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ORTHODONTIC-SURGICAL THERAPY OF THE IMPACTED CENTRAL MAXILLARY INCISOR: A CASE REPORT

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The aim of this study was to clearly determine the possibility of treatment of impacted central incisor liberation in a 9-year-old girl, and then to bring the tooth to its natural place in the dentition in the shortest possible time interval. The paper presents the liberation of the impacted central incisor in a 9-year-old girl. Prior to the intervention, a detailed examination (CBCT) and analysis of all parameters were performed in order to determine the possibility of successful therapy of the impacted tooth. The orthodontic treatment plan included three steps—creation of space, exposure of crown, and forced eruption. After the surgical intervention of releasing the impacted central incisor, a button with a modified direct bonding method was placed in the same act, with a twisted wire by an orthodontist, and after removing the floss, the tooth was pulled with a fixed orthodontic appliance (SWA technique). Follow-ups were done every two weeks until the appearance of teeth in the mouth.The modified method of direct bonding of the button for the surface of the impacted tooth proved to be easier, compared to the conventional method. A quality diagnosis with an adequate multidisciplinary therapy gives a satisfactory result in the optimal time.A multidisciplinary diagnosis and therapy are becoming more and more present in dentistry, and the order of therapy should be taken into account. *Acta Medica Medianae 2023;62(1):71-78.*

Key words: *tooth impaction, closed flap, direct bonding, CBCT*

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Introduction

One of the most important reasons why patients come for orthodontic therapy is dissatisfaction with their appearance, primarily frontal teeth in the upper jaw. In addition to aesthetics, orthodontists are aware of the fact that these teeth in an adequate relationship with the lower teeth of the same region represent anterior guides, and their importance in addition to the aesthetic moment is invaluable in functional and physiological terms (1). A significant problem in the multidisciplinary sense related to the aesthetics but also the functionality of the orofacial region of our patients are dilatations of the central maxillary incisors, whose prevalence ranges from 0.06% to 0.2% (2).

The period of early mixed dentition of 7–9 years is the time when the symmetrical eruption of central maxillary incisors is expected and when orthodontists are included in synergy with oral surgeons on the beginning of liberation therapy of such impacted teeth, whose planning and therapy can be relatively long and complex (3–5). The treatment of such challenging cases is often accompanied by complications such as ankylosis of the teeth, external resorption of tooth roots and the possibility of unwanted resorption of adjacent teeth (3, 6), primarily the maxillary lateral incisor on the impaction side, which leads to extra caution when extracting these teeth using fixed orthodontic appliances and applying force to the dilated tooth.

Dilacerations occur after a trauma in the area of deciduous teeth, where the bud of a permanent developing tooth is damaged due to the close proximity of a deciduous tooth that came in contact with it. The degree of the damage to a permanent central incisor depends on the developmental phase of a tooth, as well as on the type and direction of a trauma (6) on which the formation of the angle between the crown and the started growth of the root of the central maxillary incisor will depend. The angle formed between the two structures (crown and root of the dilated

tooth) will decide on the type of therapy. If the mentioned angle of the dilated central incisor was not formed, the orthodontic treatment should be started as soon as possible to avoid secondary problems (7). Orthodontic-surgical liberation can be done at a later age with biomechanical knowledge in order to choose the optimal system of forces for the application of an appropriate traction (8, 9).

The aim of treatment of the impacted tooth in this case was a proper alignment in the dental arch, in a stable position with obtaining the highest quality gingival tissue around the cement enamel border of the tooth.

Case presentation

The patient was a 9-year old girl in excellent physical health who came to the Department of Jaw Orthopedics at the Clinic of Dental Medicine in Niš. The patient intraoral examination showed late mixed dentition. Intraoral examination revealed Class I molar relationship with an overbite of 3 mm and an overjet of 2 mm. The upper central left crown of the incisor was fractured to 1⁄3 its original size. The periodontal health was good, with acceptably good oral hygiene. Facial proportions were normal. Her parents mentioned a traumatic episode at the age of five. A panoramic radiograph showed the presence of all the permanent teeth buds and impacted central incisor on the right side of the upper jaw in the horizontal labial position, where it was not possible to determine the relationship and possible existence of the crown and root of the impacted tooth, but its high position and at right angles crowns, relative to the direction of tooth eruption, could be observed.The left central incisor was fractured in the area of the incisal third (Figure 1), and had to be restoratively upgraded in order to have an optimal vision of the incisal plane to which we would have to lower the right maxillary central incisor during its traction. It was not possible to obtain more information regarding morphology and exact dimensions and positions of the impacted upper central incisor based on orthopantomography and occlusal image of the upper jaw, so a three-dimensional image of this region was performed on a CBCT device (Sirona, Orthophos SL 3D, Germany).

Orthopantomography as well as occlusal images play a key role in diagnosis, therapy planning and type of therapy, as well as in the prognosis of very complex and complex cases in which two-dimensional images are not able to accurately locate certain and above details (Figure 2a). The previous two-dimensional images have replaced new technologies for imaging the orofacial region, where in such cases CBCT is the method of choice in making an adequate diagnosis, prognosis and final treatment plan. The superiority of the CBCT technique for imaging impacted teeth was presented in our case, which greatly facilitated the consultations of orthodontists and surgeons, and dispelled unknowns and possible doubts that existed during the analysis of both the patient and two-dimensional images. (Figure 3). Also, CBCT images provided the orthodontist with a complete analysis of how and in what way to approach orthodontic therapy after surgery.

Figure 1. Fixed device with twisted wire installed after surgical interventions

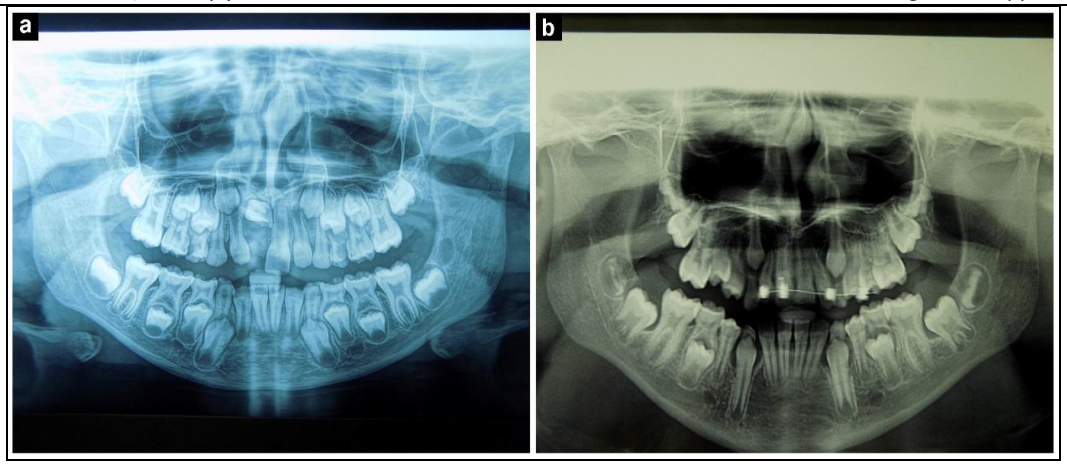

Figure 2. Orthopantomographic image of a girl with the impacted central maxillary incisor on the right side (a-before and b-after therapy)

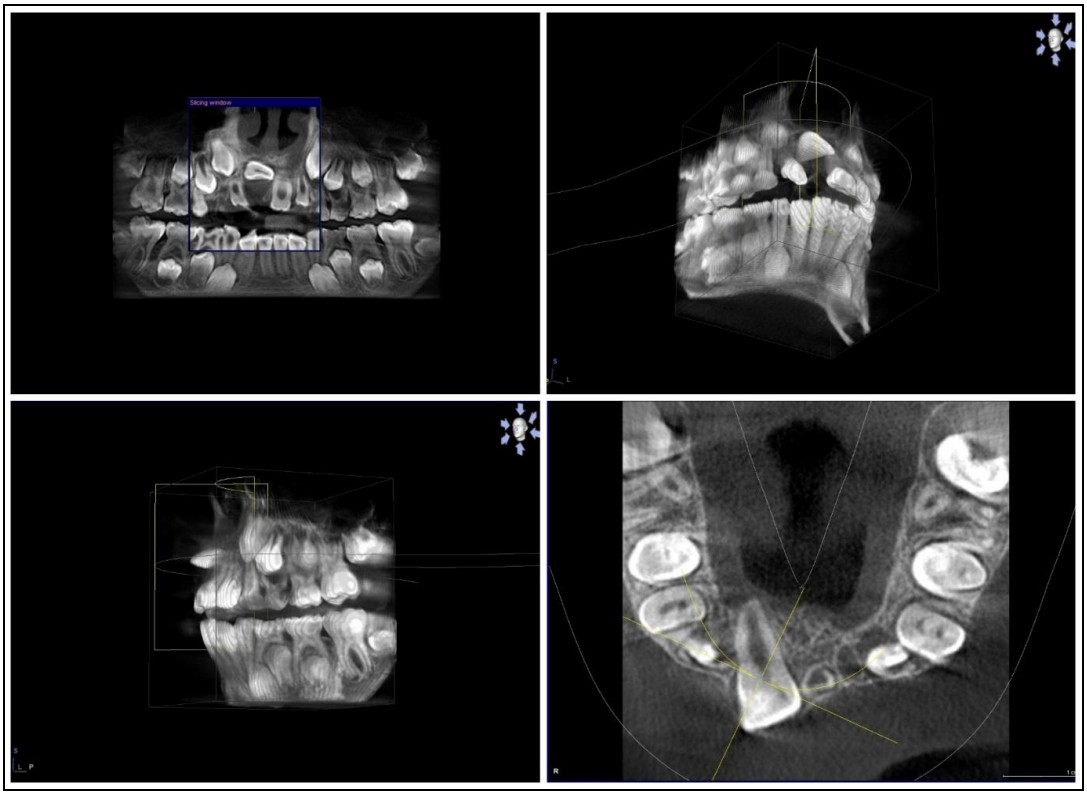

Figure 3. Pretreatment CBCT image of a child with the impacted maxillary right central incisor in different positions of the impacted tooth

Treatment objectives

The goal of the therapy was to extrude the tooth by applying appropriate pulling forces to the elements of fixed orthodontic appliances on the dilated tooth without an excessive effect which could jeopardize the integrity of the not yet fully formed root of the dilated tooth. Tooth extrusion was followed by straightening the dilated tooth from horizontal to vertical position, taking into account the surrounding bone and gingival architecture in order to meet all functional parameters in addition to the functional result, which posed an additional challenge to surgery.

The approach was multidisciplinary involving a combined surgical-orthodontic treatment.

Treatment options

The following are three possible treatment options:

1. Creation of space for impacted tooth, surgical crown exposure and liberation of impacted tooth orthodontically;
2. Extraction of the impacted central incisor and temporary restoration with removable orthodontic appliance, followed by a permanent restoration of the left central incisor;

3. Extraction of the impacted central incisor and closure of the space, converting the lateral incisor into the central incisor with orthodontic fixed appliances with subsequent prosthetic restoration after the growth ceases.

The prognosis of dilacerated tooth liberation depends primarily on: 1.the position and direction of the impacted tooth; 2. the degree of formation of the impacted root; 3. the degree of dilaceration (if a larger angle is formed between the crown and the root of the dilacerated tooth); 4. the size of the space for storing the impacted tooth in the dentition (10−14).

Treatment progress

After acquainting the parents with the diagnosis, treatment plan and uncertainty of the orthodontic-surgical liberalization of the dilated tooth, who understood and orally and in writing agreed with the explanations from the orthodontist and the surgeon, the therapy began.

The treatment plan was to place a button with twisted wire in an adequate place on the tooth after surgical liberation of the dilacerated tooth, to apply optimal force to orthodontic appliances when pulling the impacted tooth, to create previously a reduced space for placing the dilacerated tooth in the dentition,taking care not to disturb the integrity of the surrounding tissue, taking into account the shorter and thinnerroot of the lateral incisor on the side of the dilacerated tooth in order to avoid resorption of the root of the same during liberation and traction of the impacted central incisor.

The challenge of this case was to correctly position the brackets onthree frontal teeth vertically, and after the surgery to apply optimal traction that would not put too much strain on the lateral incisor on the side of the dilacerated tooth. First, metal orthodontic brackets with inch slot .022"(Mini sprint, Forestadent, Germany) were placed on the central incisor on the left side, lateral incisors and tubes on the molars, a .014" NiTi arch (G & H Wire Co., Indiana, USA) with an open spring between the central incisor on the left and the lateral incisor on the right. An additional problem was the vertical positioning of the bracket on the central incisor on the left side due to the earlier fracture of the crown of that tooth, where on such a shorter crown of the tooth, the positioning of the bracket had to be bonded rather more gingivally than using the established way of positioning. Care was taken to align the position on the lateral incisors with the positioning of the bracket on the central incisor, in order to avoid excessive supraposition. After verifying the position of the dilacerated central incisor on the right side of the upper jaw with CBCT, as well as determining the non-existent angle between the crown and its root, surgical lifting of the mucoperiosteal trapezius lobe was performed according to Novak-Potter, from the canine region on the right side. After the lobe was lifted, the bone above the labially placed crown of the impacted canine was removed. Round steel drill bits with constant cooling by a physiodispenser were used. After exposure the crown of the tooth from excess bone and hemostasis, already prepared orthodontic button (World Class Technology Corporation, USA) with sterile braided wire (Forestanit® Super weich, Forestadent, Germany) 0.5 mm in diameter was placed on the labial surface of the tooth. Conditioning of the labial surface of the tooth was done with 37% orthophosphoric acid in the gel (Orthodontic Bonding System, Acid Etch, Dentaurum, Germany) for 20 seconds. The acid in the gel was then removed with a moist cotton roll and washed with saline. After drying the tooth surface, the orthodontic button was placed using Transbond XT adhesive material (Transbond XT, 3M Unitek, USA). Due to the very difficult and inaccessible position of the dilacerated central incisor, and due to the proximity of surrounding soft tissue and the presence of blood and oral fluids, the conditioned tooth surface was left dry and without primer, while the orthodontist had constant visual control over the working field and so disabled mixing with saliva that could be concealed if the primer was applied to a part of the conditioned enamel. An adhesive was placed over the primer (Transbond XT Primer, 3M Unitek, USA) on the button base, a primer brush was applied over the adhesive material, and its penetration into the lattice base of the button base was performed with light pressure. In this way, a sufficient amount of thin adhesive was provided on the surface of the button base and at the same time, the excess adhesive was removed during the placement with a sharp scaler, thus avoiding additional button movement. Just before placement the button, we pointed the light source (LED light) on the work unit to the side to avoid premature polymerization of the adhesive. After placing the button with twisted wire, the surface of the impacted tooth was polymerized for 20 seconds with a light-emitting diode lamp Woodpecker Dental Curing Light (LED B. Curing Light, Guangxi, China) with a light intensity of 1200−1400 mW/cm2, optical wavelength 420−480 nm; voltage of 3.7 V; 1500 mAh and with a minimum distance in relation to the set button. After the button was placed, the mucoperiosteal lobe was put back in place and sutured with individual sutures (SMI, AG-Belgium silk usp 3/0) with a round needle (hr-20).In the same operative act, after the fixation of the lobe, a frenectomy of the labial frenulum was performed.

Two months after the operation, and the leveling of the front teeth, the patient was placed in a .016"Ni-Ti round archwire (G&H Wire Co., Indiana, USA). On recent wire, Ni–Ti open coil

(American Orthodontic, Sheboygan, Wisconsin, USA) was used to provide proper space. The same Ni–Ti open coil was maintained to keep proper space. The twisted wire was twisted slightly around a .016"Ni-Ti arc every seven days, with the aim of achieving a constant light force continuity when lowering the impacted tooth. This type of activation is very simple and fast, so it takes less time spent in a dental chair but requires diligent patient behavior, in the form of regular check-ups. Less manipulation during wire activation will cause less pain and discomfort to patients, but also less chance of ligature wire breakage or even button detachment on the impacted tooth.

Treatment results

After the tooth appeared up to half of its crown, the button on the buccal surface was removed and replaced with a bracket for the right central incisor, the .014" Ni-Ti arch was restored and ligation with rubber bands was performed. After 9 months of orthodontic therapy, the dilated central incisor on the right side was brought to the dentition where it took another two months to obtain an adequate incisal plane correlated with the incisal edges of the lateral incisors, and 1/3 of the central incisor on the left side had to be restoratively replaced, which was another challenge (Figure 4). The repositioned incisor had slightly irregular gingival contour. The post-treatment radiograph (Figure 2b) showed no resorption of roots, no alveolar bone loss and no resorption of the root of lateral incisor on the right side who suffered the greatest force of orthodontic traction during the liberation of the dilated central incisor.

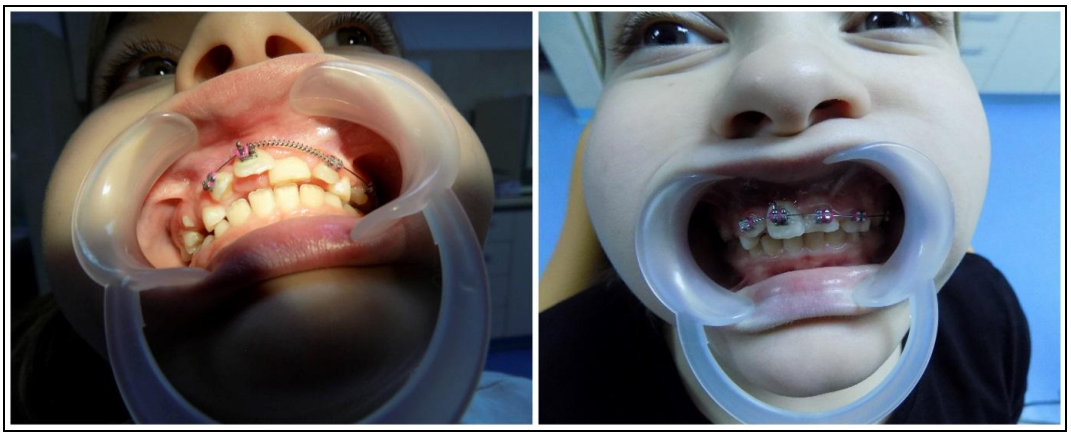

Figure 4. Intraoral photograph after 9 months of surgical therapy

Discussion

Since dilacerated central incisors are usually above the mucogingival border, the use of a closed eruption technique can provide adequately better gingival contours when the incisor is leveled (11–13). Studies have shown that smaller recessions provide better bone support and superior periodontal parameters by the closed eruption method (14, 15).

Early therapy is of key importance because it enables more adequate development and better morphology of the root tip of the dilacerated tooth, which reduces the possibility of losing alveolar bone on the labial side (16). Most orthodontists believe that dilaceration of the central incisors is a consequence of trauma, but Stewart (17) in his study, which included 41 cases of dilacerated incisors, found that trauma accounted for only 9 cases (22%) and concluded that the cause of dilacerated teeth is the ectopic position of their germs.

Although there are a large number of etiological factors, it is believed that the occurrence of dilacerated central incisors is not fully explained (18–20). As the crowns of maxillary dilacerated incisors are located labially and often near the floor of the nasal cavity, the most common technique used is the closed eruption technique because it is difficult to extract such impacted incisors through the middle ridge using only the elements of the button.

This position of the dilacerated tooth was also in the case of our patient, where the crown of the tooth was positioned horizontally. Factors that are important in deciding on the type of surgical approach to dilacerated incisors depend on the amount of keratinized gingiva that surrounds the tooth crown, the location of the incisal edge and its relationship with the mucogingival joint (21).

It is recommended that the technique of so-called "open window" can lead to an increase in the length of the clinical crown of the tooth as well as to a recognizable scar on the gingiva (22), which is physiologically and aesthetically unacceptable.

A significant increase in the thickness of the alveolar bone occurs in the area of the labial cervical third of the root of the central incisor. These changes may be influenced by incisor position and inclination, orthodontic technique and force applied, and bone remodeling capacity during the retraction (23, 24).

Based on the initial analysis of the position of the dilacerated tooth, the priorities of orthodontic therapy were: extrusion of the impacted tooth, straightening and bringing the tooth into the dental arch. This would establish an adequate function and optimal aesthetics of the growing patient, while preserving the integrity of the periodontium and the surrounding gingival architecture. Orthodontic-surgical treatment of dilacerated maxillary incisors is generally successful but long lasting (25–27). As the phase of orthodontic-surgical liberation of dilacerated incisors begins in mixed dentition, patients very often need the second phase of comprehensive orthodontic therapy. The slow and low but continuous orthodontic traction resulted in good periodontal and periapical health of the tooth. This traction can stimulate root development as well as alveolar bone remodeling (28, 29), thus creating good conditions for normal development of the surrounding gingival tissue, and so avoiding possible later periodontal interventions to improve aesthetics in the frontal region. Effective torque control is the key to a successful therapy of dilacerated teeth, but also very often a challenge when using more conventional metal orthodontic brackets, especially for teeth with shorter and thinner roots, such as lateral incisors (22). Special attention was paid to this moment in order to avoid overloading that the root of the lateral incisor on the side of the dilacerated tooth could suffer. After bringing the dilacerated tooth into the dentition and equalizing and obtaining the appropriate incisal plane as well as the relationship with the surrounding gingivo-dental parameters, the inclination of the front teeth was performed with .019 × .025" stainless steel wire.

Surgical-orthodontic therapy of dilacerated maxillary incisors requires a longer period of time, which can last up to over a year, depending on a number of factors. Assessing the patient's age, crown height, degree of impaired incisor root dilatation as well as crown length can help the orthodontist to better predict the duration of therapy during consultations with patients and parents (30−32). The orthodontic liberation of the impacted central incisor in our case lasted 9, and its placement in the dental arch lasted 11 months.

In this case, the success of the surgical reposition of the horizontally placed permanent central incisor will depend on the degree of tooth root formation. The early phase of root formation would have a far better prognosis for the surgical intervention of a horizontally placed maxillary permanent central incisor with incompletely developed root part, a fact that guided the authors of this paper.

Conclusion

This work showed that good diagnostics supported by CBCT scanner, adequate multi-disciplinary approach, quality therapy with modified application of orthodontic button placement on impacted tooth, gives satisfactory result in an appropriate time period.

References

1. Huber KL, Suri L, Taneja P. Eruption disturbances of the maxillary incisors: a literature review 1: J Clin Pediatr Dent 2008; 32(3): 221-30. [CrossRef] [PubMed]
2. Grover PS, Lorton L. The incidence of unerupted permanent teeth and related clinical cases. Oral Surg Oral Med Oral Pathol 1985; 59: 420-5. [CrossRef] [PubMed]
3. Singh GP, Sharma VP. Eruption of an impacted maxillary central incisor with an unusual dilaceration. J Clin Orthod 2006; 40: 353-6. [PubMed]
4. Vermette ME, Kokich VG, Kennedy DB. Uncovering labially impacted teeth: Apically positioned flap and closed-eruption techniques. Angle Orthod 1995; 65: 23-32. [CrossRef] [PubMed]
5. Miloglu O, Cakici F, Caglayan F, Yilmaz AB, Demirkaya F. The prevalence of root dilacerations in a Turkish population. Med Oral Patol Oral Cir Bucal 2010; 15: e441-4. [CrossRef] [PubMed]
6. Brin I, Zilberman Y, Azaz B. The unerupted maxillary central incisor: review of its etiology and treatment. ASDC J Dent Child 1982; 49(5): 352-6. [PubMed]

7. Elefteriadis JN, Athanasiou AE. Evaluation of impacted canines by means of computerized tomography. Int J Adult Orthodon Orthognath Surg 1996; 11(3): 257-64. [PubMed]
8. Lu P, Chew MT. Orthodontic-surgicalmanagement of an unusual dilacerated maxillary incisor. J Orthod Sci 2018; 7:24. [CrossRef] [PubMed]
9. Tanaka E,Hasegawa T, Hanaoka K, Yoneno K, Matsumoto E, Dalla-Bona D et al. Severe crowding and a dilacerated maxillary central incisor in an adolescent. Angle Orthod 2006; 76: 510-8. [CrossRef] [PubMed]
10. Noorollahian S, Shirban F. Chair time saving method for treatment of an impacted maxillary central incisor with 15-month follow-up. Dent Res J 2018; 15: 150-4. [CrossRef] [PubMed]
11. Lin YTJ. Treatment of an impacted dilacerated maxillary central incisor. Am J Orthod Dentofacial Orthop 1999; 115: 406–9. [CrossRef] [PubMed]
12. Tanaka E, Watanabe M, Nagaoka K, Yamaguchi K, Tanne K. Orthodontic traction of an impacted maxillary central incisor. J Clin Orthod 2001; 35: 375–8. [PubMed]
13. Pinho T, Neves M, Alves C. Impacted maxillary central incisor: surgical exposure and orthodontic treatment. Am J Orthod Dento-facial Orthop 2011; 140: 256-65. [CrossRef] [PubMed]
14. Becker A, Chaushu G, Chaushu S. Analysis of failure in the treatment of impacted maxillary canines. Am J Orthod Dentofacial Orthop 2010; 137: 743-54. [CrossRef] [PubMed]
15. Chaushu S, Dykstein N, Ben-Bassat Y, Becker A. Periodontal status of impacted maxillary incisors uncovered by 2 different surgical techniques. J Oral Maxillofac Surg 2009; 67: 120-4. [CrossRef] [PubMed]
16. Sun H, Hu R, Ren M, Lin Y, Wang X, Sun C, Wang Y. The treatment timing of labial inversely impacted maxillary central incisors: A prospective study. Angle Orthod 2016; 86(5): 768-74. [CrossRef] [PubMed]
17. Stewart DJ. Dilacerate unerupted maxillary central incisors. Br Dent J 1978; 145: 229-33. [CrossRef] [PubMed]
18. Topouzelis N, Tsaousoglou P, Pisoka V, Zouloumis L. Dilaceration of maxillary central incisor: a literature review. Dent Traumatol 2010; 26(5): 427-33. [CrossRef] [PubMed]
19. Wei YJ, Lin YC, Kaung SS, Yang SF, Lee SY, Lai YL. Esthetic periodontal surgery for impacted dilacerated maxillary central incisors. Am J Orthod Dentofacial Orthop 2012; 142: 546-51. [CrossRef] [PubMed]
20. Vermette ME, Kokich VG, Kennedy DB. Uncovering labially impacted teeth: Apically positioned flap and closed-eruption techniques. Angle Orthod 1995; 65: 23-32. [CrossRef] [PubMed]
21. Jiang Q, Yang R, Mei L, Ma Q, Wu T, Li H.A novel approach of torque control for maxillary displaced incisors. Am J Orthod Dentofacial Orthop 2019; 155(6): 860-70. [CrossRef] [PubMed]
22. Lyu J, Lin Y, Lin H, Zhu P, Xu Y New clues for early management of maxillary impacted central incisors based on 3-dimensional reconstructed models. Am J Orthod Dentofacial Orthop 2018; 154(3): 390-6. [CrossRef] [PubMed]
23. Domingo-Clérigues M, Montiel-Company JM, Almerich-Silla JM, García-Sanz V, Paredes-Gallardo V, Bellot-Arcís C. Changes in the alveolar bone thickness of maxillary incisors after orthodontic treatment involving extractions - A systematic review and meta-analysis. J ClinExp Dent 2019; 11(1): e76-e84. [CrossRef] [PubMed]
24. Chaushu S, Becker T, Becker A. Impacted central incisors: Factors affecting prognosis and treatment duration. Am J Orthod Dentofacial Orthop 2015; 147: 355-62. [CrossRef] [PubMed]
25. Ho KH, Liao YF. Predictors of surgical-orthodontic treatment duration of unilateral impacted maxillary central incisors. Orthod Craniofac Res 2011; 14: 175-80. [CrossRef] [PubMed]
26. Farronato G, Giannini L, Galbiati G, Maspero CA. 5-year longitudinal study of survival rate and periodontal parameter changes at sites of dilacerated maxillary central incisors. Prog Orthod 2014; 15: 3-8. [CrossRef] [PubMed]
27. Cheng C, Li X, Liu H. Evaluation of the orthodontic treatment outcome in patients with impacted maxillary central incisor in the mixed dentition. Zhonghua Kou Qiang Yi XueZaZhi 2016; 51(5): 263-8. [CrossRef] [PubMed]
28. Nallanchakrava S, Mettu S, Reddy NG, *et al*. Multidisciplinary Approach for the Management of Dilacerated Permanent Maxillary Incisor: A Case Report. Int J Clin Pediatr Dent 2020; 13(6): 725-8. [CrossRef] [PubMed]
29. Khera AK, Rohilla A, Tandon P, Singh GP. Orthodontic management of impacted central incisor: A clinical challenge. J Indian Orthod Soc 2017; 51: 46-50. [CrossRef]
30. Bhikoo C, Xu J, Sun H, Jin C, Jiang H, Hu R. Factors affecting treatment duration of labial inversely impacted maxillary central incisors. Am J Orthod Dentofacial Orthop 2018; 153(5): 708-15. [CrossRef] [PubMed]
31. Felicita AS. Orthodontic management of a dilacerated central incisor and partially impacted canine with unilateral extraction - A case report Saudi Dent J2017; 29(4): 185-93. [CrossRef] [PubMed]
32. Singh H, Kapoor P, Sharma P, Dudeja P, Maurya RK, Thakkar S. Interdisciplinary management of an impacted dilacerated maxillary central incisor. Dental Press J Orthod 2018; 23(3): 37-46. [CrossRef] [PubMed]

Prikaz bolesnika

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ORTODONTSKO-HIRURŠKA TERAPIJA IMPAKTIRANOG, CENTRALNOG, MAKSILARNOG SEKUTIĆA – PRIKAZ SLUČAJA

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Cilj ovog rada bio je da se precizno utvrdi mogućnost terapije liberacije impaktiranog centralnog sekutića kod devojčice starosti devet godina, a zatim da se u što kraćem vremenskom intervalu zub dovede na svoje prirodno mesto u zubnom nizu. Pre intervencije pristupilo se detaljnom pregledu (CBCT) i analizi svih parametara, kako bi se utvrdila mogućnost uspešne terapije impaktiranog zuba. Ortodontski plan terapije sastojao se od tri koraka – kreiranje prostora, ekspozicija krunice zuba i forsirana erupcija. Nakon izvršene hirurške intervencije oslobađanja impaktiranog centralnog sekutića, u istom aktu postavljeno je dugme modifikovanom direktnom metodom bondiranja sa upredenom žicom od strane ortodonta, te se nakon skidanja konaca pristupilo vuči ovakvog zuba, pomoću fiksnog ortodontskog aparata (SWA tehnika). Kontrole su rađene na dve nedelje do pojave zuba. Nakon uspešnog izvlačenja impaktiranog zuba i njegovog postavljanja u zubni niz, pristupilo se restauraciji susednog centralnog sekutića sa leve strane, kako bi se dobila adekvatna veličina istog, ali i incizalna ravan, koja bi zadovoljavala sve funkcionalne i estetske parametre vezane za ovo doba deteta. Modifikovana metoda direktnog bondiranja dugmeta za površinu impaktiranog zuba pokazala se kao olakšana metoda, u odnosu na konvencionalnu metodu. Kvalitetna dijagnoza uz adekvatnu multidisciplinarnu terapiju daje zadovoljavajući rezultat u optimalnom vremenu. *Acta Medica Medianae 2023;62(1): 71-78.*

Ključne reči: *: impakcija zuba, hirurgija, ortodoncija, CBCT*