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RECOVERY OF A MAXILLARY THIRD MOLAR FROM THE INFRA TEMPORAL SPACE VIA AN INTRAORAL APPROACH

Dental Science

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ABSTRACT

The removal of impacted maxillary third molars is one of the most common procedures performed in oral and maxillofacial surgery units with low rates of complications and morbidity. A few cases of accidental displacement of third molars into adjacent anatomical spaces, such as the infra temporal fossa, the pterygomandibular space, the maxillary sinus, buccal space, or the lateral pharyngeal space, during surgical interventions have been reported. In this paper, a case of a maxillary third molar accidentally displaced into the infra temporal fossa is presented, and the removal of the tooth via intraoral approach is described

KEYWORDS

Infra temporal fossa, Third molar Removal, Intraoral Approach.

INTRODUCTION:

The surgical removal of impacted maxillary third molars is a commonly performed procedure usually associated with few complications and little morbidity. The most frequent complications are maxillary tuberosity fracture, tooth root fracture, and tooth displacement into the maxillary antrum, all of which may be simply managed. A rarely reported complication involves the displacement of a tooth into the infra temporal fossa. Prevention of this complication by the placement of either a finger or periosteal elevator' posterior to the tooth is stressed in oral surgery texts. Management of the displaced tooth is less adequately described. Previous reports have highlighted the difficulty of locating the tooth intra operatively and the great variation in surgical approach. The following case describes the use of intraoral approach to facilitate removal of a displaced maxillary third molar.

CASE REPORT:

An 18 year old male patient reported to the Department of Oral and Maxillofacial Surgery with a complaint of pain in the maxillary right third molar region since seven days. Intraoral examination revealed impacted tooth irt 18.Treatment plan of surgical extraction under local anesthesia was planned.During procedure ,accidentally, the impacted tooth was displaced into deeper tissues .The dislodged third molar was not palpable within the soft tissues, and the patient complained of pain during mandibular movements. Immediately, a recent panoramic radiograph was asked for and was compared with the one before surgery (Figs. 2 and 3). The new radiography revealed the third molar being still present within the vicinity of the extraction area, possibly in the infra temporal region, yet being still located very high up in the soft tissues.

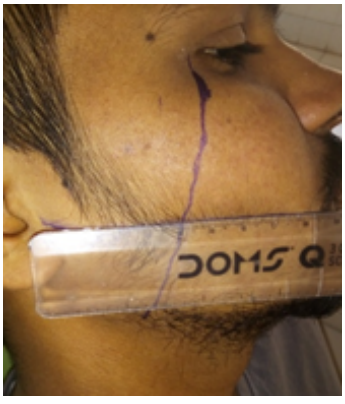

Fig1: Clinical Photograph

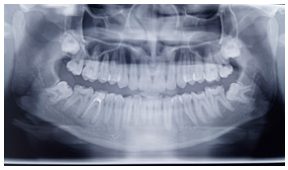

Fig 2: Pre operative orthopantomogram

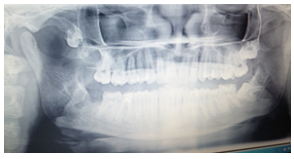

Fig3: post operative orthopantomogram

TECHNIQUE:

Under local anesthesia, a small incision parallel to the fibers of the buccinator muscle was performed, and after a superficial dissection, the buccal pad of fat was encountered which was dissected through .The tooth was completely enclosed within the soft tissues. Extraorally, manual compression of the tissues was done in an anterio-inferior direction to mobilize the tooth into intraoral area. During this manipulation, small portion of crown was identified behind the curvature of body of zygoma in the infra temporal fossa which was meticulously retrieved using an allies forceps and was delivered entoto (Fig 4). The wound was closed with 3-0 silk suture. and the patient was prescribed with analgesics and antibiotics in postoperative period. The postoperative course was uneventful, and the patient remained asymptomatic during the follow up period.

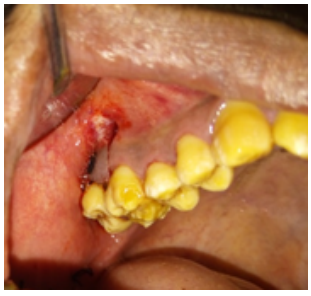

Fig4: Clinical Photograph

DISCUSSION:

Insufficient clinical and radiographic examination, excessive or uncontrolled force applied during extraction, improper manipulation because of the lack of surgical experience and anatomic alterations such as thin cortical bony plate distal to the maxillary third molar, distolingual angulation of the tooth, and inadequate flap design causing limited visibility during extraction are the important risk factors for the displacement of maxillary third molars into the neighboring anatomic space[1].Maxillary third molars usually

displace into the maxillary sinus and rarely into the infratemporal fossa. An oroantral communication may be the sign of the tooth being displaced into the maxillary sinus, whereas a limited mouth opening may probably indicate a displacement into the infratemporal fossa because the tooth would be tightened in between the coronoid process of the mandible and the posterolateral wall of the maxilla, restricting the mandibular movements.4 These teeth usually displace through the periosteum into the infratemporal region just adjacent to the lateral pterygoid plate and inferior to the lateral pterygoid muscle. If excessive force is applied during the attempt to retrieve the tooth that lies in between the periosteum and the posterolateral wall of the maxilla, the tooth may further be displaced upward into the skull base carrying greater risks for morbidity.

The access for the surgical removal of the tooth from the infratemporal fossa is not only difficult to obtain but also has the potential for morbidity because it hosts vital anatomic structures. The infratemporal fossa is occupied by 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[2].As a result, an attempt to remove a displaced tooth from the infratemporal fossa could entail serious risk of hemorrhage or neurologic injury; thus, the patient must be informed about these risks[3].

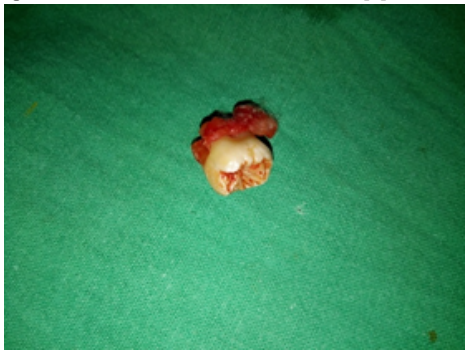

Fig5: Displaced tooth retrieved

Because the exact localization of the displaced tooth is difficult to determine clinically, different radiographic techniques facilitate the surgical procedure[5]. To determine the localization of the displaced teeth, occlusal, panoramic, occipitomental, and lateral radiographs can be useful.4 Although panoramic radiography is helpful in preoperative controls, it may sometimes disorient the diagnosis in the case of the tooth's displacement into the infratemporal fossa because of the superimposition of the anatomic structures located at the site of the infratemporal fossa.1,2 Distortion and blurring are the other disadvantages of the panoramic radiographs. Instead of this, a CT examination provides a superior imaging of the region, allowing to determine the precise and detailed location of the dislodged tooth[6]. Many surgical approaches have been used for the retrieval surgery of displaced maxillary third molar into the infratemporal fossa area such as long incision in the buccal sulcus, Gillies's approach, the Caldwell-Luc approach through the maxillary sinus after removal of the whole posterior wall, and resection of the coronoid process. In our case conservative method of surgery via intraoral approach was preferred due to the third molar location, being stuck in the infra temporal fossa within the vicinity of the extracted socket.

CONCLUSION:

In the case presented, panoramic radiographs taken in different time intervals of the event clearly showed how mobile a tooth can be once it is displaced into the infratemporal fossa before fibrosis takes place to immobilize it. This finding strongly supports the fact that radiographs should be obtained immediately before surgery because the position of the tooth may change over time. The preferred treatment choice for such cases is conservative approach through intra oral incision rather than preferring and extraoral complicated approaches.

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