CASE REPORT
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Multidisciplinary approach in the rehabilitation of partial edentulousness – adjunctive orthodontic and subsequent prosthodontic treatment

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SUMMARY

Introduction Malocclusions in partially edentulous patients represent a special rehabilitation challenge in dentistry. In patients who, in addition to orthodontic problem, also have a certain number of missing teeth, it is necessary to approach in a multidisciplinary manner. This approach implies a synergy of conservative, orthodontic and prosthetic treatment.

The aim of this paper was to present a patient with partial edentulism including upper left canine palatally located that was successfully rehabilitated with orthodontic and subsequent fixed prosthodontic treatment.

Case report The clinical examination of the 24-year-old patient was followed by additional orthodontic analysis that included analysis of study models, X-rays, and photographs. The patient was found to have ectopic teeth 13 and 23, reverse overbite of the tooth 12, and tooth 26 was extracted in childhood. Due to the prevalence of carious lesions and tooth destruction, the attending dentist planned extraction of teeth 16, 14, 24, 25. It was decided to conduct adjunctive orthodontic treatment in order to achieve tooth levelling and move teeth to the positions planned in the previous analysis. After completion of orthodontic treatment, fixed prosthodontic work was done to achieve complete functional and aesthetic rehabilitation.

Keywords: partial edentulousness; adjunctive orthodontics; ectopia; zirconia

INTRODUCTION

According to the criteria of the World Health Organization, edentulous patients are categorized as people with physical disabilities due to difficulties in achieving proper chewing and speech [1]. Research and reports by the World Health Organization indicate that the edentulism in the population of Bosnia and Herzegovina over the age of 65 is as high as 78% [2]. Often, missing teeth are accompanied by a certain degree of malocclusion. There are various methods of classification of partial edentulousness, of which Kennedy's is the most common. According to this classification, Class I represents bilateral edentulous areas, Class II unilateral edentulous areas, Class III unilateral edentulous area with natural teeth remaining both anterior and posterior to it, and Class IV represents the edentulous space in the front area [3]. Although there is a large amount of research on the frequency of Kennedy's classification and choice of treatment, unfortunately, such data are not available for the population of Bosnia and Herzegovina. The therapeutic approach of partial edentulousness in relation to the degree of severity and patient's age may include mobile prosthodontic replacement, fixed prosthodontic replacements and implant- prosthodontic rehabilitation. A special challenge in the care of partially edentulous patients is when, in addition to the primary problem, there is present malocclusion of remaining teeth including tooth ectopy. The palatal position of the ectopic canine is twice as common as the buccal position [4].

Adjunctive orthodontic treatment of adult patients is used as a pre-treatment in dental rehabilitation when the aim is to correct the position and arrangement of existing teeth and use them to replace those that are missing. Such treatment requires a more comprehensive treatment plan. Due to adjunctive orthodontic therapy in adult patients, it is possible to move teeth in order to facilitate subsequent dental treatments. Adjunctive orthodontic treatment is coordinated with other procedures included in the treatment plan, periodontal and restorative. Typically, only a part of the teeth is included in the fixed orthodontic appliance, and the treatment itself lasts several months to a year, sometimes a little longer. With such orthodontic treatment, the aim is to achieve reposition of teeth that have moved to edentulous space due to premature tooth loss (extraction) and thus to get optimal to ideal conditions for prosthodontic rehabilitation. With this treatment, the teeth are levelled for the best possible aesthetical restoration; fractured teeth are moved in order to make satisfactory crowns. The planning of adjunctive therapy is based on a list of problems and represents a complex process where the teamwork of

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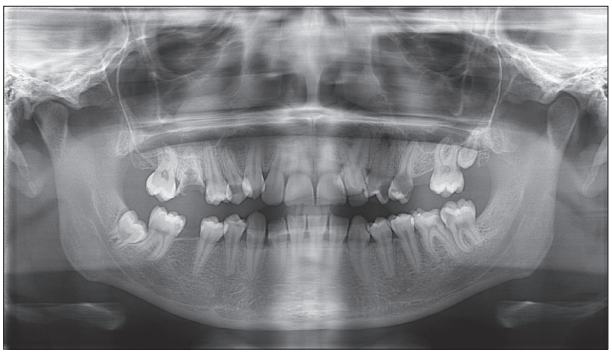

Figure 1. Initial ontopantomogram
Slika 1. Početni ortopantomogram

Figure 2. Intraoral photo showing teeth position and condition after extraction of upper right first premolar and first molar, and upper left first and second premolar
Slika 2. Intraoralna fotografija koja opisuje položaj zuba i stanje nakon ekstrakcije gornjeg desnog prvog premolara i prvog molara, te gornjeg levog prvog i drugog premolara

several therapists is required. In the dental team, the key professional is the restorative dentist, while the orthodontist is the one who allows better implementation of the restoration plan. The decision on how to treat a partially edentulous patient is made after creating the full treatment plan, i.e., clinical examination, analysis of X-rays and photographs. Prior to commencing orthodontic treatment, it is necessary to perform rehabilitation of existing dental (caries, pulp/periodontal infections, residual roots) and periodontal diseases.

The aim of this paper was to present a patient with partial edentulism including upper left canine palatally located that was successfully rehabilitated with orthodontic and subsequent fixed prosthodontic treatment.

CASE REPORT

Clinical examination of a 24-year-old patient revealed a number of dental problems, caries of large number of

Figure 3. Occlusal view of the upper arch and palatal position of the upper left canine
Slika 3. Okluzalni prikaz gornjeg luka i palatinalnog položaja gornjeg levog očnjaka

Figure 4. Review of the progress of orthodontic therapy: the first row photo describes the condition immediately after the positioning of the brackets, the second row photo shows the therapy progress after ten months and the third row shows the condition at the end of the therapy just before removing the brackets.
Slika 4. Prikaz napredovanja ortodontske terapije: u prvom redu fotografija opisuje stanje neposredno nakon postavljanja bravica, u drugom redu je prikazan progres terapije nakon deset meseci i u trećem redu je prikazano stanje na završetku terapije neposredno pred skidanje bravica.

teeth, irregular ectopic position of tooth 23 located palatally, as well as tooth 13 located vestibularly, reverse overbite of the tooth 12, tooth 26 extracted long time ago, and asymmetries caused by teeth loss. After the examination, an orthopantomogram was performed for a more detailed analysis of the case (Figure 1). Additionally, periapical

Figure 5. Intraoral view of anterior and lateral segments after orthodontic-prosthetic rehabilitation
Slika 5. Intraoralni prikaz frontalnog i bočnih segmenata nakon ortodontsko protetske rehabilitacije

Figure 6. Occlusal view of the upper arch after the treatment completion
Slika 6. Okluzalni prikaz gornjeg luka nakon završene terapije

imaging was performed to assess observed periapical lesions. After a team analysis of X-rays and in agreement with the patient, the orthodontist decided to extract teeth 16, 14, 24 and 25. Active carious lesions rehabilitation of the remaining teeth was performed prior to initiating orthodontic treatment while prosthodontic treatment was done after.

Orthodontic analysis was obtained on the basis of clinical examination, analysis of study models, X-rays and photographs [5] (Figures 2 and 3). The goal of the adjunctive orthodontic treatment was to level the teeth of the upper front, i.e., to level the incisors and bring the upper right lateral incisor into the normal overbite, then bring both upper canines in correct positions. The conventional metal brackets were used - discovery, Dentaurum, Roth 22 prescription 0.022 inch. The brackets were applied after cleaning and polishing the teeth, and enamel etching with 37.5% orthophosphoric acid [6]. The adhesive material used to fix the brackets was Heliosit Orthodontic Ivoclar Vivadent. Brackets on each tooth were placed in precise position as in the case of comprehensive orthodontic therapy. It is important to emphasize that sometimes during adjunctive orthodontic therapy it is desirable to place the bracket on the supporting teeth in a position that will not change the teeth location [7]. In the first stage of treatment that lasted three months a series of elastic archwires - NiTi (0.012, 0.014, 0.016, 0.016×0.016 inches) were used, achieving the levelling of the brackets in all three spatial planes, i.e., corrected inclinations, rotations of all teeth and reverse overbite. After the elastic NiTi arch wires, a steel archwire was placed, 0.016×0.016, followed by 0.017×0.025. The teeth of the intercanine sector, except the tooth 23, were tied in the block and represented a support unit for traction of the teeth 15 with the aim of closing the extraction space created by extraction of the tooth 14. An elastic chain was used for that purpose. Traction of the tooth 23 from the palate was performed by extrusion with vestibular elastic thread, then with elastic chain. When the conditions were met, an accessory NiTi archwire of 0.012 inches in diameter was placed in the upper left canine bracket. Ten months after the beginning of treatment, all teeth were positioned correctly (Figure 4). The entire treatment lasted thirteen months. After achieving the planned results with the adjunctive orthodontic treatment, the patient's fixed orthodontic appliance was removed. For the retention of the achieved condition, a fixed retainer was placed on the palatal side of the front teeth. The retainer covered all teeth of the intercanine sector except the tooth 23, since this tooth needed to become an abutment tooth for prosthodontic rehabilitation. The prosthodontic phase involved the construction of two fixed prosthetic devices (bridges), a bridge containing two abutment teeth and one pontic tooth was planned on the right side, while bridge on the left side contained two abutment teeth and two pontic teeth. The bridges were made of zirconia. The procedure of bridge development involved the preparation of the abutment teeth, taking impressions, then preparation and placement of temporary crowns made of polymethylmethacrylate (PMMA). The next step was to test the zirconia construction, which was done by the process of shofu ceramics layering. After the final step, the bridges were fixed with composite cement (Figures 5 and 6).

DISCUSSION

The case report presents the successful rehabilitation of a patient with partial edentulousness and orthodontic anomaly (ectopic teeth 13 and 23). There are many challenges that dentists face in the treatment of patients with this diagnosis: hard and soft tissue health, patient motivation, and optimal oral hygiene. The oral health of the patient in this case was extremely poor due to the presence of extensive carious lesions on a number of teeth and poor soft tissue condition. With the beginning of the therapy, the patient changed her previous habits of oral hygiene and adopted and implemented all the recommendations in order to preserve oral health.

In conditions that are characterized by teeth misalignment and the lack of a certain number of teeth, it is

necessary to have multidisciplinary approach to develop a treatment plan [8]. The goal of the orthodontic prosthetic rehabilitation plan is to achieve an individual optimum both from the aesthetical aspect as well as functional aspect. In this case, the lesser challenge posed by orthodontic treatment was the levelling of teeth, placement of teeth 13 and closure of the extraction space created by tooth extraction 14. On the other hand, traction of the tooth 23 from the palatal position posed bigger orthodontic challenge. Numerous sources pointed to the fact that palatal ectopic position of canine was much more common compared to buccal [9]. Isik Aslan and Ucuncu [10] concluded that maxillary canines play a very important role in the formation of facial aesthetics and smiles, and provide support to other teeth with their protective role in function. Therefore, it was extremely important to preserve ectopic canines and bring them into the dentition.

Ectopic tooth 23 was positioned in the dentition in order to reduce the edentulous space and use it as an abutment tooth for bridge. In order to move the ectopic tooth, it was necessary to provide space during orthodontic treatment by the extraction of the destroyed tooth 24, one of the four teeth planned for extraction. In cases with ectopic teeth, it is crucial to make a correct diagnosis that allows the correct positioning of the tooth in the bone. This means centering the tooth in the alveolar bone in the area where the gingiva was the most massive.

When planning orthodontic treatment that includes moving one or more teeth, it is necessary to provide an anchorage that resists reactive forces. Teeth do not represent an absolute anchorage because their reactive displacement always occurs. Lee KJ and Park YC [11] explained that when force is applied to a tooth or to a segment of an active unit from a placed mini-implant in the alveolar bone, the reactive unit does not manifest itself on the mini-implant, so there is no fear of "losing an anchorage ". So the ideal solution for this patient was to place a mini implant for tooth traction 23. Although the benefits of using a mini implant were explained to the patient, she still declined the proposed treatment plan. For this reason, mesial movement of tooth 27 for 1.5 mm occurred.

After the orthodontic treatment, teeth were prepared for bridges and the material of choice was zirconia ceramics. Zirconia ceramics is one of the newer materials used in prosthodontics. They meet all three criteria that a material should have-biocompatibility, aesthetics and functionality. The advantage of zirconia ceramics is reflected in a fact that it does not cause allergic reactions, has low affinity to retain plaque and bacteria, which reduces the possibility of gingival inflammation. Zirconia ceramics is characterized by strength and resistance to breakage. Teeth made of this material possess the characteristics of natural teeth. According to the research, the sustainability of bridges made of zirconia ranges between 95.4 and 98% after ten years [12]. CAD-CAM technology enables high precision production of zirconia crowns in a very short period of time. In this case, prosthetic rehabilitation was completed through three visits.

The disadvantage of this type of treatment is the reduction of four teeth in a patient who has already suffered the loss of a certain number of teeth. A better option in this case would be prosthetic rehabilitation of partial edentulousness by crowns on implants.

CONCLUSION

The therapeutic procedure for patients who have malocclusion with partial edentulism is complex. The success of the rehabilitation treatment of such patients depends on a multidisciplinary treatment plan. Although the treatment plan included the extraction of four teeth, primarily due to their low biological value, the final result indicated that this treatment plan was optimal. A 24 years old patient with poor oral health and ectopic teeth 13 and 23, thirteen months after adjunctive orthodontic and subsequent prosthodontics treatment was provided with satisfactory and stable results from aesthetical and functional point of view.

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Multidisciplinarni pristup u rehabilitaciji parcijalne bezubosti – pomoćni ortodontski tretman i protetska nadoknada

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KRATAK SADRŽAJ

Uvod Malokluzije kod parcijalno bezubih pacijenata predstavljaju poseban rehabilitacijski izazov u stomatologiji. Kod pacijenata koji pored ortodontskog problema imaju i određen broj zuba koji nedostaju potrebno je pristupiti multidisciplinarno. Taj pristup podrazumeva sinergiju konzervativnog, ortodontskog i protetskog tretmana.

Cilj rada je predstavljanje pacijenta sa parcijalnom bezubošću, palatinalno smeštenim gornjim levim očnjakom, koji su uspešno rešeni ortodontskim tretmanom i izradom fiksnih protetskih radova.

Prikaz slučaja Nakon kliničkog pregleda pacijentkinje starosti 24 godine, usledila je dodatna ortodontska analiza koja je obuhvata analizu studijskih modela, rendgenskih snimaka i fotografija. Utvrđeno je da pacijentkinja ima ektopične zube 13 i 23, obrnut preklop zuba 12, te u detinjstvu izvađen zub 26. S obzirom na raširenost karioznih lezija i destrukciju zuba, ordinirajući stomatolog planirao je ekstrakciju zuba 16, 14, 24, 25. Odlučeno je da se provede pomoćna ortodontska terapija s ciljem postizanja nivelacije zuba te pomeranje zuba na pozicije koje su prethodnom analizom isplanirane, te da se nakon ortodontskog tretmana pristupi izradi protetskih fiksnih radova kako bi se postigla potpuna rehabilitacija pacijenta kako sa funkcionalnog tako i sa estetskog aspekta.

Ključne reči: parcijalna bezubost; pomoćna ortodoncija; ektopija; cirkonijumska keramika

UVOD

Prema kriterijumima Svetske zdravstvene organizacije, bezubi pacijenti spadaju u osobe sa telesnim oštećenjima, upravo zbog otežane mogućnosti pravilnog žvakanja i govora [1]. Istraživanja i izveštaji Svetske zdravstvene organizacije ukazuju na podatak da bezubost stanovnika Bosne i Hercegovine starijih od 65 godina iznosi visokih 78% [2]. Neretko, pacijente sa bezubošću prati i određeni stepen malokluzije. Postoje različite metode klasifikacije parcijalne bezubosti, od kojih je Kenedijeva najzastupljenija. Prema toj klasifikaciji, klasa I predstavlja obostrani bočni nedostatak zuba, klasa II unilateralni bočni nedostatak zuba, klasa III unilateralni prekinuti zubni niz bočno, klasa IV bezubi prostor u predelu fronta [3]. Iako postoji veliki broj istraživanja o učestalosti Kenedijeve klasifikacije i izbora tretmana, nažalost, takvih podataka nema za stanovništvo Bosne i Hercegovine. Terapijski pristup parcijalne bezubosti u odnosu na stepen izraženosti, godine pacijenta, može obuhvatati mobilno protetsko nadomeštanje, fiksne protetske nadomestke te implanto-protetsku rehabilitaciju.

Poseban izazov u zbrinjavanju parcijalno bezubih pacijenata je kada, uz primarni problem, postoji i stanje malokluzije u smislu nepravilnog položaja preostalih zuba, posebno ukoliko postoji i slučaj ektopije zuba. Palatinalni položaj ektopičnog očnjaka je duplo više zastupljen u odnosu na bukalni položaj [4].

Pomoćni ortodontski tretman odraslih pacijenata se koristi kao predtretman u dentalnoj rehabilitaciji kada se želi ispraviti položaj i raspored postojećih zuba i iskoristiti ih za nadomeštanje onih koji nedostaju, što zahteva opsežniji terapijski plan. Zahvaljujući pomoćnoj ortodontskoj terapiji kod odraslih pacijenata moguće je pomerati zube u cilju olakšavanja drugih stomatoloških tretmana kojima se kontrolišu dentalna oboljenja. Pomoćna ortodontska terapija se usklađuje sa drugim zahvatima koji su obuhvaćeni planom terapije, parodontološkim i restaurativnim. Najčešće je u fiksnu ortodontsku napravu uključen samo deo zuba i sam tretman traje nekoliko meseci do godinu dana, nekada nešto duže. Pomoćnom ortodontskom terapijom postiže se repozicija zuba koji su migrirali u bezubi prostor koji je nastao usled preranog gubitka zuba, odnosno nakon ekstrakcije, te se na taj način dobijaju optimalni do idealni uslovi za izradu protetskog rada. Zatim, ovom terapijom se nivelišu zubi za što bolju estetsku restauraciju, izvlače frakturirani zubi kako bi se izradila zadovoljavajuća krunica i slično. Planiranje pomoćne terapije se bazira na osnovu liste problema kod pacijenta i predstavlja složen proces gde je potrebno timsko delovanje više terapeuta. U timu stomatologa glavna karika je restaurativni stomatolog, dok je ortodont taj koji omogućava samo bolje izvođenje plana restauracije. Odluku kako tretirati parcijalno bezubog pacijenta se donosi nakon formiranja liste problema, odnosno nakon kliničkog pregleda, analize rendgenskih snimaka i fotografija. Pre početka ortodontskog tretmana potrebno je sanirati postojeća oboljenja zuba (karijes, periapikalni procesi, zaostali korenovi) i oboljenja parodoncija.

Cilj ovog rada je da se prikaže način na koji je rešen problem nepravilno postavljenih zuba fiksnim ortodontskim tretmanom, te kako je rešena retencija i nadomešten gubitak zuba fiksnim protetskim radovima.

PRIKAZ SLUČAJA

Kliničkim pregledom pacijentkinje starosti 24 godine uočen je niz problema, karijes velikog broja zuba, ektopičan položaj zuba 23, koji je smešten palatinalno, kao i zuba 13, koji je smešten vestibularno, obrnuti preklop zuba 12, davno ekstrahiran zub 26, te asimetrije nastale gubitkom zuba. Nakon pregleda urađen je ortopantomogram za detaljniju analizu slučaja (Slika 1). Dodatno su urađeni retroalveolarni snimci radi analize uočenih periapikalnih lezija. Nakon timske analize rendgenskih snimaka i u dogovoru sa pacijentkinjom, oridinirajući stomatolog odlučio je da se ekstrahuju zubi 16, 14, 24 i 25. Na preostalim zubima potrebno je da se saniraju aktivne kariozne lezije, te urade pomoćni ortodontski tretman i protetska nadoknada.

Nakon završenog konzervativnog zbrinjavanja pacijentkinje usledila je ortodontska terapija. Rezultati ortodontske analize

su dobiveni na osnovu kliničkog pregleda, analizom studijskih modela, rendgenskih snimaka i fotografija [5] (slike 2 i 3).

Cilj pomoćnog ortodontskog tretmana je bio iznivelisati zube gornjeg fronta, odnosno iznivelisati sekutiće i gornji desni lateralni sekutić dovesti u normalan preklop, zatim postaviti oba gornja očnjaka na pravilne pozicije u zubnom nizu.

U tretmanu su korištene konvencionalne metalne bravice – Discovery, Dentaurum, Roth preskripcije širine 0,022 inča.

Postavci bravica prethodi čišćenje i poliranje zuba, zatim jetkanje cakline 37,5% ortofosfornom kiselinom [6]. Adhezivni materijal korišten za fiksaciju bravica je Heliosit Orthodontic – ivoclar vivadent. Kod ove pacijentkinje, gde se sprovodila pomoćna ortodontska terapija, odlučeno je da se postave bravice na svakom zubu u preciznoj poziciji, kao kod sveobuhvatne ortodontske terapije. Ovo je potrebno posebno naglasiti zbog činjenice da je ponekad kod pomoćne ortodontske terapije, na zubima koji predstavljaju uporište, poželjno postaviti bravicu u poziciju kojom se neće menjati njihov položaj [7]. U prvom stadijumu lečenja, koji je trajao tri meseca, korišćena je serija elastičnih lukova – NiTi (0,012, 0,014, 0,016, 0,016 × 0,016 inča), čime je postignuta nivelacija bravica u sve tri prostorne ravni, odnosno korigovani su nagibi, rotacije svih zuba i obrnut preklop. Nakon elastičnih NiTi lukova postavljen je čelični luk 0,016 × 0,016, zatim 0,017 × 0,025, zubi interkaninog sektora, izuzev zuba 23, bili su vezani u blok i predstavljali su uporišnu jedinicu za privlačenje zuba 15 s ciljem zatvaranja ekstrakcionog prostora nastalog vađenjem zuba 14. U tu svrhu korišćen je elastični lanac. Trakcija zuba 23 iz palatuma se vršila elastičnim koncem, zatim elastičnim lancem. Kada su se stekli uslovi, u bravicu gornjeg levog očnjaka je stavljen akcesorni NiTi luk promera 0,012 inča. Deset meseci od početka terapije svi zubi su bili uključeni u isti luk i spremni za privođenje ortodontske terapije kraju (Slika 4).

Celokupni tretman je trajao trinaest meseci. Nakon postignutih planiranih rezultata pomoćnim ortodontskim tretmanom pacijentkinji je uklonjen fiksni ortodontski aparat. Za retenciju postignutog stanja postavljen je fiksni retiner sa palatinalne strane frontalnih zuba. Retinerom su obuhvaćeni svi zubi interkaninog sektora osim zuba 23, jer je on predviđen kao nosač protetskog rada. Protetska faza je podrazumevala izradu dva fiksna protetska rada (mosta), sa desne strane je planiran most koji sadrži dva člana i jedan međučlan, a sa leve strane most od dva člana i dva međučlana. Mostovi su izrađeni od cirkonijumske keramike. Procedura izrade mostova je uključivala preparaciju zuba nosača, uzimanje otisaka, zatim izradu privremenih krunica od polimetilmetakrilata (PMMA). Sledeći korak je bio proba konstrukcije od cirkona, koja je rađena slojevanjem shofu keramikom. Nakon završnog sloja mostovi su fiksirani kompozitnim cementom (slike 5 i 6).

DISKUSIJA

Prikazom slučaja predstavljena je uspešna rehabilitacija pacijentkinje sa parcijalnom bezubošću i ortodontskom nepravilnošću (ektopija zuba 13 i 23). Brojni su izazovi sa kojima se stomatolozi susreću u terapiji pacijenata sa navedenom dijagnozom: zdravlje tvrdih i mekih tkiva, motivacija pacijenta, optimalna oralna higijena. Oralno zdravlje pacijentkinje u prikazanom slučaju je bilo izuzetno loše zbog prisustva obimnih karioznih lezija na većem broju zuba te lošeg stanja mekih tkiva. Sa početkom terapije pacijentkinja je promenila dotadašnje navike oralne higijene i usvojila i provodila sve preporuke u cilju očuvanja oralnog zdravlja.

Kod stanja koja karakterišu nepravilno položeni zubi i nedostatak određenog broja zuba za izradu plana terapije potrebno je pristupiti multidisciplinarno [8]. Zadatak ortodontsko-protetskog plana rehabilitacije je bio postizanje individualnog optimuma, kako sa aspekta estetike tako i sa aspekta funkcije. U ovom slučaju, manji izazov je predstavljala nivelacija zuba, smeštaj zuba 13 te zatvaranje ekstrakcionog prostora nastalog vađenjem zuba 14. S druge strane, smeštanje zuba 23 iz palatinalnog položaja predstavljalo je veći ortodontski izazov. Brojni izvori literature ukazuju na činjenicu da je palatinalna ektopija očnjaka mnogo više zastupljena u odnosu na bukalnu [9]. Isik Aslan i Ucuncu [10] smatraju da maksilarni očnjaci imaju veoma važnu ulogu u formiranju estetike lica i osmeha, te pružaju podršku ostalim zubima svojom zaštitnom ulogom pri funkciji. Stoga je od izuzetne važnosti bilo očuvati ektopične očnjake i dovesti ih u zubni niz. Ektopični zub 23 smešten je u zubni niz kako bi se smanjio bezubi prostor i iskoristio kao nosač protetskog rada. Kako bi se smestio ektopičan zub prilikom ortodontskog tretmana, bilo je neophodno obezbediti prostor ekstrakcijom destruiranog zuba 24, jednog od četiri zuba terapijom planirana za ekstrakciju. U slučajevima kada postoji ektopija zuba od ključne važnosti je pravilno postaviti dijagnozu kojom se omogućava pravilno pozicioniranje zuba u kosti. Ovo podrazumeva centriranje zuba u alveolarnom nastavku i to u području gde je gingiva najmasivnija. Prilikom planiranja ortodontske terapije kod pomeranja jednog ili više zuba potrebno je obezbediti uporište koje se opire reaktivnim silama. Zubi ne predstavljaju apsolutno uporište jer uvek dolazi do njihovog reaktivnog pomeranja. Lee KJ i Park YC [11] smatraju da kada se sila primeni na zub ili na segment aktivne jedinice iz postavljenog mini-implantata u alveolarnoj kosti, reaktivna jedinica se ne ispoljava na mini-implantat, stoga strah od „gubitka uporišta" ne postoji. Tako da je kod ove pacijentkinje bilo idealno rešenje postaviti mini-implantat za trakciju zuba 23. Iako su pacijentkinji objašnjene prednosti primene mini-implantata, ona je ipak odbila taj plan terapije. Iz tog razloga je došlo do mezijalizacije zuba 27 u vrednosti od 1,5 mm.

Nakon ortodontskog tretmana pristupilo se izradi protetskih radova, materijal izbora je bio cirkonijumska keramika. Cirkonijumska keramika se ubraja u novije materijale za izradu protetskih nadomestaka u stomatologiji. Ispunjava sva tri kriterijuma koja jedan materijal treba da ima: biokompatibilnost, estetika i funkcionalnost. Prednost cirkonijumske keramike je da ne uzrokuje alergijske reakcije, plak i bakterije se teže zadržavaju, što smanjuje mogućost gingivalne upale. Cirkonijumsku keramiku odlikuje čvrstoća odnosno otpornost na lom. Zubi rađeni od ovog materijala izgledaju kao prirodni zubi. Prema istraživanjima, održivost mostova napravljenih od cirkona se kreće između 95,4 i 98% nakon deset godina [12]. CAD-CAM tehnologija omogućava veliku preciznost izrade cirkonijumskih keramičkih radova u veoma kratkom periodu. U ovom prikazanom slučaju protetska rehabilitacija je završena kroz tri posete.

Nedostatak ovog vida protetskog zbrinjavanja je bio brušenje četiri zuba kod pacijentkinje koja je već pretrpela gubitak određenog broja zuba. Bolja opcija u ovom slučaju bi bila protetska rehabilitacija parcijalne bezubosti izradom protetskih radova na implantatima.

ZAKLJUČAK

Terapijska procedura pacijenata koji imaju malokluziju uz parcijalnu bezubost je kompleksna. Uspešnost rehabilitacijskog tretmana takvih pacijenata zavisi od multidisciplinarnog plana terapije. Iako je planom terapije, na već postojeći nedostatak zuba, bilo predviđeno vađenje dodatna četiri zuba, prevashodno zbog njihove male biološke vrednosti, konačan rezultat ukazuje na to da je ovaj plan tretmana bio optimalan. Pacijentkinji od 24 godine sa lošim oralnim zdravljem i ektopijom zuba 13 i 23, 13 meseci nakon pomoćne ortodontske terapije, te nakon protetske izrade mostova, omogućeni su zadovoljavajući i stabilni rezultati sa estetskog i funkcionalnog aspekta.