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CASE REPORT
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ZATVARANJE PERZISTENTNE ORO-NAZALNE FISITULE SA OPTURATOR PROTEZOM

CLOSURE OF PERSISTENT ORO-NASAL FISTULA WITH REMOVABLE OBTURATOR DENTURE

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Apstrakt

Uvod. Rascepi usne i nepca predstavljaju relativno česte kongenitalne anomalije. Pacijenti sa rascepom zahtevaju multidisciplinarni pristup u lečenju i tim koji može da uključuje maksilofacijalnog hirurga, ortodonta, logopeda, pedijatra, protetičara, psihologa, kao i sve one stručnjake koji mogu da pomognu u povratku funkcija orofacijalnog sistema.

Prikaz slučaja. U ovom radu je opisan slučaj protetske rehabilitacije bezube pacijentkinje sa oronazalnom fistulom, nakon više hirurških intervencija, sprovedenih u različitim medicinskim ustanovama, u cilju sanacije rascepa primarnog i sekundarnog nepca.

Zaključak. Dobro isplanirana protetska terapija kod odraslih pacijenata sa rascepom nepca i totalnom bezubošću daje zadovoljavajuće rezultate u pogledu funkcije i estetike.

Ključne reči: oronazalna fistula; rascep primarnog i sekundarnog nepca; privremena opturator proteza

Abstract

Introduction. Cleft lip and cleft palate are relatively common congenital deformities. Patients with clefts require multidisciplinary treatment approach and a team which may include a maxillofacial surgeon, orthodontist, speech therapist, pediatrician, prosthetician, psychologist, as well as the relevant experts who may be of help in restoring the function of the orofacial system.

Case report. The paper describes a case of prosthetic rehabilitation of an edentulous female patient with oronasal fistula, after multiple surgical interventions performed in various medical institutions in order to treat her cleft primary and secondary palate.

Conclusion. Well planned prosthetic treatment of adult patients with cleft palate and total edentulousness can produce satisfactory results in view of both function and esthetics.

Key words: oronasal fistula, cleft primary and secondary palate, temporary obturator prosthesis

Uvod

Rascepi usne i nepca predstavljaju relativno česte kongenitalne anomalije. Učestalost rascepa usne i nepca u opštoj populaciji zavisi od rasnog, nacionalnog i geografskog porekla, kao i od socio-ekonomskog statusa. Procenje-

Introduction

Cleft lip and cleft palate are relatively common congenital deformities. The incidence of cleft lip and cleft palate in the general population depends on the racial, ethnic, and geographical origin, as well as on the socioeco-

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no je da se javlja jedan slučaj na 500 do 2500 živorođenih^{1,2}. Manifestacija ovih anomalija može ići od blažih defekata usne, pa sve do teških bilateralnih rascepa usne, alveolarnog grebena i nepca ili do teških kosih rascepa lica. Etiologija rascepa nije u potpunosti razjašnjena, ali se njihov nastanak dovodi u vezu sa brojnim faktorima, od kojih pored nasleđa, značajnu ulogu imaju i egzogeni faktori³. Smatra se da na nastanak rascepa mogu da utiču pothranjenost, zračenje tokom trudnoće, psihološki stres, teratogeni agensi, infektivni agensi⁴.

Kvalitet života pacijenata sa rascepom primarnog i sekundarnog nepca umanjen je problemima sa unošenjem hrane, razvojem zuba, razvojem gornje vilice i nosa, govorom, sluhom, disanjem, fizičkim i psihičkim razvojem^{3,5}. Lečenje pacijenata sa rascepom zahteva multidisciplinarni pristup sa dugoročnim angažovanjem. Lečenje počinje ubrzo posle rođenja i nastavlja se u različitim fazama tokom života⁶. Pružanje adekvatnog tretmana pacijentima sa kongenitalnim i kraniofacijalnim defektima ne bi trebalo samo da nadoknadi fizičke i funkcionalne nedostatke, već bi trebalo i da idealno proceni moguće psihološke efekte ovih deformiteta⁷. Poznavanje kraniofacijalnog rasta i razvoja kao i napredak i razvoj hirurških i ortodontskih metoda lečenja, pacijentima sa rascepom pruža bolji tretman i negu⁸. Pored hirurga i ortodonta, protetičari zauzimaju bitno mesto u timu za lečenje ovakvih pacijenata⁹. Uloga protetičara je da planiranjem i izradom protetskog rada uspostavi i poboljša funkcije orofacijalnog sistema. Osnovni cilj izrade opturator proteze jeste uspostavljanje funkcije žvakanja, gutanja, govora, kao i poboljšanje estetike i psihičkog stanja ovakvih pacijenata.

Opturatori su proteze namenjene zatvaranju kongenitalnih ili stečenih otvora, pre svega tvrdog nepca, i/ili okolnih tvrdih i mekih struktura.^{10,11} Danas postoji nekoliko različitih oblika opturator proteza. U zavisnosti od indikacije neke od opturator proteza su nadoknade s otvorenim, odnosno zatvorenim opturacionim segmentom, ili kombinacije s različitim sistemima tzv. atečmenima i implantatima¹². Opturator proteze mogu se izrađivati kao: hirurški ili imedijatni opturatori, tj. proteze koje se koriste neposredno nakon hirurške intervencije, interim ili prelazni opturatori, privremene proteze, koje se koriste tokom perioda oporavka i definitivni opturatori koji se izrađuju nakon zarastan-

je. It is estimated that one case occurs per 500-2.500 live births^{1,2}. The presentation of these anomalies ranges from mild lip defects to severe bilateral cleft lip, cleft alveolar ridge and palate, or severe oblique facial clefts. Etiology of the clefts has not been fully elucidated, but their occurrence can be associated with numerous factors, out of which, in addition to heredity, exogenous factors can play a significant role³. It is believed that undernourishment, radiation during pregnancy, psychological stress, teratogenic and infectious agents can play a role in the occurrence of clefts⁴.

Quality of life of the patients with cleft primary and secondary palate is compromised by the problems with food intake, tooth development, development of the upper jaw and nose, speech, hearing, breathing, physical and psychological development^{3,5}. The management of patients with clefts requires multidisciplinary approach and long-term engagement. The treatment starts soon after birth, continuing in different phases during life⁶. An adequate treatment of the patients with congenital and craniofacial defects should aim not only to make up for the physical and functional deficiencies, but also to adequately assess possible psychologic effects of the deformities⁷. The knowledge of craniofacial growth and development, as well as the advances and development of surgical and orthodontic methods of treatment, should contribute to better treatment and care of the patients with clefts⁸. In addition to surgeons and orthodontists, prostheticians play a significant role in the teams formed to treat these patients⁹. The role of prostheticians is to restore and improve the function of the orofacial system manufacturing appropriate prosthetic devices. The basic objective of obturator prosthesis is to restore the functions of chewing, swallowing, speech, and to improve the appearance and psychological status of these patients.

Obturator prosthesis are designed for closing a congenital or acquired tissue opening, primarily of the hard palate and/or contiguous alveolar/soft tissue structures.^{10,11} Several different shapes of obturator prostheses are available today. Depending on the indication, some of them are replacements with open, i.e. closed obturator segment, or the combinations with various systems, the so-called attachments and implants¹². Obturator prosthesis can be made as follows: surgical or immediate obturator, i.e.

ja tkiva i kada se očekuju minimalne promene u predelu defekta.¹⁰ U ovom radu prikazan je slučaj protetske rehabilitacije privremenom totalnom opturator protezom, primenjene kod blago mentalno retardirane pacijentkinje sa perzistentnom oronazalnom fistulom posle višestrukih hirurških tretmana rasepa primarnog i sekundarnog nepca.

Prikaz slučaja

Pacijentkinja starosti 36 godina, javila se na Kliniku za stomatologiju u Nišu, na Odeljenje stomatološke protetike, 22.10.2010.godine. U periodu od rođenja pa do dolaska na naše odeljenje, pacijentkinja je u više navrata hirurški lečena (15 puta) u različitim medicinskim ustanovama. Iz dostupne medicinske dokumentacije konstatuje se da je poslednja hirurška intervencija rađena pre nekoliko meseci u smislu zatvaranja oronazalne fistule u frontalnoj regiji maksile obostrano i rekonstrukciji alveolarnog nastavka transplantatom sa gornje ivice bedrene kosti-crista iliaca sa desne strane i lokalnim mukoznim režnjevima. U postoperativnom toku došlo je do dehiscencije i pojave infekcije, što je uslovalo gubitak transplantata i ponovno formiranje oronazalne fistule. S obzirom da je neophodno da između navedenih hirurških intervencija prođe određeno vreme (oko godinu dana), da bi se tkiva stabilizovala, indicirana je izrada privremene opturator proteze. Kliničkim pregledom smo utvrdili da je pored oronazalne fistule u usnoj duplji prisutna bezubost gornje i donje vilice (slika 1.).

Kod pacijentkinje su prisutni i znaci blage mentalne retardacije, ali i pored ograničenih intelektualnih sposobnosti pokazala je spremnost za saradnju i dobru komunikaciju u svakodnevnoj životnoj sredini. Nakon uzetih anamnestičkih podataka i kliničkog pregleda, odlučili smo se za izradu gornje totalne opturator proteze i donje totalne proteze.

U oronazalnu fistulu postavljena je vazelin-ska gaza, čime je sprečeno zapadanje otisnog materijala u nazalne šupljine. Odgovarajućim standardnim kašikama uzeti su preliminarni otisci gornje i donje vilice a kao otisni materijal korišćen je ireverzibilni hidrokoloid-alginat (Alginogal® kolor, Galenika a.d. Beograd). (slika 2. a-b).

Na dobijene anatomske modele konstruisane su individualne kašike od autopolimerizujućeg

prosthesis used immediately after surgery, the interim obturator, temporary prosthesis used during the healing stage, and definitive obturator constructed after the tissue heals and when minimal changes are expected in the defect area.¹⁰ This paper presents a case of prosthetic rehabilitation with temporary total obturator prosthesis of a female patient with mild mental retardation and an oronasal fistula after multiple surgical interventions to treat cleft primary and secondary palate.

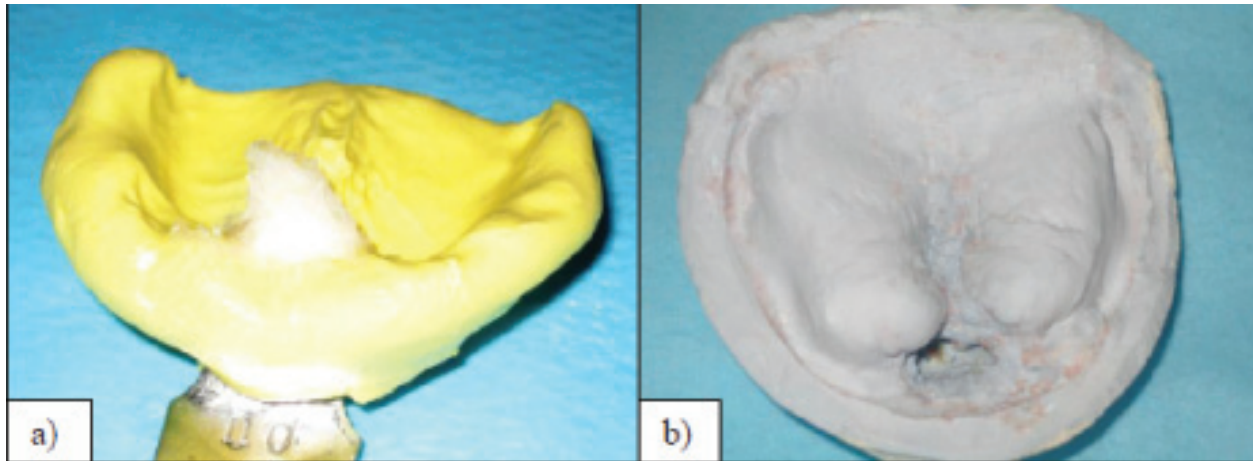
Case report

A female patient, 36 years old presented to the Dentistry Clinic in Niš, Department of Dentistry Prosthetics on 22.10.2010. In the period from birth until the arrival to our department, the patients was surgically treated in multiple instances (15 times) in various medical institutions. The available medical documentation showed that the last surgical intervention had been done several months before, consisting in the closure of her oronasal fistula in the frontal maxillar region bilaterally and reconstruction of the alveolar ridge using a transplant from the right iliac crest (crista iliaca) and local mucosal flaps.

During the postoperative course, a dehiscence developed and infection took place, causing the loss of transplant and recurrence of her oronasal fistula. Since between these surgical interventions a period of time is required to pass (about a year), allowing for tissue stabilization, a temporary obturator prosthesis is indicated. Our clinical examination revealed edentulous-



Sl.1. Prikaz oronazalne fistule nakon oporavka od hirurške intervencije
Fig. 1 Illustration of oronasal fistula after recovery from surgical intervention



Sl. 2. a) Preliminarni otisak gornje vilice, i b) preliminarni radni model gornje vilice
 Fig. 2. a) Preliminary impression of the upper jaw; and b) preliminary working model of the upper jaw

akrilata (Palavit L® tečnost i Palavit L® prašak, Galenika a.d. Beograd). Nakon obrade kašika, uzeti su funkcionalni otisci a kao otisni materijal korišćeni su silikoni (Zeta, Zhermack, Italy). Pre uzimanja otiska, ponovo je postavljena vazelinska gaza u palatinalni defekt kako bi se sprečio prodor otisnog materijala. Dobijeni su radni modeli, napravljeni zagrižajni šabloni a zatim određeni međuvilični odnosi. Određivanje međuviličnih odnosa bilo je otežano, kako zbog ograničenog otvaranja usta tako i zbog prisutne bezubosti koja je otežala određivanje vertikalne dimenzije okluzije. Modeli su preneti u artikator, odabrani su i postavljeni veštački zubi. Nakon probe postave modela budućih proteza one su definitivno završavane i obrađene (slika 3. a-b i slika 4.).

Izvršena je predaja gornje totalne opturator poteze i donje totalne proteze uz pažljivu adaptaciju kako se ne bi oštetila i povredila prethodno traumatizovana tkiva. Pacijentkinji su data sva neophodna uputstva za korišćenje i održavanje proteza.

Diskusija

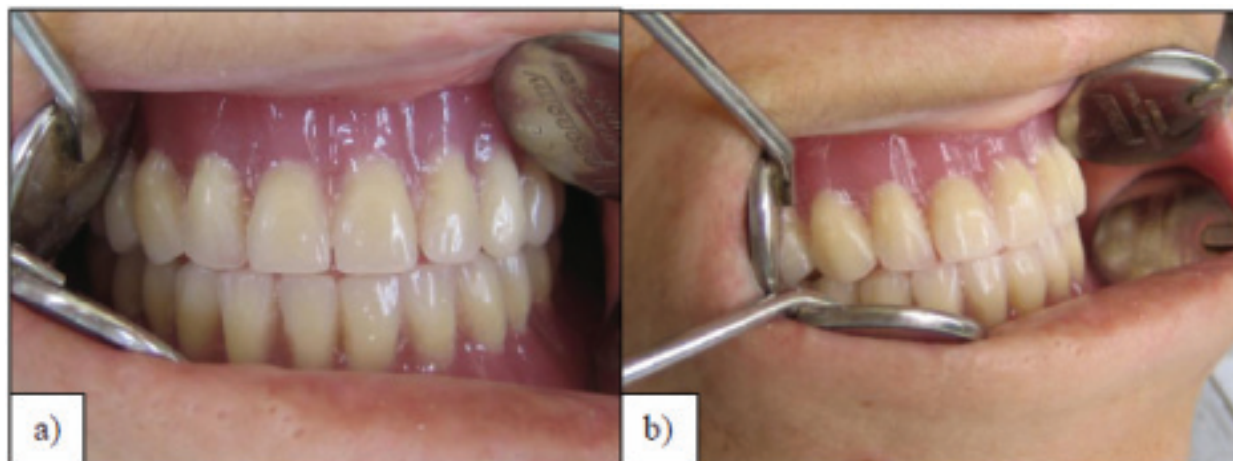
Rascepi usne i nepca, kao najčešće kongenitalne anomalije, čine oko 65% od svih kraniofacijalnih anomalija¹³. Zadatak protetske rehabilitacije pacijenata sa rascepom je, pre svega, povratak funkcija orofacijalnog sistema. Fiksne i mobilne protetske nadoknade, u kombinaciji sa implantatima, pokrovne proteze, kao i tradicionalne fiksne i mobilne proteze mogu da poboljšaju izgled lica, odnos alveolarnih grebenova, kao i funkciju kod pacijenata sa kraniofacijalnim defektima. Istraživanja su

ness of both upper and lower jaws, in addition to oronasal fistula (Figure 1).

The signs of mild mental retardation were present in the patient; nevertheless, she was very compliant and willing to communicate in her everyday life. After history taking and clinical examination, we decided to make an upper total obturator prosthesis and lower total prosthesis.

Petrolatum gauze was placed into the oronasal fistula, preventing the passage of impression material into the nasal cavities. Using the appropriate spoons, preliminary impression of the upper and lower jaws were taken; irreversible hydrocolloid alginate was used as an impression agent (Alginogal® kolor, Galenika a.d., Belgrade) (Figure 2. a-b).

Individual tray made of autopolymerizing acrylate (Palavit L® liquid and Palavit L® powder, Galenika a.d., Belgrade) were constructed upon the obtained anatomic models. After the tray were processed, functional impression were taken using silicones (Zeta, Zhermack, Italy). Before impression taking, petrolatum gauze was placed again into the palatal defect in order to prevent the passage of impression material. Working models were obtained, bite templates were made, and interjaw relationships were determined. Determination of interjaw relationships was not easy to perform because of limited opening of the mouth, as well as due to edentulousness, which impeded the determination of vertical occlusal dimension. The models were transferred onto the articulator, and artificial teeth were selected and placed into position. After the tryout of the model sets



Sl. 3. Protetske nadoknade u ustima pacijentkinje: a) pogled spreda i b) pogled sa strane
Fig. 3 Prosthetic replacements in the mouth of our patient: a) frontal view and b) side view



Sl. 4. Opturator proteza postavljena u ustima pacijentkinje
Fig. 4 Obturator prosthesis placed in the mouth of our patient

pokazala da osobe sa kraniofacijalnim anomalijama imaju pozitivnije mišljenje o sebi nakon protetskog tretmana⁷. Poboljšanje izgleda i funkcije kod pacijenata sa kraniofacijalnim anomalijama može imati veliki uticaj na sreću i produktivnost takvih pacijenata¹⁴.

U nekim slučajevima, nakon operacije rascepa nepca može ostati oronazalna fistula. Ona može da bude prisutna na nepcu, alveolarnom grebenu ili u predvoriju usne duplje¹⁵. To obično ne stvara probleme u ishrani ali može uticati na govor. Opturatori u takvim situacijama zatvaraju otvore i omogućavaju normalan govor. Ukoliko oronazalna fistula ne može hirurški da se zatvori, opturatori predstavljaju trajno rešenje¹⁶. Protetska rehabilitacija odraslih pacijenata sa rascepom nepca i bezubošću predstavlja izazov. Kod pacijenata koji imaju prirodne zube, stabilnost i retencija proteze zavisi od veličine i lokalizacije oštećenja, kao i od broja i položaja preostalih zuba¹², međutim

for future prostheses, they were completed and processed (Figures 3. a-b and 4).

The delivery of upper total obturator prosthesis and lower total prosthesis was made, with careful adaptations aimed to avoid damage or injury of previously traumatized tissues. The patient received all the necessary instructions to adequately use and maintain her prostheses.

Discussion

Cleft lip and cleft palate, being most common congenital anomalies, account for around 65% of all craniofacial anomalies¹³. The task of prosthetic rehabilitation of the patients with clefts is, above all, to restore the function of the orofacial system. Fixed and mobile prosthetic replacements combined with implants, covering prostheses, as well as traditional fixed and mobile prostheses can improve facial appearance, the relationship of alveolar ridges, and function in patients with craniofacial defects. Studies have shown that individuals with craniofacial anomalies think better about themselves after their prosthetic treatment⁷. The improvement of appearance and function in patients with craniofacial anomalies can have a significant impact on the happiness, well-being, and productivity¹⁴.

In some cases, an oronasal fistula can persist after the surgical treatment of cleft palate. The fistula may be present in the palate, alveolar ridge, or oral vestibule¹⁶. This usually does not create nutrition problems, but it can affect speech. The obturators in such circumstances close the openings and enable normal speech. If an oronasal fistula cannot be closed surgically, the obturators provide a lasting solution¹².

kod pacijenata sa bezubim vilicama nailazi se na brojne poteškoće, kako u toku uzimanja otiska tako i u postizanju stabilnosti i retencije protetske nadoknade. Iako se oronazalna fistula ispunjava gazom pre uzimanja otiska, zaštita mekih tkiva od otisnog materijala i uzimanje dobrog otiska nije jednostavno. U prikazanom slučaju, cilj je bio da se izradom totalne opturator proteze onemogući komunikacija usne i nosne duplje i obezbedi adekvatna funkcija žvakanja, govora i gutanja, odnosno prihvatljiv estetski izgled¹⁷. Dizajn opturator proteze je takav da obuhvata sva raspoloživa tkiva i zalazi u defekt kako bi se obezbedila retencija i stabilnost. Izrađena totalna opturator proteza je od akrilata, materijala koji i pored određenih nedostataka, iskorišćen u punom potencijalu, zauzima značajno mesto u stomatoprotetskoj praksi i ispunjava sve navedene zahteve.¹⁸ Iako mentalna retardacija predstavlja kontraindikaciju za izradu protetskih nadoknada¹⁹, u ovom slučaju, izrada opturator proteze je indikovana, s obzirom da se smatra privremenom i da će definitivno zatvaranje komunikacije ići hirurškim putem.

Pacijenti sa kongenitalnim anomalijama su jedinstveni i svaki slučaj treba pažljivo ispitati i pružiti što idealniji tretman. Tokom planiranja protetske terapije treba uzeti u obzir deformaciju maksilarnog segmenta, zatim eventualno postojanje nekih drugih palatinalnih nedostataka, kao i disproporciju između alveolarnih grebenova gornje i donje vilice²⁰. Adekvatno isplanirana protetska terapija u prikazanom slučaju daje zadovoljavajuće rezultate u pogledu funkcije i estetike.

Zaključak

Dobro isplanirana protetska terapija kod odraslih pacijenata sa rascepom nepca i totalnom bezubošću daje zadovoljavajuće rezultate u pogledu funkcije i estetike.

Prosthetic rehabilitation of adult patients with cleft palate and edentulousness poses a challenge. In patients with natural teeth, the stability and retention of the prosthesis depends on the size and place of the damage, as well as on the number and position of the remaining teeth¹², however, in those with edentulous jaws numerous difficulties are encountered, both during the imprint taking and in the achieving of stability and retention of the prosthetic replacement. Although the oronasal fistula is filled with gauze before the impression taking, protection of soft tissues from the impression material and adequate impression taking is not simple. In the presented case our aim was to eliminate the communication of the oral and nasal cavity by way of total obturator prosthesis, providing adequate functions of chewing, swallowing, and speech, as well as acceptable esthetic appearance¹⁷. The design of obturator prosthesis involves all available tissues and extends into the defect to provide retention and stability. Total obturator prosthesis is made of acrylic resin, the material that is prone to certain limitations, but utilized in full potential still takes important place in dental prosthetics and meets specified demands.¹⁸ Although mental retardation presented a contraindication for prosthetic replacements¹⁹, in this case obturator prosthesis was indicated since it was considered temporary and that final closure of the communication was planned to be surgically accomplished.

The patients with congenital anomalies are unique and each case should be carefully considered in order to offer the treatment as ideal as possible. In the planning of prosthetic therapy, deformity of the maxillary segment, possible existence of other palatal deformities, and disproportion between the alveolar ridges in the upper and lower jaw should be considered²⁰. Adequately planned prosthetic treatment in the reported case produced acceptable functional and esthetic results.

Conclusion

Well planned prosthetic treatment of adult patients with cleft palate and total edentulousness can produce satisfactory results in view of both function and esthetics.

LITERATURA / REFERENCES

1. Slayton RL, Williams L, Murray JC, Wheeler JJ, Lidral AC, Nishimura CJ. Genetic Association Studies of Cleft Lip and/or Palate with Hypodontia Outside the Cleft Region. *Cleft Palate-Craniofac J* 2003; 40(3): 274-279.
2. Ohyama T. Prosthodontic considerations for patients with cleft lip and palate. *Int Dent J* 1986; 36: 140-5.
3. Piščević A., Gavrić M., Sjerobabin I.: Maksilofacijalna hirurgija. Izdavačka agencija „Draganić“, Beograd 2001; godina, str. 255-274.
4. Vojvodic D, Jerolimov V: The cleft palate patient: a challenge for prosthetic rehabilitation-clinical report. *Quintessence Int* 2001; 32 (7): 521–524.
5. Rathee M, Hooda A, Tamarkar A, Yadav S. Role of Feeding Plate in Cleft Palate: Case Report and Review of Literature. *The Internet Journal of Otorhinolaryngology* 2010; 12: 1.
6. Saunders ID, Geary L, Fleming P, Gregg TA. A simplified feeding appliance for the infant with a cleft lip and palate. *Quintessence Int* 1989; 20(12): 907-10.
7. Hickey AJ, Salter M: Prosthodontic and psychological factors in treating patients with congenital and craniofacial defects. *J Prosthet Dent* 2006; 95(5): 392–396.
8. Kawakami S., Yokozeki M., Horiuchi S., Moriyama K.: Oral rehabilitation of an orthodontic patient with cleft lip and palate and hypodontia using secondary bone grafting, osseo-integrated implants, and prosthetic treatment. *Cleft Palate-Craniofacial J* 2004; 41(3): 279–284.
9. Reisberg DJ. Prosthetic habilitation of patients with clefts. *Clin Plast Surg* 2004; 31(2): 353-60
10. The Glossary of Prosthodontics Terms. *J Prosthet Dent* July 2005, 94 (1):10-92.
11. Mazaheri M. Prosthetic Speech Appliance for patients with Cleft Palate In: Berkowitz S, editor. *Cleft lip and palate. Diagnosis and management*. 2nd ed. Germany: Springer; 2005; 38: 721-733.
12. Marković D., Anđelković A., Jeremić-Knežević M.: Prosthodontic Rehabilitation after Partial Maxillar Resection by Obturator Denture Retained with the System of Attachments – Case Report. *Serbian Dental Journal* 2010; 57(2): 109-113.
13. Gorlin R, Cohen M, Hennekam R. *Syndromes of the head and neck*. 4th ed. New York: Oxford University Press; 2001; pp.1282.
14. Ayna E., Başaran E.G, Beydemir K.: Prosthodontic Rehabilitation Alternative of Patients with Cleft Lip and Palate (CLP): Two Cases Report. *Int J Dent* 2009; 515790.
15. Sala-Marti S, Merino-Tessore MD, Escuin-Henar T. Prosthetic assessment in cleft lip and palate patients: A case report with oronasal communication. *Med Oral Patol Oral Cir Bucal* 2006; 11(6): E493-6.
16. Reisberg D.J.: Dental and Prosthodontic Care for Patients With Cleft or Craniofacial Conditions. *Cleft Palate–Craniofac J* 2000; 37 (6): 534-537.
17. Ortegon SM, Martin WJ, Lewin JS: A hollow delayed surgical obturator for a bilateral subtotal maxillectomy patient: a clinical report. *J Prosthet Dent* 2008; 99(1): 14-18.
18. Krunić N., Kostić M., Anđelković M.: Akrilati-još uvek nezamenljivi materijali u stomatološkoj protetiци. *Acta Stomatologica Naissi* 2007; 23 (56): 745-752.
19. Shprintzen RJ. The velopharyngeal mechanism In: Berkowitz S, editor. *Cleft lip and palate. Diagnosis and management*. 2nd ed. Germany: Springer 2005; 32: 643-655.
20. Vojvodić D, Jerolimov V, Jokić D, Lončar A. Oral Rehabilitation of the Patient with Cheilognathopalatosis. *Acta Stomatol Croat* 2000; 34(3): 329-330.