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An extremely rare case of a displaced third molar into the infratemporal fossa associated with a textiloma

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Declarations of interest: none

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Abstract

Background: Third molar extraction is one of the most common procedures performed by oral surgeons, however with rare complications. The accidental displacement of a maxillary third molar into the infratemporal fossa (ITF) is a rare complication that can occur even with experienced surgeons.

Case presentation: We describe the case of a 17-year-old patient whose right upper third molar was accidentally pushed to the ITF associated with a cellulitis and the late discovery of a textiloma (a surgical gauze).

Conclusions: Extraction of third molars is a safe surgical procedure when performed in appropriate conditions. The diagnosis of textiloma following a maxillo-facial surgery is extremely rare. It is important to take into account this possibility in order to avoid delaying treatment when it occurs.

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Third molar; tooth displacement; infratemporal fossa; foreign body; textiloma

Introduction

Third molar extraction is an ordinary surgical procedure in maxillofacial surgery. Usual postoperative complications are rare, mainly: hemorrhage, hematoma, alveolitis, infections such as cellulitis, third molars displacement into the infratemporal fossa or the maxillary sinus and lingual or labial hypoesthesia [1,2]. Appropriate management of these complications is therefore very important. The authors report a case of a tooth displaced into the infratemporal fossa (ITF) associated with a cellulitis and a textiloma.

Case description

A 17-year-old patient with no medical history presented with a right maxillary cellulitis complicated with skin fistulation. The patient had undergone third molar extraction under local anesthesia three weeks before. A surgical complication had occurred during the procedure: the right maxillary third molar had been displaced into the ITF and had not been removed. The operative report was not available and no more information about the initial procedure could be found. The patient presented a right hemi-facial swelling and a trismus without fever, dysphagia or dyspnea. He had received antibiotic treatment with amoxicillin for the previous two weeks. A CT scan with contrast injection of the head and neck region was performed. It showed a subcutaneous 50 mm abscess extending into the ITF associated with subcutaneous emphysema and a displaced tooth behind the right zygomatic bone (Fig 1 and 2). Contrast enhancement was heterogeneous inside the ITF and emphysema was also seen. A spontaneously hyperdense image, resembling a bone fragment, was also seen inside the ITF (Fig 3A). The treatment was performed in emergency and consisted of surgical drainage under general anesthesia with two surgical approaches (intraoral and through the cutaneous fistula). Removal of the displaced tooth was done simply by intraoral approach. Administration of intravenous antibiotics (1 g amoxicillin and clavulanic acid three times a day) was also carried out. Antiseptic mouthwashes (with chlorhexidine gluconate) and nursing care were also prescribed. Bacteriological examination revealed the presence of non-resistant *Staphylococcus milleri* gr. and *Prevotella buccae*. The same antibiotic treatment was maintained *per os*. Despite appropriate care, the purulent discharge through the skin fistula never healed. Three weeks later, a new CT scan showed the persistence of a purulent collection in the ITF associated with a hyperdense linear image resembling the radio-opaque

marking of a compress (Fig. 3B). The diagnosis of textiloma, responsible for the persistent infection, was evoked. A second surgical drainage was performed in emergency under general anesthesia. Removal of a compress from the ITF was realized by intraoral approach and allowed confirmation of the diagnosis of textiloma (Fig. 4). Antibiotic treatment was maintained *per os* with 1 g amoxicillin and clavulanic acid three times a day for five days. Complete healing was then observed within a few days after the second surgery. No more mouth opening limitation was observed within one month.

Discussion

Third molar surgery is one of the most common procedures performed by maxillofacial surgeons. Complications are rare and known : hemorrhage (0.1% to 0.7%), hematoma, damage to adjacent teeth (0.1 to 0.4%), alveolitis (14.7% to 26%), infections such as cellulitis (0.8% to 4.2%), oro-antral communication (0.008% to 0.25%), lingual nerve (0.3 to 0.4%) or inferior alveolar hypoesthesia (1.1 to 1.7%) and mandibular fractures [1,2]. These procedures can vary in complexity, depending on the location, depth, angulation, and bone density involved [3]. The common complications associated with the removal of impacted maxillary third molar include tuberosity fracture, tooth root fracture, maxillary sinus perforation and exposure of buccal fat[3]. The accidental displacement of maxillary third molars is rare in the literature and most commonly affects maxillary sinus, ITF or other tissue planes [4,5]. The displacement of maxillary third molars into the ITF is usually associated with an incorrect extraction technique, distopalatal angulated tooth, decreased visibility during surgical removal or lack of bone distal to the tooth [4].

The presence of a tooth inside the ITF may lead to immediate or delayed symptoms such as swelling, pain, limitations of mandibular movement or even trismus [4,6]. CT scan or cone beam computed tomography (CBCT) examination must be performed to provide an exact localization of the displaced tooth. Delayed approaches (2-4 weeks) have been suggested in literature, in order to allow the formation of fibrous tissue around the teeth, using intraoral approach alone or combined intraoral-extraoral with appropriate antibiotherapy [4,6] .

Many cases of foreign body in the ITF were reported such as vegetable foreign bodies or springs [7,8]. Only one case of textiloma in the ITF after orthognathic surgery has been reported [9]. To date, no description of the occurrence of a textiloma after third molars

extraction has been reported in the literature.

Radiological examination is mandatory to establish the diagnosis of a remaining forgotten surgical compress, if it has a radio-opaque marker. On CT scan, the typical imaging appearance is an heterogeneous area with air densities and a linear high density representing the radio-opaque marker[10]. In prevention of this type of complication, a count of compresses is essential as well as the use of compresses with a radiopaque marker. Compress saturated with blood can be easily forgotten into poorly exposed anatomical spaces. In the present case, although all the characteristics of the textiloma were present, the diagnosis and management were delayed. This can be explained by the lack of information on the previous gesture or difficulty and especially the rarity of this clinical presentation.

Conclusion

The extraction of third molars is a safe surgical procedure when performed in the right conditions. Many different postoperative complications have been described but remain quite rare. Quick diagnosis of such adverse events must be done in order to allow appropriate management. The diagnosis of textiloma following a maxillo-facial surgery seems to be extremely rare. It is important to take into account this possibility in order to avoid delaying treatment when it occurs.

Disclosure of interest: The authors declare that they have no competing interest.

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Legends of figures

Figure 1: CT scan showing the displaced tooth behind the right zygomatic bone in the infratemporal fossa in axial section (A) and frontal section (B).

Figure 2: CT scan with contrast injection in frontal section showing the displaced tooth (*), a subcutaneous abscess extending in the ITF associated with subcutaneous emphysema (black arrow) and a spontaneously hyperdense image inside an area of heterogeneous contrast enhancement in the ITF (white arrow).

Figure 3: CT scans with contrast injection in axial section performed initially (A) and secondarily (B) showing the same heterogenic collection with emphysema and spontaneously linear hyperdense structure compatible with a textiloma.

Figure 4: Peroperative photograph of the removed foreign body confirming the diagnosis of textiloma.







