Scientific Investigation in Dentistry – SID

2317-2835

Caso Clínico http://periodicos.unievangelica.edu.br/index.php/scientificinvestigationindestist

SURGICAL INTERVENTION IN A TOOTH WITH LATE ERUPTION USING THE ULECTOMY TECHNIQUE: A CASE REPORT

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Informação sobre o manuscrito

Recebido em: 14 Jun 2023

Aceito em: 04 Out 2023

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ABSTRACT

The objective of this case report is to report a surgical approach as therapy for teeth with late eruption. Patient 11 years old, a female, feoderma, attended the dental clinic at Nilton Lins University accompanied by her mother. She presented that her main complaint was discomfort when chewing on the right side. The clinical examination revealed the absence of deciduous teeth, thus characterizing the end of the denture transition period, extensive caries lesion on tooth 36, and increased gingival volume preventing the eruption of tooth 25. Given the clinical condition, the proposed treatment plan was the indication of endodontic therapy on tooth 36 due to the symptomatic irreversible pulpitis presented by the patient who responded positively to the pulp vitality test, followed by ulectomy on tooth 25. The respective procedures were performed, obtaining a satisfactory immediate appearance of the clinical crown. After the 15-day follow-up period, the patient returned, where the scar tissue and tooth adaptation to the underlying structures stood out. Therefore, through post-operative monitoring, a satisfactory surgical intervention can be demonstrated, meeting the expectations, and returning the reported teeth to their main functions.

KEY-WORDS: *pediatric dentistry, oral surgery, oral diagnosis.*

INTRODUCTION

The absence of dental function is directly related to several etiological factors.[1] Among the most notable factors are gingival inflammation; carious lesions; associated pathologies; and lack of contact with the opposing tooth.[1,2] Internal conditions can also lead to one of the pathologies leading to the evolution of clinical characteristics, impairing the process of eruption of the tooth.[2]

When the tooth is still in the process of eruption, the lack of function can lead to a condition of late eruption (LE), resulting in partially erupted permanent teeth or out of the axis of occlusion due to deviation in the gubernacular canal.[3,4] Another factor is gingival hyperplasia which is a common condition that may be related to this condition.[5] Hyperplasia is tissue growth lesions responsible for covering functionless teeth, preventing them from erupting completely. In these cases, surgical intervention is necessary.[3,5]

Regarding the diagnosis of LE, the chronology of eruption of permanent teeth by age must be evaluated, as there is an appropriate time for eruption in the arch.[6] During the anamnesis, to obtain a correct diagnosis, it is necessary to correlate family history, age, time of loss of deciduous teeth, and missing teeth, together with radiographic exams, responsible for verifying the stage of Nolla in which the tooth is found.[6,7] In addition, it is necessary to observe whether any bone or pathological factors are preventing a complete eruption.[8]

Current dentistry has several resources for complementary exams that help in diagnosis and treatment planning, but the most used are imaging methods.[9] In addition to periapical, interproximal, and/or panoramic radiographs, cone beam computed tomography (CBCT) has come out to improve diagnosis in dentistry, and it is also available as an additional examination option.[10] CBCT features three-dimensional imaging, where it is possible to evaluate certain structures through three different planes and, based on this, propose an individualized and more precise treatment plan.[11]

As for the chosen therapy, the positioning of the dental organ and the Nolla stage define the most indicated approach.[3,9] When the tooth is not in a favorable position for spontaneous eruption, occlusion is compromised.[8] Ulectomy is indicated in cases where the tooth is in a favorable position, however, covered by abnormally growing gingival tissue with a predominance of fibrous connective tissue, characterized as hyperplasia.[7,10] In cases of eruption path deviation, it is recommended to combine ulectomy with orthodontic traction.[11] The objective of the present case report is to describe a surgical approach as a therapy for a tooth with late eruption.

CASE REPORT

The patient was 11 years old, a female, feoderma, who attended the dental clinic of Nilton Lins University accompanied by her mother, presented her main complaint was discomfort when chewing on the right side. After signing the terms of consent by the person in charge, the treatment began. During the anamnesis, the mother informed that the daughter not only has unsatisfactory oral hygiene habits but also constantly consumes sugary food. In addition, she informed that the child does not have allergic processes or a family history of systemic alterations.

In the intraoral clinical examination, we observed the end of the transition period of the dentures, biofilm accumulation in the cervical area of the lower teeth, inactive caries lesion in the mesial of tooth 16, an indication of endodontic treatment in tooth 36, and increased in gingival volume interfering in the total eruption of the crown of tooth 25. Given the clinical condition, the treatment plan for the case was the indication of endodontic therapy for 36 due to symptomatic irreversible pulpitis presented who responded positively to the pulp vitality test, followed by surgical removal of hyperplasia to promote the eruption of tooth 25 (figures 1 and 2).

Figure 1: Initial clinical appearance.

Initially, the biofilm was removed through prophylaxis by associating stone pumice (SSplus, Qualybless, Maringá, PR, Brazil) to prophylactic paste (Shine, Maquira, Maringá, PR, Brazil) for better evaluation of dental structures. Then, topical anesthesia was performed in the region of the ascending ramus of the mandible with subsequent blockage of the inferior alveolar nerve using 2% lidocaine with epinephrine at a concentration of

1:100,000 to perform the removal of carious tissue and endodontic access to tooth 36. Immediately after access and provisional dressing, the middle superior alveolar nerve was anesthetized with peripheral complementation in the region of tooth 25 to perform the ulectomy.

Figure 2: Initial periapical radiograph.

Figure 3: The area was delimited using a periodontal probe.

Once the analgesic effect was achieved, the cut areas were delimited with the aid of a millimeter periodontal probe (figure 3). Subsequently to this step, using a #15 scalpel blade, an incision was made in the demarcated area. After cutting, syndesmotomy was performed followed by detachment of the hyperplastic gingival tissue using syndesmotomy and Freer detachment (figure 4). After the detachment was performed, Adson tweezers were used to hold the detachable tissue, and the #15 scalpel blade was used again for tissue removal. For postoperative care, anti-inflammatory drugs (600mg ibuprofen) 3 times a day for 3 days and analgesics (500mg sodium dipyrone) 4 times a day for 2 days were prescribed.

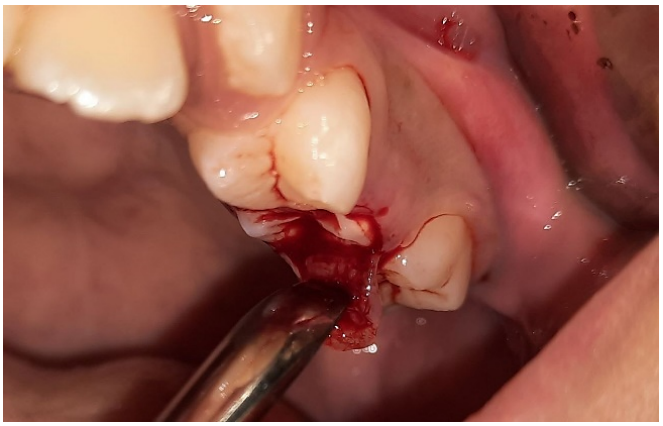

Figure 4: Tissue detachment.

The surgical specimen was immersed in a 10% formaldehyde solution and was referred to the Department of Pathology and Forensic Medicine at the Faculty of Medicine of the Federal University of Amazonas with a diagnostic hypothesis of reactive fibroepithelial hyperplasia. The hypothesis was confirmed by the histopathological report through the presence of inflammatory infiltrate and lining epithelium with an area of acanthosis.

In the immediate clinical aspect, the appearance of the crown of tooth 25 can be observed at the occlusal level in the oral cavity (figure 5). Subsequently, the patient was referred for endodontic treatment. After the 15-day follow-up period, the patient returned with endodontics performed, where the scar tissue and adequacy of tooth 25 with the underlying structures were also observed (figure 6). At the end of the 6 months, clinical and radiographic monitoring was carried out, noting a subtle movement of tooth 25 in the eruptive direction, thus confirming the effectiveness of the proposed treatment (figure 7). The patient is still under follow-up.

Figure 5: Immediate clinical appearance.

Figure 6: Clinical aspect after 6 months.

Figure 7: 6-month follow-up periapical radiograph.

DISCUSSION

LE has several etiologies that need to be identified at the time of the clinical examination to close the respective diagnosis so that a correct treatment plan can be developed according to the characteristics involved[15]. In this report, the absence of function associated with extensive carious lesions was the primary and predominant factor in concluding the differential clinical diagnosis. This condition is not always focused on only one etiological factor, there are cases in which there are two or more associated factors that lead to the development of this type of condition, such as the absence of antagonistic teeth, early loss of the eruption guide, and localized hyperplasia.[6,15]

There are still no clinical findings in the literature that prove the relationship between the involvement of gender or specific profile for the development of the disease, that is, it has an indeterminate character, characterized by the evolution of an associated primary pathology.[3] However, not only Barros et al. (2014),[16] but also Santos et al. (2021)[17] emphasize in their reports that females in different decades of life are more susceptible to conditions for the appearance of hyperplasia in the oral region, due to the amount of hormones produced. The patient in this clinical case belongs to the female gender in the same period of life, with onset due to the advancement of a primary lesion in the antagonistic region, a resolution described in both articles by the authors.

The need for a complementary imaging exam in cases involving tooth movement for arch positioning is indisputable.[9,10] Stokes et al. (2021)[12] state that, in cases of pre-operative imaging exams, there is the possibility of distortion of common radiographs that have a two-dimensional character and, indicating more faithful methods such as using CBCT to bring more precision to planning. In the present report, conventional radiography was used as a preoperative imaging test, considering the patient's financial condition and/or the impossibility of referring him to a radiological center. Furthermore, no involvement of the tooth in question with noble structures was observed.

According to Ventura et al. (2018)[6] it is necessary to know the chronology of tooth eruption, especially in mixed dentures, as this directly influences the planning and treatment to be carried out. The deep

carious lesion in the lower first molar 36 led to the development of symptomatic irreversible pulpitis in the clinical case addressed, a factor responsible for modifying the chronology of eruption of the premolars. A delay in the normal burst sequence may be indicative of a modifier being present[6]. According to Trindade et al. (2018)[18] pathologies are the main causes that lead to this type of alteration.

The treatment of choice is selected according to the factor resulting from the involvement of the pathology, which can be classified as surgical or non-interventional.[19] However, it is worth mentioning that although surgical removal is the most indicated, the prognosis is unfavorable when the etiological factor is not treated.[15] At the surgical level, removal of the hyperplastic content through an incision stands out as the simplest and easiest method to perform, avoiding more invasive surgical protocols.[3] In the clinical case, the patient presented pain resulting from pulpitis in the antagonist's tooth, which caused the absence of function in the hemi-arch.

There are other surgical treatment options for late erupting teeth used for the same purpose.[5] Among the main ones, the following stand out: the use of laser acting not only in hyperplastic removal but also in the healing action; and in more advanced cases, surgical traction.[14,20]

According to the characteristics presented in the follow-up of the patient after the completion of the case report, there was no need for more invasive treatments, as surgical removal with a scalpel blade was satisfactory in terms of clinical resolution.

The use of laser for surgical purposes is characterized by the exposure of light coming from the device, which can be presented at different levels of intensity.[21] For soft tissue procedures, the low intensity acts satisfactorily and independently, causing tissue cutting followed by cauterization, also helping in the healing of the surgical area, and avoiding infections or post-operative inflammations.[22] Despite having a vast literature, the use of laser in dentistry still has limitations due to cost, since compared to surgical removal with a scalpel blade in cases of hyperplasia, it has similar long-term results.[21,23]

CONCLUSION

Therefore, through the postoperative follow-up, a satisfactory surgical intervention can be evidenced, meeting the initial expectations foreseen, and returning the reported teeth to their determined functions.

RESUMO

O objetivo do presente trabalho é relatar uma abordagem cirúrgica como terapia para dente com irrupção tardia. Paciente 11 anos, gênero feminino, feoderma, compareceu a clínica odontológica da Universidade Nilton Lins acompanhada da mãe, apresentando como queixa principal incomodo ao mastigar do lado direito. No exame clínico constatou-se a ausência de dentes decíduos, caracterizando desta forma o fim do período de transição das dentaduras, lesão de cárie extensa no dente 36 e aumento de volume gengival impedindo o irrompimento da coroa do dente 25. Diante da condição clínica, o plano de tratamento proposto foi a indicação de terapia endodôntica do dente 36 devido ao quadro de pulpite irreversível sintomática apresentado pela paciente que respondeu positivamente ao teste de vitalidade pulpar, seguida da ulectomia do 25. Foram realizados os respectivos procedimentos, obtendo-se resultado satisfatório imediato com aparecimento da coroa clínica. Após o período de acompanhamento de 15 dias a paciente retornou onde destaca-se o tecido cicatrizado e adequação do dente às estruturas subjacentes. Portanto, mediante ao acompanhamento pós-operatório, pode-se evidenciar uma intervenção cirúrgica satisfatória atendendo as expectativas previstas, devolvendo os dentes relatados as suas determinadas funções.

PALAVRAS-CHAVE odontopediatria, cirurgia bucal, diagnóstico bucal.

REFERÊNCIAS

1. Rahul M, Gauba K, Gorwade N, Kumar A. Rare case report of idiopathic gingival fibromatosis in childhood and its management. BMJ Case Rep. 2019; 12(1): e227942.
2. Zou J, Meng M, Law CS, Rao Y, Zhou X. Common dental diseases in children and malocclusion. Int J Oral Sci. 2018 mar.; 10(1): 1-7.
3. Souza CM, Martins LR, Favretto CO. Ulectomia uma alternativa cirúrgica no retardo da erupção dentária: relato de caso. Arch Health Invest. 2021; 10(3): 392-5.
4. Andrade MA, et al. Relationship between oclusions and parafunctional habits in early childhood. Res Soc Dev. 2020; 9(7): e484974260.
5. Dias MSV, Santos KNC, Oliveira DC, Favretto CO. Cirurgia corretiva para hiperplasia gengival inflamatória após uso de aparelho ortodôntico fixo: relato de caso clínico. RSM. 2020 out.; 8(2): 40-4.
6. Ventura S, Dutra IT, Warol F, Barcelos R, Blaudt JD, Scarparo A. A importância da equipe multidisciplinar no manejo clínico frente à alteração na cronologia de erupção. Rev Rede Cuid Saúde. 2018; 12(1): 1-9.
7. Almeida LHS, Azevedo MS, Pappen FG, Romano AR. Hematomas de erupção: relato de três casos clínicos em bebês. RFO. 2015; 20(2): 222-6.
8. Carminatti M, Lavra-Pinto B, Franzon R, Rodrigues JA, Araújo FB, Gomes E. Impacto da cárie dentária, maloclusão e hábitos orais na qualidade de vida relacionada à saúde oral em crianças pré-escolares. ACR. 2017; 22: e1801.
9. Masyte V, Sefeldaite S, Venskutonis T. A questionnaire of digital radiography and cbct use and knowledge among Lithuanian dentists. J Oral Maxillofac Res. 2021 Mar 31;12(1):e2.
10. Lavanya R, Babu DB, Waghray S, Chaitanya NC, Mamatha B, Nithika M. A questionnaire cross-sectional study on application of CBCT in dental postgraduate students. Pol J Radiol. 2016 apr.;81:181-9.
11. Stokes K., Thieme, R., Jennings, E., Sholapurkar, A. Cone beam computed tomography in dentistry: practitioner awareness and attitudes. A scoping review. Aust Dent J. 2021; 66: 234–45.
12. Magro AK, Lauxen JR, Santos R, Pauletti RN, Magro ED. Laser cirúrgico no tratamento de hiperplasia fibrosa. RFO. 2013; 18(2): 206-10.
13. Shitsuka R, Maltarollo TH, Kubo H, Shitsuka C, Pedron IG. Comparação de técnicas cirúrgicas para dentes com atraso na erupção. e-Acadêmica. 2020; 1(1): e13.
14. Furlanetto PM, Ferreira ES, Mundstock KS. Tracionamento de incisivo central superior impactado com aparelho removível: relato de dois casos clínicos. Rev Fac Odontol. 2018; 59(2): 3-10.
15. Garib DM, Alencar BM, Ferreira FV, Ozawa TO. Anomalias dentárias associadas: o ortodontista decodificando a genética que rege os distúrbios de desenvolvimento dentário. Dental Press J Orthod. 2010; 15(2): 138-57.
16. Barros RMG, Campos KSM, Cabral LM. Relato de caso clínico de hiperplasia fibrosa inflamatória. Rev Odontol Araç. 2014; 2(35): 15-8.
17. Santos DPM, Iramatsu JM, Favretto CO, Silva JPP. Hiperplasia fibrosa inflamatória em mucosa oral: relato de caso. Arch Health Invest. 2021; 10(2): 292-5.
18. Trindade MGF, Oliveira MC, Prado JP, Santana LLP. Lesões associadas à má adaptação e má higienização da prótese total. Id Rev Mult Psic. 2018; 12(42): 956-68.
19. Candeiro JTM, Correa FC, Candeiro SALM. Ulectomia como opção cirúrgica no retardo da erupção dentária: relato de caso. Rev Odontol Araç. 2009; 30(2): 45-9.
20. Concepción DO, Durán JAC, Cardelles JFP, Rodrigues VMP, Serrano JG, Quiles JL. The application of diode laser in the treatment of oral soft tissues lesions: a literature review. J Clin Exp Dent. 2017; 9(7): 925-8.
21. Cavalcanti TM, Barros RQA, Catão MHCV, Feitosa APA, Lins RDAU. Knowledge of the physical properties and interaction of laser with biological tissue in dentistry. An Bras Dermatol. 2011; 86(5): 955-60.
22. Caprioglio C, Olivi G, Genovese MD, Vitale MC. Pediatric laser dentistry. Part 3: Dental trauma. Eur J Paediatric Dent. 2017; 18(3): 247-50.
23. Dompe Claudia, Moncrieff Lisa, Matys J, Grzech-Lesniak K, Kocherova L, Bryja A et al. Photobiomodulation-Underlying Machanism and Clinical Applications. J Clin Med. 2020; 9(6): 1724.