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CASE REPORT
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IZRADA FIKSNIH ZUBNIH NADOKNADA KOD PARAFUNKCIJSKIH AKTIVNOSTI OROFACIJALNOG SISTEMA - PRIKAZ SLUČAJA

FABRICATION OF FIXED DENTAL RESTORATIONS IN PATIENT WITH PARAFUNCTIONAL ACTIVITIES OF THE OROFACIAL SYSTEM - CASE REPORT

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Sažetak

Uvod: *Bruksizam je ponavljana aktivnost mišića i zglobova koja se karakteriše škripanjem i struganjem zubima, a klinički se, pre svega, može dijagnostikovati prisustvom izraženih brusnih faseta.* ***Cilj*** *rada bio je prikaz pacijenta sa bruksizmom kome je usled dijagnostikovane krezubosti indikovana izrada gornjeg i donjeg polucirkularnog metalo-keramičkog mosta. Kliničkim pregledom utvrđeno je značajno oštećenje prethodno izrađenih fiksih nadoknada. Povećanjem vertikalne dimenzije okluzije, stabilnim okluzalnim kontaktima metalo-keramičkih članova i izradom intraoralnih splintova od meke plastike postignuti su optimalni terapijski rezultati, a oštećenja mosta su izostala.*
Zaključak: *Izrada protetskih radova kod pacijenata sa bruksizmom ima za cilj da primarno reši nedostatak izgubljenih zuba, ali i preventivno deluje na moguća oštećenja orofacijalnog sistema parafunkcijskim aktiv-nostima.*

Ključne reči: *fiksna nadoknada, bruksizam*

Abstract

Introduction**:** *Bruxism is a repetitive activity of muscles and joints, which is characterized by creaking and scraping of teeth, and clinically, above all, it can be diagnosed by the presence of expressed abrasive facets.*
The aim *of the paper was to present a patient with bruxism, whom, due to diagnosis of the partial edentulism, has been indicated production of the upper and lower semi-circular metal ceramic bridge. A clinical examination found significant damage to the previously created fixed denture. By increasing the vertical dimension of the occlusion, making stable occlusal contacts, and by making of intraoral soft-plastic splint, optimal therapeutic results have been achieved, and the damage to the bridge has been missed.*
Conclusion: *Making prosthetic restorations in patients with bruxism aims to primarily solve the lack of lost teeth, but also prevents possible damage to the orofacial system by parafunctional activities.*

Key words: *fixed restoration, bruxism*

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Uvod

Bruksizam je parafunkcionalno i patološko stanje orofacijalnog sistema. Prema Lobbezo i sar[1]. bruksizam je ponavljana aktivnost mišića i zglobova koja se karakteriše škripanjem i struganjem zubima udruženim sa stiskanjem donje vilice[1]. Američka akademija za orofacijalnu bol (*American Academy of Orofacial Pain*) bruksizam definiše kao dnevnu ili noćnu parafunkcionalnu aktivnost koja uključuje stiskanje, škripanje, škrgutanje i mlevenje zubima i koja se može jasno klinički dijagnostikovati prisustvom izraženih brusnih faseta koje nisu mogle nastati mastikacijom[2]. Sa druge strane, iako ne postoji jasan konsezus struke, većina dostupne literature bruksizam opisuje kao noćnu aktivnost. Dnevni bruksizam se naziva bruksomanija i predstavlja nekontrolisano stiskanje zuba u slučajevima akutne nervne razdražljivosti ili jačeg fizičkog napora[3]. Dokazano je da se dnevni bruksizam češće javlja kod žena, dok u slučaju prevalencije noćnog bruksizma nema razlike u odnosu na pol i uzrast[4,5].

Jedini objektivni način za dokazivanje bruksizma su elektromiografija i polisomnografija[6]. Ove metode zahtevaju sofisticiranu tehnologiju, nedostupnu u svakodnevnoj kliničkoj praksi, te se koriste isključivo u naučne svrhe. Radi olakšavanja postavljanja dijagnoze, Američka asocijacija za poremećaj sna (*American Sleep Disoreders Association*) smatra da je bruksizam prisutan ukoliko postoji bar jedan od simptoma: trošenje zuba, zvukovi u zglobu prilikom pokreta donje vilice ili osetljivost žvačnih mišića, koji se ne mogu pripisati nijednom drugom poremećaju[7-9]. Dijagnoza se, dakle, postavlja na temelju dobre anamneze i objektivnih znakova pri kliničkom pregledu.

Uzrok nastanka bruksizma još uvek je izvor polemika, ali su autori saglasni u činjenici da je kompleksne i multifaktorijalne etiologije. Neuromuskularna teorija, veoma citirana sredinom prošloga veka, smatra da malokluzija, posebno okluzijske interference, uzrokuju parafunkcijske pojave kao što su škripanje i stiskanje zuba[10]. Sa druge strane, danas zastupljena psihofiziološka teorija podrazumeva da primarni uzroci bruksizma jesu stres i emocionalni faktori, koji razvojem parafunkcije pokreću mehanizme oslobađanja tenzije[11]. Dokazano je da se bruksizam može javiti i kod osoba kod kojih postoje pravilni okluzijski odnosi ili blaga odstupanja, kao i da ga nema u slučajevima izuzetno narušenih okluzijskih odnosa[9].

Introduction

Bruxism is the parafunctional and pathological state of the orofacial system. According to Lobbezo et al., bruxism is a repetitive activity of muscles and joints, characterized by squeezing and scraping teeth associated with clenching of the lower jaw[1]. The American Academy of Orofacial Pain defines bruxism as a daily or nightly parafunctional activity that involves squeezing, crunching, and grinding teeth and which can be clearly diagnosed clinically by the presence of expressed abrasive facets that could not be caused by mastication[2]. On the other hand, although there is no clear professional consensus, most available literature describes bruxism as a night activity. Daily bruxism is called bruxomania and represents an uncontrolled tooth compression in cases of acute nervous irritability or stronger physical effort[3]. Daily bruxism has been proven to be more common in women; however, concerning the prevalence of night bruxism, there is no difference in sex and age[4,5].

The only objective way to prove bruxism is electromyography and polysomnography[6]. These methods require sophisticated technology, inaccessible in everyday clinical practice, and are used exclusively for scientific purposes. In order to facilitate diagnosis, the American Sleep Disorders Association finds that bruxism is present if there is at least one of the symptoms: tooth wear, sounds in the lower jaw movement, or sensitivity of chewing muscles, which cannot be attributed to any other disorder[7-9]. The diagnosis is therefore based on good anamnesis and objective signs in a clinical examination.

The cause of the occurrence of bruxism is still a source of controversy, but the authors agree with the fact that it is complex and multifactorial etiologies. A neuromuscular theory, widely quoted in the middle of the last century, considers that malocclusion, especially occlusal interference, can cause parafunctional phenomena such as creaking and tooth clenching[10]. On the other hand, the present-day psychophysiological theory implies that the primary causes of bruxism are stress and emotional factors which, by the development of parafunction, trigger mechanisms for the release of tension[11]. It has been proven that bruxism can occur in patients with proper occlusal relationships or slight deviation, but it lacks in the cases of extremely degraded occlusal relationships[9].

Etiologija bruksizma vezuje se za poremećaj u regulaciji na nivou centralnog nervnog sistema, a empirijski je dokazano da je češći kod osoba sa depresijom, anksioznošću i paranoidnim poremećajem[8]. Kod odraslih se bruksizam povezuje sa Huntingtonovom i Parkinsonovom bolešću[12-14].

Za razliku od funkcionalnih kretnji donje vilice, parafunkcionalne kretnje kod bruksizma razvijaju znatno jače horizontalne sile pri zubnim kontaktima koje oštećuju zube i čitav orofacijalni sistem. Bruksizam se pojavljuje u horizontalnom i vertikalnom obliku. Horizontalni oblik (škripanje) nastaje kada su klizne kretnje ekstremne, što izaziva ozbiljno trošenje incizalnih ivica prednjih i kvržica bočnih zuba. Smanjuje se horizontalni i vertikalni preklop. Drugi je oblik vertikalni (stiskanje), u kojem je kretnja minimalna, svega nekoliko milimetara. Troši se lingvalna površina gornjih i labijalna površina donjih prednjih zuba, ali im se dužina ne menja[15].

S obzirom da je prevalencija bruksizma, koja se u zavisnosti od izvora iz literature kreće od 8 do 31,4%, zabrinjavajuća, neophodno je uspostaviti dobre terapijske modalitete, a posebnu pažnju obratiti na prevenciju poremećaja[6,16,17]. Protetsko zbrinjavanje pacijenata sa bruksizmom praćeno je brojnim poteškoćama, ali je istovremeno i stručni izazov.

Cilj rada bio je prikaz pacijenta sa bruksizmom kome je usled dijagnostikovane krezubosti bila indikovana izrada gornjeg i donjeg polucirkularnog metalo-keramičkog mosta.

Prikaz slučaja

Pacijent NP, muškog pola, star 52 godine, primljen je u Službu za stomatološku protetiku Klinike za stomatologiju u Nišu radi protetske rehabilitacije. Motiv za dolazak stomatologu bio je delimični nedostatak zuba u obe vilice, kao i poteškoće u izgovoru pojedinih glasova. U anamnestičkim podacima pacijent je naveo upotrebu leka Remitra 30 mg - Actavis (mitrazepin) u cilju lečenja depresivne epizode. Kliničkim pregledom utvrđena je krezubost gornje i donje vilice, kao i distalni dentoalveolarni odnos sa retroinklinacijom gornjih frontalnih zuba. Utvrđeno je smanjeno otvaranje usta pri govoru, kao i blaga hipertrofija maseteričnih mišića (slika 1). Nije evidentirano prisustvo bruksofaseta.

Etiology of bruxism is linked to the abnormal regulation of the central nervous system, and the empirically has been proven to be more common in people with depression, anxiety and paranoid disorder[8]. In adults, bruxism is still associated with Huntington and Parkinson's disease[12-14].

In contrast to the functional movements of the lower jaw, parafunctional movements in bruxism develop considerably stronger horizontal forces in teeth contacts that damage teeth and the whole orofacial system. Bruxism occurs in horizontal and vertical form. Horizontal form (creaking) occurs when sliding gestures are extreme, causing severe wear of the incisal edges of the front and cusps of the lateral teeth. Horizontal and vertical overlap is reduced. The second is a vertical form (clenching) in which the movement is minimal, only a few millimeters. The lingual surface of the upper and labial surfaces of the lower front teeth are worn, but their length is not changed[15].

Considering that the prevalence of bruxism, which varies from 8 to 31.4% depending on the literature source, is of concern, it is necessary to establish good therapeutic modalities, and pay special attention to the prevention of disorders[6,16,17]. Prosthodontic care of patients with bruxism is associated with many difficulties, but it is also a professional challenge.

The aim of this paper was to present a patient with bruxism, whom was indicated fabrication of the upper and lower semicircular metal ceramic bridge due to the diagnosis of partial edentulism.

Case report

A male patient N.P., aged 52, was admitted to the Clinic of Dentistry in Niš, Department for prosthodontics, for prosthodontic rehabilitation. The motive for the coming to the dentist was the partial lack of teeth in both jaws, as well as the difficulty in pronouncing certain voices. In anamnestic data, the patient mentioned the use of Remitra 30 mg - Actavis (mitrazepin) for the treatment of a depressive episode. Clinical examination determined the partial edentulism of the upper and lower jaw as well as the distal dentoalveolar relationship with the retroinclination of the upper frontal teeth. It also revealed reduced mouth opening during speech, as well as mild hypertrophy of the masseteric muscles (Figure 1). The presence of bruxofacet was not recorded.

Nakon pretprotetske pripreme, koja je podrazumevala ekstrakciju razlabavljenih zuba i sanaciju karijesa, pristupilo se izradi najpre gornjeg, a zatim i donjeg semicirkularnog metalo-keramičkog mosta. U cilju potpune rehabilitacije izvornog okluzijskog obrasca ispoštovana je postojeća visina zagrižaja, a preklop gornjih i donjih frontalnih zuba iznosio je oko 2-3 mm, sa blago izraženom retroinkinacijom (slika 2). Pacijentu su date jasne smernice o održavanju oralne higijene, korekciji ishrane i načinu konzumacije hrane.

Slika 1. Izraženi maseterični mišiči mogu ukazivati na njihovu hiperaktivnost

Figure 1. Expressed masseteric muscles may indicate their hyperactivity

Nakon dva meseca pacijent se javio sa frakurom spojnice između zuba 22 i 23, verovatno izazvanog jakim mastikatornim pritiskom. Na većini metalokeramičkih kruna uočene su abrazivne fasete. Abrazija keramike na labijalnoj i linglavnoj strani sekutića ukazivala je na vertikalni tip bruksizma (slika 3). Uočena je jaka inflamacija desni u gornjoj i donjoj vilici, a pacijent je potvrdio da ne održava oralnu higijenu. Žalio se na mali prostor za jezik i nemogućnost da govori. Pri govoru je slabo otvarao usta, delovao napeto, a uočavale su se i kontrakcije masetra. Imajući u vidu prisutne objektivne znake, postavili smo početnu dijagnozu bruksizma, te se koncentrisali na iscrpnu anamezu u vezi sa parafunkcijskim ponašanjem.

Pacijent je na pitanje da li stiska zube odgovorio pozitivno. Pri tome, nije svestan noćnog bruksizma, ali je primećivao da u toku dana vrši pritisak na mostove, što on nije mogao da iskontroliše. Nije osećao bolove u mišićima i vilicnim zglobovima.

After preprosthetic treatment, which involved the extraction of loosened teeth and the repair of caries, firstly the upper and then lower semicircular metal ceramic bridge were made. For the purpose of complete rehabilitation of the original occlusive form, the existing intermaxillary relationship has been maintained, and the folding of the upper and lower frontal teeth was about 2-3 mm, with a mildly pronounced retroinclination of them (Figure 2). The patient is given clear guidelines on maintaining oral hygiene, nutrition correction and manner of food consumption.

Slika 2. Prvobitno izrađene mostne konstrukcije pozicionirane na izvornoj visini zagrižaja

Figure 2. Initially made bridge constructions positioned at the original bite height

After two months, the patient appeared with the fracture of the commissure between teeth 22 and 23, probably caused by a strong mastication pressure. Abrasive facets were found on most metal ceramic crowns. Abrasion of ceramics on the labial and lingual side of the incisors indicated a vertical type of bruxism (Fig. 3). There was a strong gum inflammation in the upper and lower jaws, and the patient confirmed that he did not maintain oral hygiene. He complained about a small space for tongue and an inability to speak. While speaking, he opened his mouth slightly, he seemed tense, and masseter contractions were noticed. Bearing in mind the objective signs, we set up the initial diagnosis of bruxism, and concentrated on the exhaustive anamnesis associated with parafunctional behavior.

The patient was asked if he clenched his teeth, to which he responded positively. In doing so, he was not aware of the night bruxism, but he noticed that during the day he was putting pressure on the bridges, which

Slika 3. Bruksofasete na labijalnoj i lingvalnoj površini donjih frontalnih zuba. Izražen ainflamacija desni

Figure 3. Bruxofacets on the labial and lingual surfaces of the lower frontal teeth. Noticeable gingival inflammation

Slika 4. Određivanje međuviličnih odnosa – podizanje vertikalne dimenzije okluzije

Figure 4. Determination of intermaxillary relationships - lifting the vertical dimension of occlusion

Glavobolja nije bila prisutna. U farmakološkoj anamnezi navodi dalju upotrebu mitrazepina, kao i novodijagnostikovanu Parkinsonovu bolest, zbog koje je radno pošteđen.

Pacijentu je skinut gornji metalo-keramički most. U konsultaciji sa parodontologom, sanirana je inflamacija gingive uz motivacioni kurs o održavanju oralne higijene i krenulo se sa izradom nove gornje mostne konstrukcije. U cilju obezbeđenja prostora za jezik i iz fonetskih razloga, odlučili smo da povećamo vertikanu dimenziju okluzije i smanjimo preklop prednjih zuba (slika 4). Izrađen je gornji metalo-keramički most sa jače izraženim konektorima, koji je nakon adaptacije u ustima pacijenta privremeno cementiran. U istoj aktu uklonjen je stari donji most i počelo se sa sanacijom desni. Nakon parodontološkog tretmana, pacijent se vratio u Službu za stomatološku protetiku radi uzimanja otiska. Intraoralnim pregledom uočeno je oštećenje keramičke fasete privremeno cementiranog gornjeg mosta, iako je pacijent kao antagoniste imao brušene zube. Most je vraćen u zubnu tehniku radi reparacije. Nakon izrade donje zubne nadoknade i iscrpne analize okluzalnih kontakata, pacijentu su privremeno cementirana oba mosta.

Pacijentu su izrađene gornja i donja meka udlaga koje bi trebalo da koristi noću, ali i u toku dana, kako ne bi došlo do oštećenja mostova i kako bi se mastikatorni mišići rasteretili (slika 5).

he could not control. He did not feel pain in the muscles and jaw joints. Headache was not present. In the pharmacological history, further use of mitrazepine was reported, as well as the newly diagnosed Parkinson's disease, due to which he was exempt from work.

The upper metalloceramic bridge was removed. In consultation with the periodontologist, gingival inflammation was remediated with a motivation course on maintaining oral hygiene and started with the construction of a new upper bridge structure. In order to provide space for the tongue and for phonetic reasons, we decided to increase the vertical dimension of the occlusion and reduce the overlap of the front teeth (Fig. 4). An upper metalloceramic bridge with stronger connectors was created, which was temporarily cemented after the adaptation in the patient's mouth. In the same session, the old lower bridge was removed and the gum repair started. After a periodontal treatment, the patient returned to the Department of prosthodontics for the purpose of taking an impression of the lower teeth. Intraoral examination showed damage to the ceramic facet of the temporarily cemented upper bridge, although the patient as an antagonist had prepared teeth. The bridge was returned to dental technician for reparation. After the production of the lower dental restoration and exhaustive analysis of occlusal contacts, both bridges were temporarily cemented.

Slika 5. Izrada mekih udlaga preko modela gornjeg i donjeg semicirkularnog mosta

Figure 5. Making soft splints over the upper and lower semicircular bridge models

Slika 6. Izgled pacijenta sa izrađenim gornjim i donjim metalo-keramičkim mostovima i zaštitnim splintovima

Figure 6. Patient's appearance with upper and lower metal ceramic restaorations and protective splints

U trenutku predaje most je bio bez ikakvih mehaničkih oštećenja, a pacijent je bio zadovoljan njihovom funkcijom i izgledom (slika 6). Pacijentu su data uputstva o održavanju higijene mosta, o načinu ishrane sa zubnim nadoknadama, kao i o svakodnevnom korišćenju zaštitnih folija u toku noći.

Na kontroli nisu uočena oštećenja mosta, a pacijent je protetičkim zadovoljan radom. Podizanjem zagrižaja i uspostavljanjem stabilnih kontakata svih članova gornjeg i donjeg fiksnog rada postignuti su zadovoljavajući funkcionalni, estetski i fonetski rezultati, pa je usledilo definitivno cementiranje mostova glas jonomer cementom. Oralna higijena pacijenta bila je zadovoljavajuća.

Terapija bruksizma je kompleksna i dugotrajna, te su redovne kontrole previđene na tri meseca.

Diskusija

Terapija bruksizma je kompleksna, kao i svaka terapija pojava i stanja koja nemaju jasnu etiologiju. Ciljevi terapije bruksizma su redukcija psihičkog stresa, uspostavljanje optimalnih okluzalnih odnosa, tretiranje simptoma orofacijalne parafunkcije, kao i zaustavljanje ustaljenih neuromuskularnih navika[18,19].

U terapiji bruksizma izdvajaju se dve komponente: kontrola stresa i njegovog uticaja na neuromišićni sistem (promena životnih navika, farmakoterapija i fizikalna terapija), kao i stomatološka terapija, koja obuhvata optimalnu okluzalnu rehabilitaciju i primenu intraoralnih udlaga[18,20].

The upper and lower soft splint for the patient were made, which should be used at night, but also during the day, in order to prevent bridge damage, and to relieve masticatory muscles (Figure 5). At the time of delivery, the bridge was without any mechanical damage, and the patient was satisfied with their function and appearance (Figure 6). The patient was given instructions for maintaining the hygiene of the bridge, the diet with dental restorations, and for the daily use of protective films during the night.

On the next control, no damage was detected on the bridge, and the patient was satisfied with the restorations. By raising the bite and establishing stable contacts of all bridge units of the upper and lower fixed work, satisfactory functional, aesthetic and phonetic results were achieved, and finally the cementing of the bridges with a glass ionomer cement followed. Oral hygiene of the patient was satisfactory.

The therapy of bruxism is complex and long-lasting, and the regular control of the patient is scheduled for every three months.

Discussion

Therapy of bruxism is complex, like any treatment of phenomena and conditions that do not have a clear etiology. The goals of bruxism therapy are the reduction of psychic stress, the establishment of optimal occlusal relationships, the treatment of orofacial parafunctional symptoms, and cessation of established neuromuscular habits[18,19].

In the treatment of bruxism, two components are distinguished: control of stress

Kontrola stresa uključuje pomoć psihologa ili psihijatra, kao i fizikalnu terapiju. Farmakološka terapija bazira se na lekovima kao što su benzodiazepini i mišićni relaksansi. U opisanom slučaju, pacijent je pod kontrolom i na terapiji propisanoj od strane specijaliste psihijatrije, što je faktor koji konkretno doprinosi rešavanju problema bruksizma. Pacijentu nije predložena fizikalna terapija, s obzirom da nije ukazao na probleme sa bolom u mišićima i viličnom zglobu, kao ni na glavobolju.

Izrada protetskih radova kod pacijenata sa bruksizmom, bilo da su u pitanju mobilne ili fiksne zubne proteze, podrazumeva optimalnu korekciju okluzalnih kontakata, kako eventualne interference ne bi dovele do pogoršanja stanja. Sa druge strane, od okluzalne rehabilitacije se očekuje da umanji simptome bruksizma[19]. U slučaju koji smo prikazali okluzalna rehabilitacija podrazumevala je korekciju vertikalne dimenzije okluzije (povećanje visine zagrižaja) i ravnomernu raspodelu pritiska mastikacije uspostavljanjem istovremenih kontakata članova gornjeg i donjeg semicirkularnog mosta, kako u bočnim tako i u interkaninom sektoru. Pri novouspostavljenoj visini zagrižaja pacijent je prijavio rasterećenje u predelu viličnih zglobova i opuštenost maseteričnih i temporalnih mišića, što smatramo pozitivnim učinkom terapije. Sem toga, obezbeđen je prostor za jezik, pa je pacijent razgovetnije govorio. Nasuprot našim kliničkim rezultatima, Yap i sar. su utvrdili da uklanjanje okluzalne interference povišenjem vertikalne dimenzije okluzije ne zaustavlja bruksizam[8].

Pacijent je još u vreme izrade donjeg mosta parafunkcionalnim pokretima oštetio keramiku na gornjem, privremeno cementiranom mostu. Kinsel i Lin su zaključili da metalo-keramičke krune imaju značajno veći rizik od preloma kod pacijenata sa bruksizmom kod kojih nije korišćen okluzalni splint[21]. Mikeli i sar. su ispitujući problem preloma porcelanskih faseta našli da se oni u 70% slučajeva javljaju kod bruksista[22]. Nasuprot tome, Souza Melo i sar. u svojoj metaanalizi nisu ustanovili povezanost „noćnog bruksizma“ i terapije keramičkim nadoknadama[23].Terapija okluzijskom udlagom može redukovati negativne posledice parafunkcionalnih aktivnosti, ali ih ne može zaustaviti.

and its influence on the neuromuscular system (change in habits of life, pharmacotherapy and physical therapy), as well as dental therapy that includes optimal occlusal rehabilitation and application of intraoral splints[18,20].

Stress control includes the help of a psychologist or psychiatrist, as well as physical therapy. Pharmacological therapy is based on drugs such as benzodiazepines and muscle relaxants. In the described case, the patient is under control and on the treatment prescribed by a specialist psychiatrist, which is a factor that specifically contributes to solving the problem of bruxism. Physical therapy was not proposed to the patient because he did not point to the problems with muscular and jaw pain, as well as headache.

Making prosthetic restorations in patients with bruxism, whether mobile or fixed dental prostheses are concerned, implies optimum correction of occlusal contacts, as possible interferences do not lead to worsening of the condition. On the other hand, occlusive rehabilitation is expected to diminish the symptoms of bruxism[19]. In the case that we presented occlusal rehabilitation meant the correction of the vertical dimension of occlusion (increasing bite height) and even distribution of the pressure of mastication by establishing simultaneous contacts of the upper and lower semicircular bridge units, both in the lateral as well as in the intercanine sector. At the newly established bite height, the patient reported relief in the area of the joints and the relaxation of the masseteric and temporal muscles, which we considered to be a positive effect of the therapy. In addition, the tongue space was increased, so the patient spoke more clearly. Contrary to our clinical results, Yap et al. have found that the removal of occlusal interference by elevating the vertical dimension of occlusal does not stop bruxism[8].

During making the lower bridge, the patient damaged ceramics by parafunctional movements on the upper, temporarily cemented bridge. Kinsel and Lin concluded that metal ceramic crowns had a significantly higher risk of fracture in patients with bruxism in whom no occlusive splint was used[21]. Mikeli at al. were examining the problem of fracture of porcelain facets and found that in 70% of cases they occur in bruxists[22]. Contrary, Souza Melo et al. in their metaanalysis did not establish the association between "night bruxism" and therapy with ceramic restorations[23].

Macedo i sar. se osvrću na nekritičku učestalu upotrebu okluzalnih udlaga u svakodnevnoj praksi označavajući je simptomatskim terapeutskim sredstvom[24].

Cilj okluzijske terapije je stvranje uslova u kojima će se zaustaviti štetno dejstvo bruksizma. Udlaga smanjuje hiperaktivnost, odnosno relaksira mastikatorne mišiće; pozicionira kondil u terapijski položaj – položaj centralne relacije; štiti zube, njihov potporni aparat i meka tkiva od bruksizma; bihevioralnim učinkom podiže samosvesnost o položaju, funkciji i parafunkciji donje vilice, ali postiže i placebo efekat. Zanimljivo je istraživanje koje pokazuje da 80-90% ispitanika nakon terapije udlagom doživljava poboljšanje simptoma, iako je u samo 50% slučajeva zaista i dokazano smanjenje vrednosti žvačnih sila[25]. Sve to govori u prilog njenoj ulozi u redistribuciji sila i rasterećenju mišića i viličnih zglobova. Negativna strana udlage je što ne zaustavlja noćni bruksizam, već modifikuje parafunkcijske aktivnosti i menja distribuciju traume mastikatornog sistema, čime smanjuje simptome, koji nakon prestanka terapije egzacerbiraju[19,24].

U zavisnosti od uloge okluzijske udlage razlikujemo interdentalne štitnike, repozicijske i stabilizacijske udlage[19,20]. Mogu biti izrađeni od mekog ili čvrstog materijala. Meki polivinilski splintovi imaju zaštitnu ulogu i ne služe za korekciju okluzalnih interferenci. Udlage napravljene od akrilata imaju prevashodno stabilizacionu ulogu i trajniji su od mekih splintova. S obzirom na korekciju okluzalnih kontakata u toku protetske rehabilitacije prikazanog pacijenta, u opisanom slučaju odlučili smo se za meku udlagu pružajući pacijentu istovremenu zaštitu i komfor.

Zaključak

Terapija bruksizma je multifaktorijalna i zahteva usku saradnju lekara specijalista različitih oblasti. Izrada protetskih radova kod pacijenata sa bruksizmom ima za cilj da primarno reši nedostatak izgubljenih zuba, ali i preventivno deluje na moguća oštećenja orofacijalnog sistema parafunkcijskim aktivnostima.

Therapy with occlusal splint can reduce negative effects of parafunctional activities, but cannot stop them. Macedo et al. point to the uncritical frequent use of occlusal splints in everyday practice, designating it as a symptomatic therapeutic remedy[24].

The goal of occlusal therapy is to create conditions in which the harmful effects of bruxism will be stopped. The splint reduces hyperactivity, respectively relaxes the mastication muscles; positions the condyle in the therapeutic position - the position of the central relationship; protects the teeth, their supporting tissues and soft tissues from bruxism; by behavioral effect raises self-awareness of the position, function and parafunction of the lower jaw, but also makes a placebo effect. Interestingly, a study shows that 80-90% of respondents after the treatment with the splint experience an improvement in symptoms, although in only 50% of cases there is a proven reduction in chewing forces[25]. All this speaks in favor of its role in the redistribution of forces and relaxation of muscles and jaw joints. The negative side of the splint is that it does not stop the night bruxism, but modifies the parafunctional activities and changes the distribution of the trauma of the masticatory system, which reduces the symptoms that, after cessation of therapy, exacerbate[19,24] .

Depending on the role of occlusal splint, we distinguish interdental shields, repositioning and stabilizing splints[19,20]. They can be made of soft or hard material. The soft polyvinyl splints have a protection role and do not serve to correct occlusal interferences. Splints made of acrylate have a predominantly stabilizing role and are more durable from soft splints. Due to the correction of occlusal contacts during prosthetic rehabilitation of the presented patient, in the described case we decided to use soft splint providing the patient protection and comfort simultaneously.

Conclusion

The therapy of bruxism is multifactorial and requires close cooperation between specialists in different areas. Making prosthetic restorations in patients with bruxism aims to primarily solve the lack of lost teeth, but also prevents possible damage to the orofacial system by parafunctional activities.

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