

Surgical Intervention on an upper Side Incisive Affected by Transmigration and Dilaceration: Case Report

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Abstract— The term “transmigration” is attributed to the fact that dental elements cross the midline of the bone base (maxilla or mandible), positioning themselves on the contralateral side. The incidence of this dental anomaly in permanent central incisors impacted on the maxilla is an unusual phenomenon and its etiology has not yet been elucidated. This pathology can be associated with root tearing. Given the context, this study describes a case report of a surgical intervention of an upper lateral incisor affected by transmigration and laceration. Patient P.M.R, 37, was seen at the surgery clinic. He used a removable prosthesis with only tooth 8 and complained that “a tooth was missing in the mouth”. Tooth 7 was fractured in the crown and endodontic treatment was performed. The clinical examination showed an increase in volume close to the anterior nasal spine. A CT scan was requested which revealed that the right central incisor was included. In the coronal section, it was possible to observe only the inverted tooth crown. In the sagittal section, it was also possible to see the root, which had a large curvature in a V-shaped fold. After the diagnosis, he opted for the removal of the included element, since it was impossible to perform a traction due to its anomalous shape. Anesthesia of the anterior superior alveolar nerve and nasopalatine was performed using mepivacaine 2% 1: 100,000, syndesmotomy and a relaxing incision was made in the distal of tooth 9 going to the base of the nose. After exposing the crown, an odonto-section was performed with an HL 702 drill at the crown / root limit and the crown was removed. A small channel was made in the mesial of the crown to find a support point and to remove the root with the molt detacher nº 9. Afterwards, the place was washed with 0.9% saline solution to remove bone bruises and done the suture returning the flap to its original place. Made the prescription drug with amoxiline 500mg 8/8 hours for 5 days, ibuprofen 600mg 12/12 hours for 3 days. Patient returned with 8 days for suture removal and asymptomatic. It is possible to conclude with this study that surgical intervention in cases where the dental element is affected by transmigration and root laceration is effective.

Keywords— Transmigration, Tearing, Oral Surgery.

I. INTRODUCTION

Transmigration is a rare phenomenon, with a reported prevalence of 0.14% to 0.31%, occurring only in the permanent dentition, which normally affects the lower canines and its etiology is unknown (Bhullar et al., 2017). However, several etiological factors may be involved, such as ectopic tooth root growth, premature retention or loss of a deciduous tooth, insufficient eruption space and excessive crown length (Domenico et al., 2017). Genetic factors, endocrine diseases and trauma were also cited as possible etiological factors. However, abnormal bud displacement or tooth deviation during development is the most commonly accepted explanation (Pawel et al., 2018).

Transmigration is a dental anomaly that usually affects a dental element, that is, simple, however, multiple ones are even rarer. In most reports of transmigrated teeth, it is possible to observe that it is positioned horizontally, below the tips of erupted teeth (Muhammad et al., 2019).

Clinical and radiographic examination is usually necessary to diagnose transmigrants, as they usually remain impacted and asymptomatic. However, they can cause resorption of pressure from the roots or inclination of adjacent teeth, pain, discomfort and neuralgic symptoms to the patient (Plaza 2016).

Panoramic radiographs, lateral cephalograms, computed tomography (CT) and cone beam computed tomography (CBCT) can be used to accurately locate

transmigrated teeth and detect radicular resorption of adjacent teeth (Ralf et al., 2019). Early diagnosis with timely orthodontic or surgical intervention can help orthodontists to preserve dental elements, which can play an important role, both in aesthetics and in function, in human dentition (Giampietro et al., 2015). On the other hand, surgical removal may be an alternative, however, the decision of the procedure depends on the symptoms reported by the patient, the location of the tooth and the presence or absence of association with pathologies (Jain & Debbarma, 2019).

Due to the unfavorable position of the transmigrated tooth, orthodontic repositioning is difficult. Currently, successful corrections of transmigrated teeth using orthodontic treatment have rarely been documented in the literature (Plakwicz et al., 2019).

The tooth affected by transmigration may be associated with root laceration, which is a dental anomaly. It can affect the root or crown of the tooth and consists of the formation of a curvature in these regions. It is more common in the upper and lower central incisor teeth (Salek et al., 2019). Given the context, this study describes a case report of a surgical intervention of an upper lateral incisor affected by transmigration and laceration.

II. CASE REPORT

Patient P.M.R., 37 years old, was seen at the surgery clinic of CEULP / ULBRA - Tocantins, Brazil for a routine examination. On physical examination, it was possible to observe a removable upper prosthesis with only artificial tooth 8 and complaining that "a tooth was missing in the mouth". Tooth 7 had a fracture of the crown and endodontic treatment was performed.

The clinical examination showed an increase in volume close to the anterior nasal spine. A CT scan was requested which revealed that the right central incisor was included. In the coronal section (figure-01), it was possible to observe only the inverted tooth crown. In the sagittal section (figure - 02) it was also possible to see the root that had a large curvature in a V-shaped fold. A 3D reconstruction (figure - 03) was performed to better visualize the clinical case.

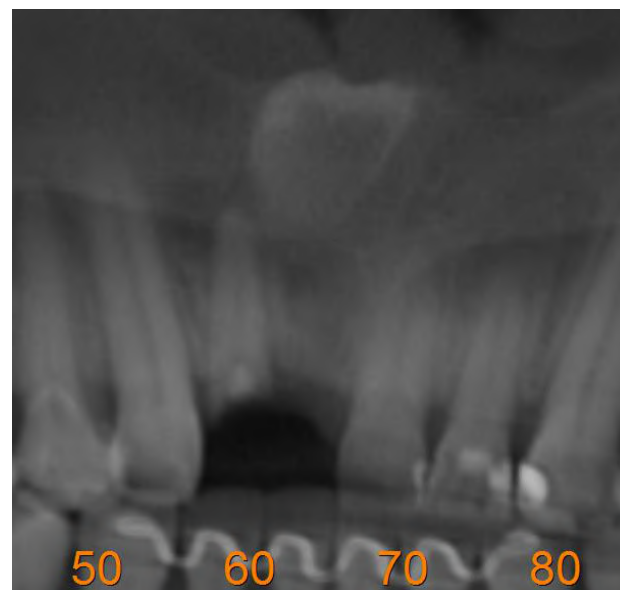


Fig.1: Coronal Section

Source: own authorship

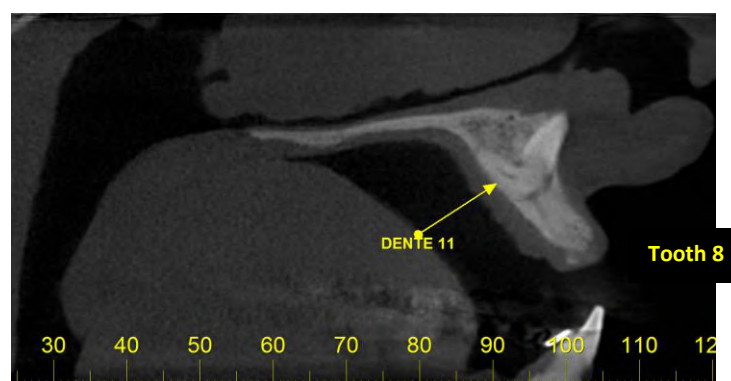


Fig.2: Sagittal section

Source: Own authorship



Fig.3: 3D Reconstruction

Source: Own authorship

A clinical case of a right upper central incisor affected by transmigration and laceration was diagnosed. We opted for the removal of the included element, since it was impossible to make a traction due to its anomalous shape.

Anesthesia of the anterior superior alveolar nerve and nasopalatine was performed using mepivacaine 2% 1: 100,000, syndesmotomy and a relaxing incision was made in the distal of tooth 9 going to the base of the nose. After exposing the crown, an odonto-section was performed with an HL 702 drill at the crown / root limit and the crown was removed. A small channel was made in the mesial of the crown to find a point of support and to remove the root with the molt detacher n° 9.

Afterwards, the site was washed with 0.9% saline to remove bone bruises and the suture was made, returning the flap to its original place. Made the prescription drug with amoxiline 500mg 8/8 hours for 5 days, ibuprofen 600mg 12/12 hours for 3 days.

The patient returned with 8 days to remove the suture without signs and symptoms. Subsequently, oral rehabilitation was performed.

III. DISCUSSION

The incidence of trans migrant upper central incisors is rare, therefore, it is more difficult to find clinical guidelines derived from solid studies based on large samples of patients (Domenico et al., 2017).

Transmigration is a rare phenomenon in which unerupted teeth migrate through the maxillary or mandibular midline. It is more common in the female gender in the proportion of 1.6: 1, on the left side, generally affecting the mandibular canines with the reported prevalence varying between 0.14 and 0.31% 3 (Bahi et al., 2013) . The patient seen in this study was also female, however it was a right upper central incisor.

The etiology remains unclear and may occur as a result of the presence of a pathological process, such as a cystic lesion or an odontoma, or any other mechanical obstacle (Aktan et al., 2010). Heredity can also be associated (Pawel et al., 2018). Normally, transmigrated teeth remain included and asymptomatic and, in some cases, may erupt in the midline or in the contralateral canine region (Muhammad et al., 2019). The most frequently associated symptoms, when present, are pain and / or resorption of the roots of adjacent teeth. In this clinical case, it was not possible to identify interference from a pathological factor or heredity, however, the patient presented without symptoms.

The late and accidental diagnosis of transmigrated teeth is a reality in clinical practice (Bhullar et al., 2017). In the present case, surgical extraction was considered as the form of treatment capable of preventing the occurrence of complications. Indeed, the possibility of complications associated with inclusion, namely root resorption of adjacent teeth and the development of odontogenic cysts or tumors, makes surgical extraction the most appropriate treatment option. In this case, the surgery took place as planned, given the position and proximity to the roots of the adjacent teeth and maxillary sinus.

The treatment of dental transmigration depends almost exclusively on how the case presents itself, with the dental surgeon being able to choose extraction, auto transplantation, radiographic monitoring, or orthodontic alignment for their actual positions in the dental arch (Plakwicz et al., 2019). Despite the treatment risks, which require extreme control mechanics from the professional, transmigration can be successfully corrected, provided that the physiological limit of periodontal structures and root resorption is always taken into account, so that the planned treatment can be reversed. in a better aesthetic and functional gain to the patient (Giampietro et al., 2015). In this clinical case, tooth extraction was chosen, since its restoration to the dental arch is not viable, because it has anomalous root laceration. Dalessandri et al., (2017) also opted for the extraction of the dental element, as they perceived its replacement as unfeasible.

Conical beam computed tomography (CBCT) is superior to radiographic examinations, since it provides a three-dimensional image, demonstrating the exact location of transmigrated teeth in three planes in space. Thus, the orthodontic and / or surgical planning of the case becomes more accurate, enabling a better prognosis. In this study, the CFFC was used, which helped in the safe diagnosis and surgical planning. Thus, corroborating the studies by (Ralf et al., 2019 and Jain & Debbarma, 2019).

The surgical wound was subvisioned 8 days after the surgery, with healing due to the 1st intention of the tissues, in accordance with what would be expected, and with a highly favorable result. The follow-up revealed the existence of a favorable process of physiological bone neoformation in the surgery area. Surgical extraction of the transmigrated tooth is important to prevent complications, even in the absence of symptoms. Exodontics will allow for complete bone regeneration, which will occur within 6 months to 1 year.

IV. CONCLUSION

It is possible to conclude with this study that surgical intervention in cases where the dental element is affected by transmigration and root laceration is effective. This way preventing complications that can be generated by the transmigrated tooth.

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