

SUBLINGUAL BÖLGEYE YANLIŞLIKLA İTİLEN MANDİBULER ÜÇÜNCÜ MOLAR DIŞ KÖKÜ İÇİN CERRAHİ UYGULAMA: BİR OLGU RAPORU

SURGICAL MANAGEMENT OF ACCIDENTALLY DISPLACEMENT OF MANDIBULAR THIRD MOLAR'S RADIX INTO THE SUBLINGUAL SPACE: A CASE REPORT.

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Özet

Rutin bir maksillofasiyal cerrahi işlem olmasına rağmen üçüncü molar dişlerin cerrahi operasyonları detaylı bir cerrahi planlama gerektirir. Literatürde üçüncü molar diş operasyonları ile ilgili bir çok komplikasyon raporları vardır. Sublingual bölgeye kaçan üçüncü molar dişin kökü komplikasyonu pek yaygın değildir. Çalışmamız sublingual bölgeye kaçan üçüncü molar dişin kökü ile ilgili komplikasyonu sunmayı amaçlamıştır.

Bu çalışmamızda konu olan, 23 yaşında erkek hastaya diş hekimi tarafından, başarısız sonuçlanan üçüncü molar cerrahi diş çekimi işlemi yapıldığı bildirilmiştir. İşlem esnasında sol mandibular üçüncü molar dişin kökünün kırıldığı ve sonrasında da yanlışıklıkla sublingual alana itildiği anlaşılmıştır. Hasta, oluşan bu durum sonrası bir maksillofasiyal cerrah tarafından değerlendirilmek üzere sevk edilmiştir.

Hasta ilk değerlendirmede ağız açıklığındaki kısıtlılık nedeniyle opere edilememiş ve 7 gün sonra tekrar panoramik radyografi alınarak tedavisi yapılmıştır. Bu vaka takdimi teknik planlama, maksillofasiyal cerrahisine talep oluşturma ve hastanın olası şikâyetlerinin önlenmesi için hasta kaydının önemini vurgulamaktadır.

Anahtar Kelimeler: diş kökü; üçüncü molar diş; oral cerrahi; diş çekimi; yabancı cisim.

Abstract

Despite common in the routine of maxillofacial surgeons, the third molar extraction is an important procedure which requires detailed surgical planning. The current medical literature reports several cases of accidents involving the extraction of third molar. However, displacement of mandibular third molars' radix into the sublingual space is not a common situation. In this context, the present study aims to report a case of third molar's radix displacement into the sublingual space, highlighting the relevance of informed consent and surgical planning in the clinical environment.

An unsuccessful third molar removal is reported in the present study. Specifically, a 23-years-old male patient underwent surgery with a general dentist. During the procedure, the mandibular left third molar's radix was accidentally displaced into the sublingual space. The surgery was interrupted and the patient was referred for a second attempt of dental extraction with a maxillofacial surgeon.

After the initial surgery, the patient presented lack of mouth opening, hampering an immediate secondary intervention. After 7 days awaiting an asymptomatic health status, the maxillofacial surgeon successfully reoperated the patient using panoramic radiography as imaging guide.

The present case report highlights the importance of technically planning and performing oral surgeries, requesting and interpreting complementary exams, and registering the patient's consent, in face of legal and ethic potential complaints.

Key words: displacement radix; third molar; oral surgery; tooth extraction; foreign body.

Introduction

In general, the third molar extraction is considered a procedure of minor proportion into the field of maxillofacial surgery. However, this procedure requires a specific surgical indication,

planning, technical approach, and follow-up.

Trans-surgical accidents related to the extraction of mandibular third molars often involve fracture of the adjacent bone and teeth, laceration of soft tissue, hemorrhage, neural lesions, and dental displacement into the maxillary sinuses, extracranial fossae, and cervicofacial spaces (1). Specifically in the medical literature, mandibular third molars were reported displaced into the infratemporal fossa (2); the pterygomandibular fossa (3); and the lateral (4), submandibular (5,6) and sublingual (7) pharyngeal spaces. In this context, the sublingual area is a triangular virtual space, located in the floor of the mouth, above the

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mylohyoid muscle, under the free portion of the tongue. The lateral limit of the sublingual space is the muscle complex hyoglossus-styloglossus, while the anterior limit is the genioglossus muscle (8). Important morphologic structures are observed in the sublingual space, such as the duct of the submandibular salivary gland, branches of the lingual artery, and the lingual and hypoglossal neural bundles (7). Thus, the surgical morphology of head and neck must be approached in forehand in order to avoid potential accidents, and consequent legal and ethic juridical complaints. Based on that, the present study reports a case of a trans-surgical complication, in which a mandibular third molar's radix was accidentally displaced into the sublingual space.

Case Description and Results

In January, 2013, a 23-year-old male patient underwent a surgical extraction of the mandibular left third molar (tooth 38) for dental caries reasons. During the surgery, the tooth 38 was broken from the radix junction. The broken radix displaced from dental socket to an unknown adjacent site, and the procedure was finished. Anti-inflammatory (Tenoxicam 20 mg) on every 12 hours, and antibiotics (Amoxicillin 500mg) on every 12 hours, were prescribed covering a period of 3 days after the surgery. The patient was referred to a radiology clinic for a proper diagnosis through panoramic radiography (Figures 1).



Figure 1. Views of the maxillo-mandibular area, presented imaging through panoramic radiography, illustrating the position of the tooth 38' radix.

In addition, a detailed examination revealed that the third molar was displaced

above the mylohyoid muscle, laterally to the tongue: into the sublingual space. Due to the lack of mouth opening caused by excessive trans-surgical trauma, a surgery was planned only after 7 days from the initial attempt. The second surgery was performed by an expert in the field of maxillofacial surgery.

In the second approach, the patient physical status was classified as ASA I, enabling the surgery. Based on that, the patient was medicated with 8 mg of orally administered corticosteroid dexamethasone 1 hour prior to the surgery, aiming an optimal post-surgical outcome. The second surgical procedure was performed under local nerve blocking through inferior alveolar, lingual, and buccal anesthesia, using articaine hydrochloride 4% with 1:100.000 epinephrine (Ultracain DS Forte; Sanofi-Aventis Istanbul, Turkey). The radix of third molar was accessed and successfully removed through an envelope incision, with a mucoperiosteal flap detachment from the retromolar trigone to the medial surface of the mandibular left first molar (tooth 36) (Figures 2a,2b,3).



Figure 2a. Intraoperative views of the operation and tooth 38' radix

In the following week the patient received the same medication prescribed in the first post-operative. Despite the close relation between the tooth 38 and the submandibular salivary gland and the lingual nerve, the patient did not report post-surgical sequelae within a follow-up period of 45 days. The patient was referred to a radiology clinic for a proper postoperative diagnosis through panoramic radiography (Figure 4).



Figure 2b. Intraoperative views of the operation and tooth 38' radix



Figure 3: View of radix after the operation.



Figure 4: After a follow-up period of 45 days, postoperative panoramic radiography of 23 years old male patient.

Discussion

In the routine of maxillofacial surgery, trans-surgical accidents involving dental extractions are often reported. Mostly, hemorrhage and fracture of roots and adjacent bone are described in the medical literature (1).

Moreover, the incidence of trans-surgical accidents is increased for the extraction of third molars, which is hampered by the dental position, lacking an optimal visibility of the surgical field. In this context, the dental displacement represents one of the most important accidents during the extraction of third molar due to the common need for major secondary surgical interventions (2,6).

The displacement of maxillary molars' radix becomes a greater accident if compared to the displacement of mandibular third molars' radix, due to the important anatomic spaces adjacent to the posterior region of the dental arch. Specifically, Goméz-Oliveira et al. (9) described a case in which a maxillary third molar was displaced into the infratemporal fossa. Despite the in close relation with the internal maxillary artery and the venous pterygoid plexus, the third molar was removed through a secondary surgical intervention, performed 2 weeks after the initial attempt, under local anesthesia. Similarly, Hoekema et al. (10) reported the accidental dental displacement into the same anatomic site, however the authors state that asymptomatic patients could be treated with periodic clinical and radiographic follow-ups prior to additional invasive approaches.

Yet in relation to the surgical extractions of mandibular third molars, most of the accidents involve the displacement of dental roots. It is justified due to the tilted position in which mandibular third molars are often observed, which makes necessary the crown resection prior to the dental extraction (11). Huang et al. (11) reported a case in which a third molar root was displaced into the pterygomandibular space. In this situation, the patient was successfully reoperated 5 months after the initial attempt, under general anesthesia and intraoral access. Similarly, Aznar-Arasa et al. (12) compiled 6 cases of third molar root displacement into the sublingual space. Specifically, the authors observed that 2 out of the 6 cases required a secondary intraoral surgical intervention for root retrieval. Both of the patients presented to the dental extraction (11). Huang et al. (11) reported a case in which a third molar root was displaced into the pterygomandibular space. In this situation, the patient was successfully reoperated 5 months after the initial attempt, under general anesthesia and intraoral access.

Similarly, Aznar-Arasa et al. (12) compiled 6 cases of third molar root displacement into the sublingual space. Specifically, the authors observed that 2 out of the 6 cases required a secondary intraoral surgical intervention for root retrieval. Both of the patients presented operatory impairment of the inferior alveolar and lingual nerves. The other 4 patients were asymptomatic, excluding the need for a new surgery. Differently, in the present report an entire third molar was displaced into the sublingual space, indicating that the tooth was in a favorable position for extraction, in which the crown resection was not necessary. The same was observed in the reports of Pippi and Perfetti (13), and Olusanya et al. (14), in which general practitioners performed unsuccessful extractions, highlighting the relevance of not performing surgical interventions without having a proper expertise on the field. Based on that, we recommend that third molar extractions should be preferentially managed by maxillofacial surgeons for an optimal surgical outcome.

Moreover, the displacement of third molar's radix the sublingual space is a less complex accident if compared to other situations, such as the dental displacement into the making feasible a faster post-surgical recovery, as observed in our study. An optimal surgical recovery also depends on the technique addressed during the second approach for third molar removal. In some situations an invasive technique, such as double mucoperiosteal flaps, are necessary (13), while in other cases high-tech endoscopically assisted retrieval is feasible (15). In the present case a single large mucoperiosteal surgical flap was necessary to reach the displaced third molar's radix. Despite a close relation between the third molar and the submandibular salivary gland and the lingual nerve, no post-surgical sequel was reported by the patient.

Independent from the situation, complex cases, which involves tilted and multiradicular third molars, and close relation between tooth and neurovascular bundles, must be examined in detail prior to the surgical intervention. In this context, the radiographic surgical planning is the most adequate approach to avoid third molar's radix accidental displacement (16). Panoramic radiography plays an important role, allowing for detailed analysis through imaging. Cilt / Volume 15 · Sayı / Number 1 · 2014

In combination, the knowledge concerning the anatomy of head and neck is essential for an adequate and planned intervention.

In parallel to the surgical care, accidents involving iatrogenic performances must be promptly reported to the patient, or legal responsible, informing the patient's health status and treatment choices (17). Thus, the bioethical principle of autonomy, which comprehends the patient's rights of being informed, and making decisions, is respected (18). Above all, more important is the pre-surgical description of technical steps and potential risks, and further record of the patient's decision within a signed informed consent form (18,19). Despite the best approach for clinical solutions involving iatrogenic performances, the dialogue not always avoids juridical complaints. In this context, the combination of pre-surgical imaging data, surgical plan, technical knowledge, informed consent, and the correct registration of the patient's files plays a valuable part as the main tool to support the professional against legal and ethic complaints.

Conclusions

Despite common in the routine of maxillofacial surgeons, the third molar extraction is subject to trans-surgical complications, leading to accidents or not. However, professionals must be aware to the fact of keeping patients informed prior to the technical procedure, and supported after the treatment. Additionally, the present case report highlights the importance of technically planning and performing oral surgeries, requesting and interpreting complementary exams, and registering the patient's consent, in face of legal and ethic potential complaints.

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