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Research Article

REMOVAL SURGICAL OF MESIODENS IN THE PALATE FOR OCCLUSAL REESTABLISHMENT: A CASE REPORT

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ABSTRACT

The purpose of this work is to report on the reestablishment of the patient's occlusion through the surgical removal of mesiodens in the palate. A 15-year-old male patient sought care at the dental clinic at Nilton Lins University accompanied by his guardian, carrying a panoramic radiograph and presenting aesthetic discomfort due to fracture of tooth 21 as the main complaint, the clinical evaluation verified the presence of a structure similar to a supernumerary tooth, this structure prevented a satisfactory occlusion of the patient, destabilizing the lower arch and acting on the

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intrusion effect of the lower incisors of the third quadrant. Based on the clinical characteristics presented along with the imaging exam, the person responsible for the removal of the mesiodens for occlusal reestablishment and subsequent fabrication of composite resin restoration with return of the disocclusion guide was chosen. The mesiodens was extracted and the occlusal normality was reestablished. Therefore, in view of the clinical resolution presented, the treatment was satisfactory, allowing the advancement to the restorative stages, and returning a normal pattern of the patient's occlusal profile.

KEYWORDS

Tooth, supernumerary; surgery, oral; dental occlusion, traumatic; tooth abnormalities.

INTRODUCTION

In the field of dentistry, occlusion refers to the interaction between the teeth present in the upper and lower arches, that is, the maxillomandibular relationship during functional acts.1 This phenomenon occurs mainly during the deglutition, due to the need to grind the food, giving rise to the bolus.1.2 In addition, occlusion is directly related to the functionality of the stomatognathic system, as there is a connection between it and other body systems, being considered the gateway to the body's mechanical functions.2.3

The development of dental tissues occurs from the embryonic period and extends to the adult stage through the process of odontogenesis.4 This moment in the individual's life is marked by a period in which the dental organ is in the process of formation.4.5 However, during its formation, it is subject to developmental alterations, which may structurally affect the dental tissues, as well as its morphology, size and/or possible appearance of new dental germs, that is, the supernumerary teeth.2 These alterations may interfere with the eruption, generating occlusal misalignment, where the absence of maxillomandibular arch space stands out.2.5

Supernumerary teeth are characterized as an abnormal numerical formation, and may be associated not only in the deciduous dentition, but also in the permanent one.6 A supernumerary may or may not erupt in the maxillary arches, as well as, they may present shapes similar to, or very different from, teeth already formed, whose name is related to its position: paramolar in the posterior region; and mesiodens when related to the anterior portion.5.7 However, when these teeth do not progress to eruption, they remain impacted and/or impacted, which can lead to occlusal damage, painful symptoms; and emergence of pathological processes. 7.8

In this context, the possible problem must be identified so that a resolution can be implemented in the treatment of this anomaly.9 The form of treatment varies according to the condition of the supernumerary, and can be: conservative, reanatomizing the tooth, applying corrective orthodontics; or just doing periodic control; or invasive, when it is necessary to perform a surgical step in order to remove the supernumerary arch.6.9 In certain conditions, to confirm the diagnosis, complementary exams must be used, such as: panoramic radiography and/or cone-beam computed

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tomography (CBCT); and the histopathological analysis after surgery to confirm the condition.10

That this, the purpose of this work is to report on the restoration of dental occlusion in a young patient through surgical removal of mesiodens in the palate.

CASE REPORT

A 15-year-old male patient, melanoderma, sought care at the Nilton Lins University dental clinic accompanied by his guardian, carrying a panoramic radiograph, presenting aesthetic discomfort due to fracture of tooth 21 as the main complaint. After signing the Free and Informed Consent Form by the person in charge, the service began. During the anamnesis, the patient's guardian reported that the tooth broke for no apparent reason, and that her son does not have adverse systemic conditions, confirmed after measuring the vital signs.

In the extraoral clinical examination, no significant clinical picture was observed. On the other hand, the intraoral examination identified the presence of complete permanent dentition, dental fracture on the mesioincisal edge of tooth 21, absence of biofilm or restorative materials. In addition, the presence of a structure similar to a supernumerary tooth positioned on the palatal surface of tooth 11 (figure 1). This same structure prevented a normal occlusion of the patient, destabilizing the lower arch, acting on the intrusion effect of the lower incisors of the third quadrant. In the lateral movement, the disocclusion guide was blocked by the presence of the structure reaching 11, which may explain the possible fracture.

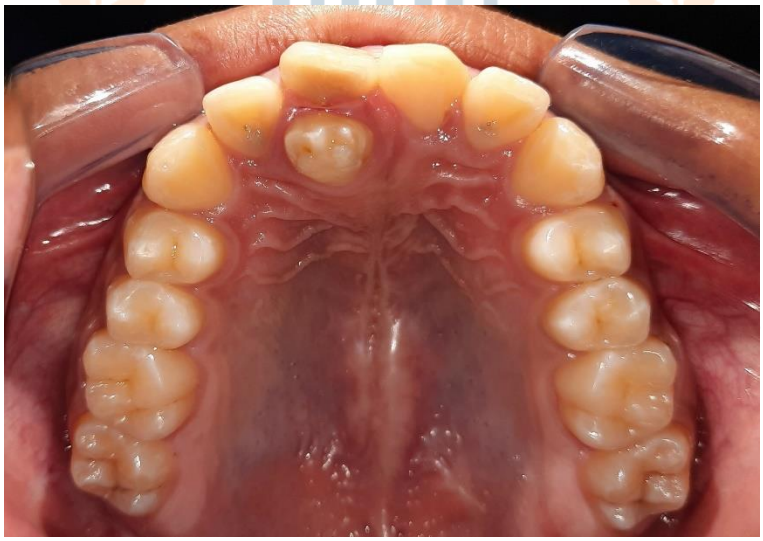

Figure 1: Initial clinical appearance (occlusal view).

In the imaging exam, the presence of the 3rd molars in the 6th phase of Nolla, dental fracture of the mesioincisal edge, with no symptoms, but with pulp vitality (figure 2). In addition, the presence of the structure with a formed root is noted, due to the position and structural profile, confirming the hypothesis of mesiodens, as informed in the intraoral examination, when requiring histopathological examination. Based on the clinical characteristics presented along with the imaging exam, the person responsible for the removal of the mesiodens for occlusal reestablishment and subsequent fabrication

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of composite resin restoration with return of the disocclusion guide was chosen.

Figure 2: Panoramic X-ray.

Initially, intraoral and extraoral antisepsis were performed, respectively, with 0.12% chlorhexidine digluconate in mouthwash for 1 minute; and 2% chlorhexidine digluconate for topical use, followed by assembly of the operative field. Soon after, anesthesia of the anterior superior alveolar nerve and nasopalatine nerve was performed using 2% lidocaine associated with epinephrine at a concentration of 1:100,000 (figure 3). Once the effect of analgesia was achieved, an intrasucular incision was made around the mesiodens with a #15 scalpel blade, then the tissue around the mesiodens was detached with a Freer detacher, subsequently positioning forceps 150 in the neck region supernumerary and with movements of pressure, rotation and avulsion, the extraction of the tooth was performed (figures 4, 5, 6 and 7).

Figure 3: Intrasulcular incision.

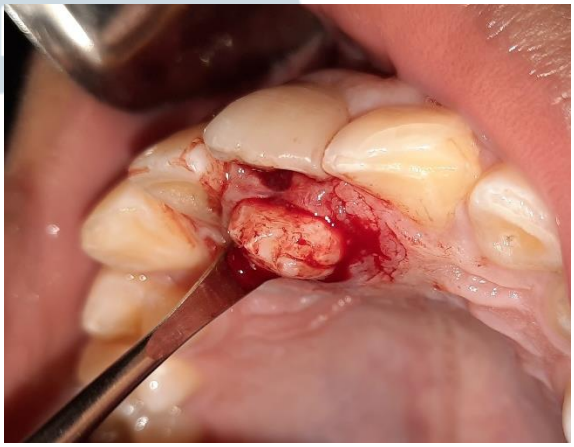

Figure 4: Detachment.

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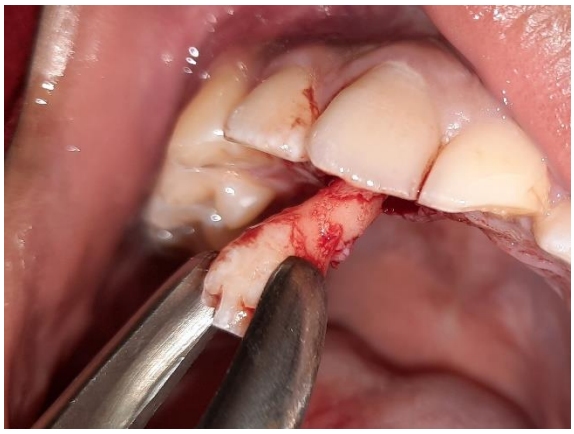

Figure 5: Exeresis.

Figure 6: Mesiodens removed.

Subsequently to removal, this area was irrigated with 0.9% saline solution, followed by curettage with Lucas curette #86. Using the same instrument, the clot was stimulated in the affected region. The synthesis was performed with simple stitches using 4-0 nylon thread. After the suture, the patient was positioned in maximum habitual intercuspation (MHI) for occlusal check, showing a favorable occlusion profile (figure 7).

Figure 7: MHI simulation after surgical procedure.

For postoperative care, the following were prescribed: anti-inflammatory (Nimesulide 100mg), 1 tablet every 12 hours for 3 days; and analgesic (Sodium dipyrone 500mg), 1 tablet every 6 hours for 2 days. After 10 days, he returned for the removal of the suture, which highlights the adequate tissue healing still in the process of repair and with its balanced occlusion (figure 8). The patient was referred to the dentistry clinic for restoration of tooth #21. He is still being followed up with no complaints or complications.

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Figure 8: Final clinical appearance.

DISCUSSION

The occlusal interference can lead to several oral problems that consequently cause damage to the functions of the stomatognathic apparatus.2.3 These changes are triggered at different times during the tooth development phase or at the time of dentition change due to internal consequences related to physiological processes; and/or external more associated with early loss.4.5 In addition, the formation of this condition triggered by physiological or pathological processes directly affect the patient's health, as it is related to the emergence of common problems such as: tooth wear; fractures; impaction; accentuated biofilm accumulation; and mainly aesthetic/functional damage.1-3

In the presence of developmental alterations such as supernumerary teeth, their permanence in the mouth can lead to a series oflosses, including: delay in the eruption of permanent teeth; tooth crowding; emergence of diastema; and/or carious lesions triggered by the difficulty of hygiene.7.11 For Dias et al. (2020)12 this anomaly does not result in direct damage to the individual, and other more conservative means can be used as a treatment without affecting the patient's health. Opting for permanence or removal is a choice of the professional, and its indication depends on the harmful factors already mentioned.8

The emergence of a supernumerary tooth can be developed not only in the deciduous dentition, but also in the permanent dentition.13 Theories still point out that despite presenting delimited characteristics, there is still doubt about the real factor for the appearance of this anomaly.12 It usually has a predisposition related to the male gender.14 Agreeing with Dias et al (2019)12, the patient presented in this report, belongs to the male gender. However, for Cammarata-Scalisi et al. (2018)5 the gender factor does not interfere with the appearance of the supernumerary, but factors of genetic origin do.

Despite being an anomaly, these teeth can be used in other ways, following conservatism as a principle, keeping them in the mouth, highlighting: dental

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repositioning through orthodontic movement and autotransplantation.16 According to Ambrosio et al. (2022)15 the use of supernumerary for dental autotransplantation has been a good treatment option in children and adolescents without causing harm. However, aesthetic and anatomical issues must be evaluated in these cases, as this treatment requires reanatomization, due to the alteration of the dental structure.16.17 However, it is a treatment with several limitations, from age to the stage of root formation, in addition to the need for long-term follow-up.15 In the present clinical case, we opted for the surgical approach to remove the mesiodens, indicated due to occlusal interference.

The supernumeraries may appear erupted in an arc, or completely intraosseous, in these cases requiring imaging tests to identify the actual positioning of the anomaly.10 Exams such as panoramic radiographs and cone-beam computed tomography (CBCT) are generally used for this identification.18 Panoramic radiographs provide an overview of the entire maxillo/mandibular region, however, without greater precision, while CBCT shows the artifact in size and position with greater precision.17.18 Second Ribeiro et al. (2016)18 It is Boeddinghaus and Whyte (2018)10 it is common to first request a panoramic radiograph in the preoperative examination for dental surgeries or orthodontic documentation, so that in the second moment the CBCT is chosen. In the present clinical case, the request for CBCT was not chosen, as the panoramic radiography was sufficient for the final diagnosis.

For Nuvvula et al. (2021)11 the excess of teeth in the mouth can cause tooth displacement, interfering with phonetics and chewing. Seehra et al. (2023)7 and Pescia et al. (2020)8 reinforce that removal can also be indicated by the dentist to improve aesthetic/functional factors. In the present case report, in agreement with the aforementioned literature, surgical removal was chosen due to clinically evident occlusal difficulties.

CONCLUSION

Therefore, in view of the clinical resolution presented, the treatment was satisfactory, allowing the advancement to the restorative stages, and returning a normal pattern of the patient's occlusal profile.

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