is a routine procedure carried out by Oral and Maxillofacial Surgeons, and it is usually associated with low rates of complications and morbidity[1]. The common complications are fracture of the maxillary tuberosity, tooth root fracture, perforation of the maxillary sinus, prolapse of the buccal fat pad and displacement of the roots or tooth into the maxillary sinus[2].

Displacement of impacted third molars is mentioned frequently in oral and maxillofacial surgery textbooks, but rarely reported. If this complication occurs , the clinician should not try potentially complicated and hazardous surgical procedures to retrieve the displaced tooth[3]. Presenting this case, we want to emphasize the importance of the preoperative assessment and surgical planning before the removal of the maxillary 3rd molar so that complications could be avoided.

CASE REPORT

A 45 years old female patient reported to the department of Oral and Maxillo-facial surgery, Pb. Govt. dental college and Hospital, Amritsar (Punjab), with a chief complaint of pain and swelling at the extraction site of right maxillary 3rd molar. Accordingly, the extraction was attempted by a private dental practitioner (Figure 1) six months before.

Clinical examination revealed completely healed socket and healthy overlying tissues wrt. right

maxillary 3rd molar except mild tenderness behind tuberocity region (Figure 2). Tooth was not palpable at the extraction site, tuberosity nor in the surrounding area. OPG was advised to rule out the suspicion. Radiographs showed the presence of the right maxillary third molar lying posterior to the maxilla in the infratemporal fossa (Figure 3). To know the exact position 2D SCAN (Figure 4) was advised. The patient was informed about the diagnosis and counselled for the surgical retrieval of the displaced molar and complication of the procedure has been told to the patient. Written and informed consent was taken from the patient.

While using aseptic technique with proper local anesthesia, Maxillary vestibular incision was given over the posterior maxillary buccal sulcus (Figure 5). Then blunt dissection was carried out and finger was used to palpate the tooth in order to avoid injury to surrounding vital structures. Tooth was retrieved successfully (Figure 6) using a curved artery clamp and digital manipulation. The incision was sutured with vicryl 3/0 and a pressure pack applied for hemostasis. The patient was prescribed with painkiller (Ibuprofen 400mg tds) and antibiotic (Augmentin 625 tds) for 5 days and recalled after a week. Follow up visits showed uneventful recovery.

Figure 1: Pre-operative extra-oral view

Figure 2: Pre operative Intra-oral view

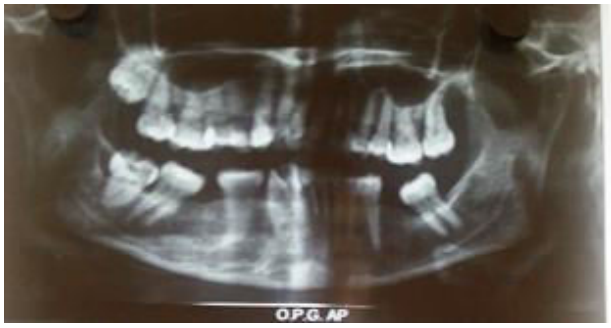

Figure 3: OPG showing displaced right maxillary 3rd molar

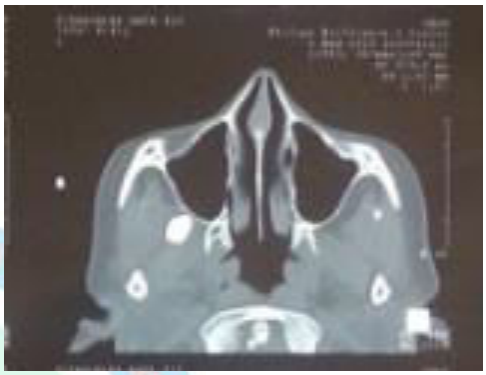

Figure 4a: Axial view CT

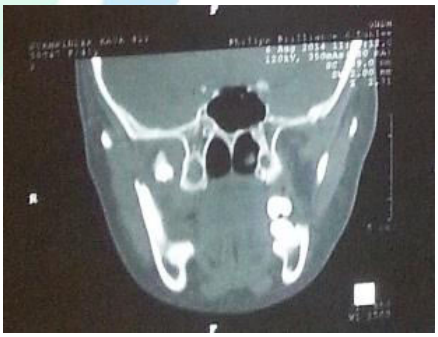

Figure 4b: Coronal view CT

Figure 5: Right maxillary Vestibular Incision

Figure 6a: Retrieval of tooth

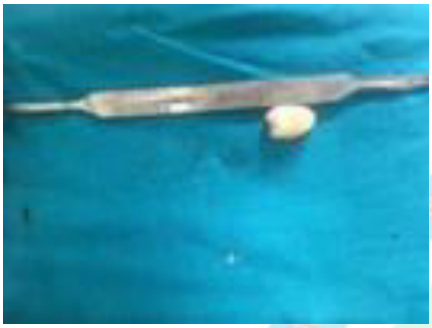

Figure 6b: Extracted Tooth

DISCUSSION

Displacement of maxillary third molars into the infratemporal fossa is usually associated with an incorrect extraction technique, distopalatal angulated tooth, decreased visibility during surgical removal or limited bone distal to the third molar[1]. The exact anatomic location of the displaced tooth is not easy to determine clinically[2,5] . These teeth usually displace through the periosteum into the infratemporal fossa just adjacent to the lateral pterygoid plate and inferior to the lateral pterygoid muscle[5]. Even the tooth may displace up-wards into the skull base if an attempt is made to retrieve it.[5]

So a thorough radiological examination, consisting of orthopantomograph and CT or CBCT scan is suggested. The anatomic structures in this region may superimpose on standard radiograph, therefore a CT scan gives the exact location of the tooth[2,5] and its proximity to the surrounding anatomical structures and enables the surgeon to plan the surgical steps to remove it. We assessed the location of displaced tooth with the help of OPG and 2D SCAN.

Clinically, the patient may be asymptomatic or has symptoms as swelling, pain, limitation of mandibular movements or trismus, if fibrosis[2] is present. In the present case patient came with the complaint of pain and mild swelling. The complex anatomy of the infratemporal fossa, the potential morbidity and the difficulty to obtain a good surgical exposure of the region are limiting factors for the treatment[1]. According to some authors, displaced teeth can migrate downwards into the oral cavity, allowing an easy surgical removal[1,6] while others do not agree with it. Migration as such is impossible because of fibrosis and anatomical boundaries[4]. Once an impacted tooth is detected, it is mandatory to remove it in order to avoid further complications.

Many intra-oral[7] and external surgical approaches have been described in order to remove the tooth such as the temporal approach[4], the Caldwell-Luc approach through the maxillary sinus after removal of the whole posterior wall and resection of the coronoid process and many others. We preferred the intraoral approach under LA.

The intraoral surgical approach is not a difficult one but it has many potential pitfalls, due to the presence of many major anatomical structures i.e. the lateral and medial pterygoid muscles, the branches of the mandibular nerve, the otic ganglion, the chorda tympani, the maxillary artery, and the pterygoid venous plexus. Each case should be considered unique and properly analysed by the surgeon and treated adequately.

CONCLUSION

This case reminds us that the best way to prevent such displacement of maxillary third molar is to evaluate each case carefully preoperatively, select proper instruments and technique to extract tooth. The distal retractor should be used to prevent displacement. If an accident does occur, dentists should decide whether to retrieve it immediately by themselves or refer the case to an oral and maxillofacial surgeon. They should not try to remove the displaced tooth without proper assurance. Localization with images and proper surgical methods are the keys to retrieve the displaced tooth or its fragments successfully. When immediate retrieval is decided on, Posterioanterior and lateral skull views are useful in localizing the displaced fragment. When the fragment moves into a deeper space or the retrieval has been delayed for months, three-dimensional CT seems to be a better choice.

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