Sažeci IX. kongresa Hrvatskoga društva za maksilofacijalnu, plastičnu i rekonstrukcijsku kirurgiju glave i vrata i III. kongresa Hrvatskoga društva za oralnu kirurgiju Hrvatskoga liječničkog zbora
Split, 24.-26.11.2011.

Rekonstrukcije u kirurgiji glave i vrata

Abstracts of 9th Congress of the Croatian Society for Maxillofacial, Plastic and Reconstructive Head and Neck Surgery, and of 3rd Congress of the Croatian Society for Oral Surgery of Croatian Medical Association
Split, Croatia, November 24-26, 2011

Reconstructions in head and neck surgery

Predsjednici • *Presidents:* Njegoslav Bušić, Darko Macan
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UVODNA PREDAVANJA

I1 REKONSTRUKCIJA U KIRURGIJI GLAVE I VRATA: JUČER-DANAS-SUTRA

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Uvod. Rekonstrukcija velikih defekata nakon resekcije tumora glave i vrata u protekla je tri desetljeća doživjela brojne promjene, kako u indikaciji tako i u metodama rekonstrukcije. *Metode.* U bazi podataka Klinike analizirani su podaci o primjeni aksijalnih režnjeva nakon resekcije tumora glave i vrata. U analizu nisu uključeni rekonstruktivni postupci s lokalnim režnjevima kod defekata kože, a obrađena su i uspoređena tri vremenska perioda (1981-90, 1991-2000, 2000-2011) te analizirane korištene metode. Režnjevi su podijeljeni u četiri osnovne skupine: lokalni aksijalni (nazolabijalni, jezični, nepčani), kožni aksijalni (čeoni, deltopektoralni, cervikalni), miokutani (scm, pektoralis major, trapezius) i slobodni mikrovaskularni. *Rezultati.* U bazi podataka uključeno je preko 10000 bolesnika s tumorima glave i vrata u kojih je korišteno ukupno 2173 aksijalnih režnjeva. U prvom periodu korišteno je 366, drugom 908, a u trećem 877 režnjeva. Stalan je porast upotrebe slobodnih režnjeva, dok se broj ostalih režnjeva u posljednja dva desetljeća nije bitno promijenio. Posljednjih godina upotreba slobodnih režnjeva gotovo je jednako česta kao i miokutanih. Praktički više ne koristimo cervikalni režanj, lateralni čeoni za rekonstrukciju usne šupljine te sternokleidomastoidni režanj. *Zaključak.* Porast primjene režnjeva u tri vremenska perioda djelomično odgovara većem broju bolesnika, ali i široj, rutinskoj primjeni režnjeva. Danas režnjeve koristimo ne samo da bismo zatvorili defekt već i omogućili bolju postoperativnu funkciju, ali i poboljšali estetski izgled bolesnika. Iako su danas najatraktivniji i često nabolji slobodni mikrovaskularni režnjevi, pektoralis major od miokutanih, deltopektoralni od kožnih aksijalnih režnjeva te jezični od lokalnih aksijalnih imaju još uvijek svoje jasno mjesto u rekonstrukciji glave i vrata.

I2 PRINCIPI REKONSTRUKCIJE SREDNJEG LICA

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Predavanje je pregled rekonstrukcijskih metoda srednjeg lica tijekom 20 godina. Prikazati će se podjela defekata srednjeg lica i njihova etiologija. Defekti srednjeg lica podijeljeni su po klasifikaciji Triane u četiri skupine. Za svaku od skupina prikazati će se mogućnosti rekonstrukcije mekog i koštanog tkiva. Za svaku metodu rekonstrukcije prikazati će se njen nastanak i razvoj te indikacije za koje su korištene te alternativne opcije. U prezentaciji biti će prikazan korištenje kalvarija graftova, titanskog mesha i mikrovaskularnih režnjeva za koštanu rekonstrukciju te lokalnih i mikrovaskularnih režnjeva za rekonstru mekih tkiva. Na kraju prezentacije prodiskutirati će se perspektive razvoja rekonstrukcije srednjeg lica.

INTRODUCTORY LECTURES

I1 RECONSTRUCTIVE HEAD AND NECK SURGERY: YESTERDAY-TODAY-TOMORROW

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Introduction. Reconstructive surgery of large defects following resection procedures of head and neck has undergone many changes regarding procedure indications and methods of reconstruction. *Methods.* Data from the Clinic's database regarding the use of axial grafts following the head and neck reconstruction has been analyzed. Reconstructive procedures of skin defects using local grafts were excluded from the analysis. Three time periods were processed and compared (1981-90, 1991-2000, 2000-11). Methods of choice form these time periods were analyzed. Grafts were divided into four basic groups: local axial (nasolabial, lingual, palatal), skin axial (frontal, deltopectoral, cervical), myocutaneous (scm, pectoralis major, and trapezius) and free microvascular. *Results*. Over 10000 patients with head and neck tumors are included in the data base and altogether 2173 axial grafts were used on them. 366 grafts were used in the first period, 908 in the second and 877 in the third period. A steady increase in the use of free grafts has been observed in the last two decades while the use of other grafts remained the same. The use of free grafts in the last few years became as common as the use of myocutaneous grafts. The use of cervical graft and lateral frontal graft for oral cavity reconstruction has become obsolete as well as the use of sternocleidomastoid graft. *Conclusion.* The increase in the number of grafts used in three time periods coincides with the increase in the number of patients and with more routine approach to graft use. Today, grafts and not only used the cover the postoperative defect, they are also used to establish better postoperative function and to improve patients' aesthetics appearance. Even though the free microvascular grafts are the most attractive and the best, other grafts like pectoralis major, myocutaneous, deltopectoral, skin axial grafts, lingual graft and local axial grafts still find their place in the reconstructive surgery of head and neck.

I2 THE PRINCIPLES OF MID FACE RECONSTRUCTION

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This lecture is an overview of mid-facial reconstructive methods during last 20 years. There will be a presentation on classification of mid-face deformities and their etiology. Mid-face deformities are divided based on Triane classification into four groups. Reconstruction possibilities of soft and osseous tissue will be demonstrated for each group. Each reconstructive method will be presented from its origins through the phases of development along with the indications for each alternative reconstructive method. The presentation will demonstrate the use of calvaria grafts, titanium mesh and microvascular grafts for osseous reconstruction and local and microvascular grafts for soft tissue reconstruction. At the end of the presentation we will discuss the growth potential of the mid-face reconstructive methods.

I3 SEKUNDARNE TRAUMATSKE REKONSTRUKCIJE

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Uvod. U zbrinjavanju maksilofacijalnih ozljeda u mnogim je slučajevima nemoguće u inicijalnom zahvatu postići kompletnu funkcionalnu i estetsku restauraciju, posebno ako se radi o ozljedama s većim defektom tkiva (npr. većina strijelnih i eksplozivnih ozljeda). Sljedeći razlog za kasnije zahvate je incijalno neprovedeno, nepotpuno ili neadekvatno zbrinjavanje koje nije pravovremeno prepoznato i ispravljeno. Zbog toga su posttraumatske rekonstrukcije relativno česti i očekivani zahvati. Cilj rada je utrditi učestalost i vrste posttraumatskih rekonstrukcija koje se najčešće izvode. *Materijal.* U Klinici za kirurgiju lica, čeljusti i usta u Zagrebu od 1.1.2001. do 1.11.2011. operirano je, prema operacijskoj dokumentaciji, 19970 pacijenata, od kojih su 2012 bili akutno traumatizirani bolesnici (9,57%), a u 968 (4,84%) izvršena je sekundarna rekonstrukcija. U ovom broju nisu uključeni pacijenti u kojih je isključivo odstranjen osteosintetski materijal, niti pacijenti s ambulantnim i manjim korekcijama ožiljaka, već samo oni u kojih je proveden neki oblik mekotkivne ili koštane rekonstrukcije. *Rezultati.* U 126/968 pacijenata (13%) sekundarna rekonstrukcija je provedena nakon strijelne i eksplozivne ozljeda (uključivo i samoranjavanje), a ostali su imali klasične načine ozljeđivanja (promet, udarci, padovi). Osteotomije zbog nepovoljnog položaja ulomaka bile su izvršene u 175/968 pacijenata (18%), osteoplastike (sa ili bez osteotomije) u 164/968 (17%), a treće po učestalosti bile su posttraumatske septorinoplastike (13%).

I3 SECONDARY RECONSTRUCTIONS AFTER MAXILLOFACIAL TRAUMA

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Introduction. In many cases when dealing with maxillofacial injuries involving large defects (e.g. most gunshot and explosive injuries), it is impossible to achieve complete functional and aesthetic restoration during initial procedures. Other reasons for additional procedures include initial unimplemented, incomplete or inadequate procedures that were recognized and corrected on time. Due to before mentioned reasons, post-traumatic reconstructions are relatively common and expected procedures. The purpose of this presentation is to determine the incidence and types of most commonly performed posttraumatic reconstructions. *Materials.* According to surgical room documentation, during the period from 1.1.2001. to 1.11.2011. at the Department of Oral and Maxillofacial Surgery in Zagreb, 19970 patients were operated where 2012 were acutely traumatized (9,57%) and in 968 (4,84%) cases, secondary reconstructive procedures took place. This number excludes patients that underwent removal of osteosynsthetic material and patients with minor scar tissue correction. Only the patients with soft tissue and osseous reconstructions were taken into account. *Results.* In 126/968 patients (13%) secondary reconstruction took place after gunshot and explosive injuries (self-inflicted injuries included), other patients exhibited the usual scope of injuries (traffic, impact, falls). Osteotomies due to unfavourable fragment placement were performed in 175/968 patients (18%), osteoplastic procedures (with or without osteotomy) in 164/968 patients (17%), and the third most common procedure was post-traumatic septorhinoplasty (13%).

I4 REKONSTRUKCIJE U OKULARNOM PODRUČJU

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Cilj. Prikazati posebnosti rekonstrukcija u okularnom području s obzirom na specifičnu anatomiju, fiziologiju i patologiju regije. *Metode.* U desetogodišnjem razdoblju pratio sam vlastite rezultate operacija tumora, ptoza, blefaroplastika, rekonstrukcija nakon trauma i drugih zahvata iz područja okuloplastične kirurgije. *Rezultati.* Najčešće rekostrukcije u okularnom području su zbog odstranjenja bazeocelularnih karcinoma. *Zaključak.* Posebnosti građe i funkcije očnih adneksa (vijeđa, suznog aparata i orbitalnih tkiva) čini okuloplastičnu rekonstruktivnu kirurgiju neizostavnim dijelom rekonstruktivne kirurgije glave i vrata.

I4 RECONSTRUCTIONS IN OCULAR REGION

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Aim. To demonstrate the uniqueness of reconstructions in ocular region due to specific anatomy, physiology and pathology of the region. *Methods.* During the period of ten years, I have documented the results of my own surgical procedures on tumours, ptosis, blepharoplasties, reconstructions after trauma and other procedures in the area of oculoplastic surgery. *Results.* The most common reconstruction procedures in ocular region are associated with the removal of basal cell carcinoma. *Conclusion.* The specifics of build and function of the ocular adnexa (eyelid, lacrimal apparatus and orbital tissue) make oculoplastic reconstructive surgery integral part of head and neck reconstructive surgery.

I5 PROCJENA REKONSTRUKCIJE ALVEOLARNOG GREBENA INTRAORALNIM AUTOLOGNIM KOŠTANIM BLOKOM

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Osnovne metode rekonstrukcije alveolarnog grebena su osteoindukcija korištenjem odgovarajućih faktora rasta, osteokondukcija gdje augmentacijski materijal stimulira stvaranje nove kosti, distrakcijska osteogeneza uz pomoć različitih vrsta distrakcijskih naprava, tkivno vođena regeneracija kosti uz pomoć različitih vrsta neresorbirajućih i resorbirajućih membrana i na kraju vaskularizirani koštani graftovi vitalne kosti s vlastitom krvožilnom opskrbom. Obzirom na veliki broj provedenih postupaka na obje čeljusti kombinacijom svih navedenih metoda u našoj ustanovi, u ovom izlaganju ćemo se ograničiti samo na pacijente u kojih su provedeni postupci augmentacije dijelova alveolarnog grebena s intraoralnim autolognim koštanim blokom u svrhu implantoprotetske rehabilitacije u proteklih 5 godina. Praćeno je 20 autolognih koštanih blokova, od kojih je 14 postavljeno u maksilu, 12 interkanino, i 6 u mandibulu, od čega 1 interkanino. S ramusa je uzeto 17, a s brade 3 koštana bloka, svi kvadratičnog oblika. U njih je postavljeno 35 implantata, što statistički iznosi oko 2 implantata po graftu. Postupak je uključivao fiksaciju grafta osteosintetskim vijcima 1,2 mm, njegovo prekrivanje s ksenogenim koštanim materijalom (Bio-Oss®) i resorptivnom membranom (Bio-Gide®). Postavljanje Ankylos® dentalnih implantata uslijedilo je ovisno o slučaju poslije 4 do 6 mjeseci. Opisani slučajevi su vrlo širokih indikacija u smislu od rekonstrukcije alveolarnog grebena za nadoknadu samo jednog zuba, bilo da se radi o gornjoj ili donjoj čeljusti, do planirane potpune koštane rekonstrukcije autolognim intraoralnim koštanim blokovima u obje čeljusti za kompletnu implantoprotetsku rehabilitaciju. U izlaganju su opisane indikacije i kontraindikacije za rekonstrukciju dijela ili čitavog grebena autolognim koštanim transplantatima, tehnike i postupci podizanja grafta s donorskog mjesta te njegova smještaja na primateljsko mjesto i fiksiranja, te na kraju postavljanje dentalnih implantata u novo stvoreni alveolarni greben. Na kraju slijedi deskriptivno statistički prikaz provedenih kiruških postupaka prema veličini i mjestu donorskog i primateljskog područja, komplikacija tijekom i nakon zahvata, te broja postavljenih implantata sa stopom preživljavanja.

Rad je izrađen u okviru projekta 065-1080057-0429 Ministarstva znanosti, obrazovanja i športa Republike Hrvatske.

I5 EVALUATION OF ALVEOLAR RIDGE RECONSTRUCTION USING INTRAORAL AUTOLOGOUS OSSEOUS GRAFTS

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The basic methods of alveolar ridge reconstruction are osteoinduction using appropriate growth factors; osteoconduction where augmented material stimulates new bone formation; distractional osteogenesis using various distractional devices; tissue guided bone regeneration using various types of nonresorptive and resorptive membranes and in the end, vascularised osseous grafts of vital bone with appropriate blood vessels. Due to a large number of procedures in our Department on both jaws combining all before mentioned methods, we will only focus on the augmentation methods using intraoral autologous osseous grafts for the purpose of implantprosthetic rehabilitation. The period of observation includes last five years. 20 autologous grafts were observed. 14 were placed in the upper jaw, 12 between canines. 6 grafts were placed in the lower jaw, 1 between canines. 17 grafts were taken from the mandibular ramus, 3 grafts were taken from the chin. All were square shaped. All together 35 implants were placed in the grafts. This statistically translates into 2 implants per graft. The procedure included graft fixation using 1,2 mm osteosynthetic screws, covering the graft using xenogenic osseous material (Bio-Oss®) and resorptive membrane (Bio-Gide®). Ankylos® implant placement followed the graft procedure after 4 to 6 months, depending on the case. The described cases have a broad range of indications for alveolar ridge reconstruction. The ridge can be reconstructed in order to facilitate replacement of a single tooth in lower or upper jaw or autologous intraoral osseous blocks can be used for a complete osseous reconstruction of upper and lower jaw in order ot facilitate for implantprosthetic rehabilitation. This presentation will demonstrate indications and contraindications for partial or full ridge reconstruction using autologous osseous grafts, techniques and procedures for harvesting the graft from the donor spot and its subsequent placement, graft fixation and implant placement into newly formed alveolar ridge. In the end, there is a descriptive display with statistical reference of surgical procedures in reference to size and place of the donating and receiving place, complications during and after procedure, number of implanted implants with respective survival rates. *This work has been partially supported by Croatian Ministry of Science, Education and Sports Grant No. 065-1080057-0429.*

PREDAVANJA

O1 REKONSTRUKTIVNE METODE U MAKSILOFACIJALNOJ KIRURGIJI - KBC RIJEKA

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Onkološka kirurgija glave i vrata ima svoje standarde koji se moraju zadovoljiti, a operabilnost u ovoj regiji danas nije limitirana mogućnostima rekonstrukcije. Postoji čitav niz rekonstruktivnih postupaka u zbrinjavanju defekata mekih i koštanih tkiva. Uz poznatu činjenicu kako su lice i usta estetski i funkcionalno zahtjevne regije važna je procjena i odabir najpovoljnije metode. Veličina, položaj operacijskog defekta koji determinira ju funkcionalni deficit, čimbenici vezani uz bolesnika (komorbiditet), a svakako i uz kirurga (educiranost, opremljenost) utječu ne samo na odabir metode već u konačnici i na završni uspjeh liječenja. U radu se daje prikaz najčešćih rekonstruktivnih zahvata koji se koriste na Klinici za maksilofacijalnu i oralnu kirurgiju KBC-a Rijeka posljednjih godina i u sadašnjem periodu. a defekte nakon odstranjenja malignoma kože u primjeni su najviše lokalni kožni režnjevi (transpozicijski, rotacioni, klizni i njihova kombinacija), a za veće površine i opsežnije defekte deltopektoralni i mikrovaskularni radijalni režanj. Za rekonstrukciju nakon onkoloških zahvata u usnoj šupljini i orofarinksu u rutinskoj je primjeni miokutani pektoralis major režanj, često za dno usta i tonzilarnu regiju jezični režanj, a u nekim slučajevima slobodni radijalni režanj. Kod zahtjevnijih defekata praćenih većim žrtvovanjem koštanog tkiva koriste se i mikrovaskularni složeni (koštani) režnjevi, a tada u timu sa specijalistom traumatologije. Traumatološki defekti i to najčešće orbitalnih kostiju zadnjih se godina na Klinici u najvećem broju slučajeva rekonstruiraju Titanium MESHom. Značajan je iskorak učinjen u rekonstruktivnoj kirurgiji defekata čeljusnih kostiju i grebena (nakon tumora, cisti, traume) korištenjem koštanih graftova – mandibule, kriste iliake, kalvarije, a što pruža mogućnost u završnici liječenja uspješne implanto-protetske rehabilitacije.

O2 MOGUĆNOSTI REKONSTRUKCIJE ALVEOLARNOG GREBENA

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Rekonstrukcijski zahvati u području alveolarnog grebena koriste se za nadoknadu koštane strukture i razvijaju se danas gotovo isključivo u kontekstu implantologije, odnosno implantoprotetske rehabilitacije pacijenata. U tu svrhu koriste se tvornički pripravci anorganskog dijela životinjske kosti, zatim sintetički materijali, u novije vrijeme tvornički pripremljena ljudska kost, a zlatni standard u toj vrsti rekonstrukcija svakako je autologni koštani transplatat. U slučajevima manjeg, lokaliziranog nedostatka kosti, rekonstrukcija je jednostavna, rezultat je vrlo predvidiv i uglavnom zadovoljava i pacijenta i terapeuta. Rekonstrukcija se uglavnom riješava u jednom operativnom postupku, međutim u slučajevima veće generalizirane atrofije, ili patoloških defekata čeljusnih kostiju problem je složeniji, a krajnji rezultat ovisi o nekoliko momenata (veličina defekta, odabir prave metode, broju operativnih zahvata, motiviranosti pacijenta), pa i krajnji rezultat nije u potpunosti predvidiv. Vrlo često potrebno je učiniti više operativnih aktova da bi se postigao zadovoljavajući rezultat. Augmetacija autolognim koštanim transplatatom, kao zlatni standard rekonstrukcije alveolarnog grebena koristi se i u slučajevima manjeg nedostatka koštane strukture, kada donorna mjesta nalazimo unutar usne šuplljine, dok u slučajevima izraženijih atrofija grebena ili većih defekata alveolarne kosti ne nalazimo dovoljnu količinu kosti na intraoralnim donornim mjestima i moramo posezati za ekstraoralnim transplatatima. Najčešća intraoralna mjesta su na ramusu i korpusu mandibule te na bradi dok su najčešći ekstraoralni „siteovi„ na zdjeličnoj kosti i kalvariji. U ovoj vrsti rekonstrukcije jako je važno da ne smije biti trajnih posljedica u donornoj regiji te je vrlo važan odabir iste. U ovom radu autori prezentiraju neka od svojih iskustava i stavove o ovoj vrsti kirurgije.

O3 REKONSTRUKCIJA PEKTORALNIM REŽNJEM U ŽENA

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Uvod. Pektoralis major (PM) režanj, jedan od najkorisnijih i vjerojatno najiskorištenijih režnjeva u rekonstrukciji onkoloških defekata glave i vrata već je više od trideset godina u upotrebi. Jedna od kontroverzi vezanih uz PM režanj je njegova upotreba kod žena zbog smještaja režnja u području dojke. Smatra se da se odizanjem režnja čini estetski nenadoknadiva šteta a i da je samo odizanje režnja zbog dojke otežano, a prokrvljenost kože nesigurna. U radu će biti prikazane žene u kojih je tijekom sedmogodišnjeg razdoblja upotrebljen PM režanj i raspravljene prednosti i nedostaci ove metode rekonstrukcije u žena. *Materijal.* Od 1.1.2005. do 14.11.2011. u Klinici, prema operacijskoj dokumentaciji, učinjeno je 230 rekonstrukcija pektoralis major režnjem. U prethodnom sedmogodišnjem razdoblju (1998-2004) učinjeno je 457 rekonstrukcija pektoralis major režnjem,

ORAL PRESENTATIONS

O1 RECONSTRUCTIVE METHODS IN MAXILLOFACIAL SURGERY – UNIVERSITY HOSPITAL CENTER RIJEKA

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Oncological head and neck surgery has its standards that need to be satisfied and operability in this region in not limited in terms of reconstructive procedures. There are many reconstructive procedures concerning soft and osseous tissue management. Acknowledging the fact that face and mouth represent aesthetically and functionally demanding region, it is important to evaluate and choose the most appropriate method. Size and the location of the defect determine the patient's functional deficit. Other factors such as patient's morbidity and surgeon's experience and equipment determine not only the method of choice but they determine the treatment outcome. This presentation gives an overview of the most common reconstructive procedures used in our Department during last few years and recently. For defect reconstruction after skin malignoma surgery, local skin flaps are the procedure of choice (transpositional, rotational, sliding, and combination of mentioned). Larger surfaces and extensive defects are treated using deltopectoral and microvascular radial flaps. Reconstruction of the oral cavity and oropharynx following the oncological surgery routinely calls for the use of myocutaneous pectoralis major flap. Floor of the mouth and tonsillar region calls for the use of lingual flap, and in some cases, free radial flap. More demanding defects followed by larger osseous defects call for microvascular complex (osseous) flaps in coordination with the trauma specialist. Trauma defects, most often of the orbital bones, are reconstructed during last few years using the Titanium MESH. Considerable outreach has been made in reconstructive surgery considering jaw bones and alveolar ridge (after tumours, cysts and trauma) with the use of mandibular osseous grafts, iliac crest, calvaria all of which gives an opportunity for more successful outcome of implantprosthetic rehabilitation.

O2 POSSIBILITIES OF ALVEOLAR RIDGE RECONSTRUCTION

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Reconstructive procedures in the alveolar ridge region are used to compensate for the loss of the osseous structures and are developed exclusively for the purpose of dental implantology or implantprosthetic rehabilitation of the patient. For that purpose factory made products containing inorganic parts of animal bone are used along with synthetic materials and industrially prepared human bone. Golden standard in this type of reconstruction still remains the autologous osseous graft. In the case of lesser, localized bone loss reconstruction is simpler, results predictable and is mostly satisfactory for both the patient and the therapist. Reconstruction is mostly solved during one operational procedure. In case of larger generalized atrophy or pathological defects of jaw bones the problem is more complex and the end result depends on the few factors (defect size, method of choice, number of operative procedures, patient's motivation) so the outcome is not completely predictable. It is often necessary to do several operational procedures in order to achieve satisfactory end result. Augmentation using autologous osseous graft represents gold standard and is used in cases of minor osseous defects and when donor sites are located intraoral. In case of extensive ridge atrophy or larger alveolar bone defect there aren't any suitable intraoral donor spots. In such cases we must reach out for extraoral grafts. Most common intraoral donor sites are on mandibular ramus, corpus and on the chin. Most common extraoral sites are on the pelvic bone and calvaria. In this type of reconstruction it is very important not to leave any permanent defects on the donor site as well are to choose the proper donor site. In this presentation the authors present some of their experiences and attitudes towards this type of surgery.

O3 RECONSTRUCTION IN WOMEN USING PECTORAL FLAP

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Introduction. Pectoralis major flap (PM) is one of the most valuable and most frequently used flaps when reconstructing defects of the head and neck region for the last thirty years. One of the controversies associated with the PM flap is the use of the flap in women due to the flap's position towards the breast. It is considered that when harvesting the flap an irreparable aesthetic damage occurs in the process along with the difficult flap elevation and uncertainty with skin blood supply. This presentation will cover a period of seven years where PM flaps were used on women. It will also discuss advantages and disadvantages of this reconstructive method on women. *Material.* According to operating room documentation, during the period from 1.1.2005. to 14.11.2011., 230 reconstructions using PM flap were performed. During the previous seven year period (1998-2004)

što govodi da se broj ovih režnjeva prepolovio sve većom primjenom mikrovaskularnih režnjeva. Od navedenih 230 režnjeva 32 su primjenjena za rekonstrukciju defekta u žena. Analizirani su: dob pacijentica, sijelo tumora i tip rekonstrukcije (primarna, sekundarna), a u grupi dostupnoj praćenju analizirani su i estetski i funkcionalni rezultati. *Rezultati.* Raspon dobi bolesnica bio je od 42 do 82 godine. Ispod 50-te bile su četiri bolesnice, najviše ih je bilo između 50-te i 60-te godine (31.25%), a iznad 70-te petero. Najčešća lokalizacija tumora bila je intraoralna 17/32 (šest retromolarnih, tri dna usne šupljine, tri jezik, dvije obrazne sluznice, dvije gingive mandibule i jedna gingiva maksile). Osam tumora bili su u orofarinksu (od čega tri baza jezika i četiri tonzila). Samo u jedne bolesnice resekcija je učinjena zbog sarkoma mandibule u ostalih se radilo o planocelularnom karcinomu.U dvije bolesnice reseciran je ekstenzivni kožni tumor a u jedne metastaza tumora kože u obrazu. U 29 bolesnica učinjena je primarna rekonstrukcija neposredno nakon resekcije tumora (u 25 commando operacija), u dvije rekonstrukcija nakon propadanja mikrovaskularnog režnja, a u jedne kasna sekundarna rekonstrukcija dvije godine nakon maksilektomije. Prema evidenciji povijesti bolesti niti u jedne bolesnice nije bilo komplikacija mjesta uzimanja režnja niti značajnijih komplikacija na mjestu presađivanja. U evidenciji praćenja 14 bolesnica je bez recidiva od koji osmero više od dvije godine, petero ih je umrlo zbog recidiva a za ostale nisu dostupni podaci. Deset bolesnica bez bolesti, koje su u praćenju autora rada, su funkcijski potpuno uredno, niti jedna nema sondu niti kanilu a defekt na mjestu uzimanja režnja ne pričinja im niti estetske niti funkcionalne nelagodnosti. *Zaključak.* Pektoralis major režanj u žena je metoda na koju se može računati i kao primarnu rekonstrukciju a i u slučaju neuspjeha mikrovaskularnog režnja. Metoda je uhodana, komplikacije su rijetke a nema dokaza da je režanj manje siguran niti da prouzročuje zamjetan estetski ili funkcionalni deficit.

there were 457 reconstructions using PM flap. This tells us that the number of PM flap surgeries halved due to the increased use of microvascular flaps. From the accounted 230 flaps, 32 were used to reconstruct defects on women. We analyzed patients' age, initial tumour location and type of reconstruction (primary, secondary) and aesthetic and functional results if available. *Results.* Patients' age ranged from 42 to 82. 4 patients were under 50. Most patients were between 50 and 60 (31.25%). There were 5 patients above 70. Most common tumour localisation was intraoral 17/32 (6 retromolar, 3 floor of the mouth, 3 tongue, 2 buccal mucosa, 2 mandibular gingival, 1 maxillary gingiva). Eight tumours were on oropharynx (three on tongue basis and four tonsillar). Only in one patient resection was done due to mandibular sarcoma, others were affected by squamous cell carcinoma. In two patients extensive skin tumour was resected. In one patient resection was done on the cheek skin due to tumour metastasis. In 29 patients primary reconstruction took place immediately after tumour resection (in 25 commando operations). In two patients reconstruction was done after microvascular flap failed. One patient underwent late secondary reconstruction two years after maxillectomy. Based on the data from the records, not a single complication occurred on the flap donor site and no significant complications were recorded on the flap recipient site. 14 patients had no recurrence, 8 more than two years. 5 patients died due to recurrence. Data was not available for other patients. 10 patients in follow-up are functioning normally without catheter or cannule and graft harvesting site does not present and aesthetic of functional complications. *Conclusion.* Pectoralis major flap surgical procedure in women is a method a practitioner can count on for a primary reconstruction and in the case of microvascular flap failure. Method is well established, complications are rare and there is no proof that the flap is less secure or that it causes considerable aesthetic or functional deficit.

O4 DELTOPEKTORALNI REŽANJ U KIRURGIJI GLAVE I VRATA

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Cilj. Utvrditi pouzdanost deltopektoralng režnja kod rekonstrukcije defekata glave i vrata, kao i estetske i funkcionalne rezultate. *Metode.* Provedena je retrospektivna analiza deltopektoralnih režnjeva korištenih za rekonstrukciju defekata glave i vrata na Odjelu za maksilofacijalnu kirurgiju KBC Osijek, u periodu od 1.1.2002. do 1.10.2011. Analizirana je učestalost komplikacija deltopektoralnih režnjeva ovisno o mjestu rekonstrukcije, indikaciji za rekonstrukciju te prethodnoj iradijaciji kože glave i vrata. Rezultati su prikazani deskriptivnom statistikom. *Rezultati.* U ispitivanom periodu korišteno je 27 deltopektoralnih režnjeva kod rekonstrukcije defekata glave i vrata. U 18 (67%) bolesnika radilo se o defektima kože vrata, u 6 (22%) o defektima kože lica, a kod troje bolesnika (11%) o sluzničnim defektima usne šupljine i orofarinksa. Kod 17 (63%) bolesnika radilo se o recidivu bolesti, a u preostalim slučajevima o primarnom tumoru; 4 (15%), nekrozi kože vrata; 3 (11%), oro ili faringo-kutanoj fistuli; 2 (7,4%), ožiljku; 1 (3,6%). Rubna nekroza režnja zabilježena je kod 4 (14,8%) bolesnika. *Zaključci.* Učestalost rubne nekroze režnja u ovoj studiji korespondira s do sada objavljenim rezultatima drugih autora. Deltopektoralni režanj je režanj prvog izbora za rekonstrukciju defekata kože vrata, naročito nakon zračenja. Također, autori smatraju vrlo dobrim i etetski rezultat kod rekonstrukcije defekata lica.

O4 DELTOPECTORAL FLAP IN HEAD AND NECK SURGERY

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Aim. To determine the reliability of the deltopectoral flap when reconstructing head and neck defects along with the aesthetic and functional results of the same. *Methods.* Retrospective analysis of deltopectoral flaps was made used for head and neck reconstruction during the period from 1.1.2002. to 1.10.2011. The occurrence of complications arising from the use of deltopectoral flaps was analyzed. Analysis was based on the reconstruction spot, reconstruction indication and previous head and neck skin radiation. Results are shown using descriptive statistics. *Results.* During the analysed period 27 deltopectoral flaps were used for head and neck defect reconstruction. 18 patients (67%) had neck skin defects, 6 (22%) had face skin defects and 3 patients (11%) had defects of oral and oropharyngeal mucosal defects. 17 patients (63%) had recurrence, and other patients exhibited primary tumours; 4 (15%), neck skin necrosis; 3 (11%), oro or pharyngeal-cutaneous sinus tract; 2 (7,4%), scar; 1 (3,6%). Flap border necrosis was observed in 4 (14.8%) patients. *Conclusion.* The prevalence of flap border necrosis in this study corresponds with the published results observed by other authors. Deltopectoral flap is the flap of choice for neck skin reconstruction, especially after radiation therapy has taken place. Some authors consider it to provide appropriate aesthetic results when reconstructing facial defects.

O5 REKONSTRUKCIJA DEFEKATA KRANIJALNOG SVODA MIKROVASKULARNIM REŽNJEVIMA

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Rekonstrukcija defekata kranijalnog svoda predstavlja zahtjevan izazov zbog specifičnosti regije središnjeg živčanog sustava. Mikrovaskularni prijenos tkiva je nažalost u većini slučajeva i jedini mogući izbor budući da upotreba lokalnih režnjeva vrlo često rezultiraju s likvorejom, meningoencefalitisom, osteomijelitisom te osteoradionekrozom nakon provedene iradijacijske terapije. Cilj ovoga prikaza je prikazati raznolikost defekata nakon resekcije kranijskog svoda, opcije rekonstrukcije kalvarije aloplastičnim materijalima te upotreba različitih vrsta mikrovaskularnih režnjeva ovisno o tipu i veličini defekata kranijskog svoda i moždanih ovojnica, komplikacije liječenja i cjelokupna uspješnost liječenja.

O5 CRANIAL DOME DEFECT RECONSTRUCTION USING MICROVASCULAR FLAPS

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Reconstruction of cranial dome presents a challenging task due to specific region of central nervous system. Microvascular tissue transfer is unfortunately in many cases the only method of choice because the use of local flaps very often results in liquorrhea, meningoencephalitis, osteomyelitis and osteoradionecrosis after radiation therapy. The purpose of this presentation is to depict the variety of defects after cranial dome resection; options for cranial dome reconstruction using aloplastic materials; the use of different kinds of microvascular flaps dependent on the type and size of cranial dome and meningeal defects; complications during treatment and the overall success rate of treatment.

O6 KIRURŠKO LIJEČENJE RASCJEPA USNICE - PRIMARNO OBLIKOVANJE

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Operacije rascjepa nazivamo plastikom usne i nepca, no to ne podrazumijeva ubacivanje "stranih materijala" u mjesto rascjepa. Riječ plastika potiče od grčke riječi plastikos i znači

O6 CLEFT LIP SURGERY – PRIMARY SHAPING

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Cleft operations are called plastic surgery of the lip and palate. This does not imply the introduction of „foreign materials" to the cleft. Word „plastic" is derived from the Greek work „plastikos" which means „shaping". Surgical techniques enable lip, nose and palatal

oblikovanje. Kirurške tehnike omogućavaju oblikovanje usne, nosa i nepca vlastitim tkivom djeteta uz poštivanje anatomskih odrednica te smještanje ožiljaka na najmanje vidljivim mjestima. Kod rascjepa usne ništa ne nedostaje, samo je postavljeno na "krivom" mjestu. U primarnom kirurškom liječenju rascjepa usne, za konačni funkcijski i estetski rezultat, od iznimne je važnosti oblikovanje linije incizije. Svi posljedični kirurški koraci ovise o dizajnu te linije. Do XIX stoljeća kirurški pristup liječenju rascjepa uglavnom je podrazumijevao "osvježavanje" rubova i približavanje krajeva usne "zatvaranje u ravnoj liniji. Malgaine i Mirault sredinom XIX stoljeća godine oblikuju režnjeve na usnici čime je povećana adheziona površina cijeljenja ali i uvedena mogućnost oblikovanja. Slijedi cijeli niz autora koji "oblikuju" linije incizije i kreiraju režnjeve u cilju boljeg estetskog rezultata. Većina tehnika imala je ravne, geometrijske linije. U kirurškom liječenju rascjepa usne važno je pomenuti i francuskog kirurga Victora Veaua koji u svojoj knjizi iz 1938. godine naglašava važnost rekonstrukcije muskulature kao primarni cilj i osnovu svake tehnike. To je zapravo početak funkcionalne kirurgije. Učestalošću s 1 na 700 novorođenčadi jednostrani rascjepi usne i danas su čest izazov u rekonstrukciji. Veliki broj tehnika je opisan ali je i dalje Millardova tehnika klizno-rotirajućih režnjeva najpopularnija širom svijeta. Metoda je opisana 1957. godine. Tehnika je anatomski logična, usna je "prirodnog" oblika a ožiljak "skriven" u anatomskoj brazdi. Modifikacije linije incizije rotirajućeg režnja i "back-cut" omogućavaju veći opseg rotacije čime se postiže adekvatna dužina i prirodan oblik usne na nerascijepljenoj strani. Dužina usne na rascijepljenoj strani može se produžiti pomicanjem incizije lateralno duž vermiliona, pomicanjem linije dublje u nos ili kombinacijom sa Pfeiferovom S linijom incizije (tzv. Afroze incizija). Prednost Millardove tehnike je i što dopušta individualne modifikacije prilagođene svakom pojedinom pacijentu. Tehnika također omogućava sekundarne korekcije koristeći istu liniju incizije s manjim korekcijama u dizajnu. "Nedostatak" metode je što zahtijeva iskustvo, no sa sve većim osobnim iskustvom Millardovom metodom moguće su brojne manje modifikacije prilagođene svakom pojedinom tipu rascjepa. U prezentaciji su prikazana vlastita iskustva i modifikacije tehnike rotirajuće-kliznog režnja. Kirurškom liječenju rascjepa usne ne treba pristupati shematski i standardizirano, nego individualno svakom djetetu kako u kirurškom liječenju tako i u vremenu operacije.

shaping using preexisting tissue with the respect for the anatomical guidelines and appropriate scar positioning to the least visible position. There is no missing tissue in the lip cleft procedure. The only problem is that the existing tissue is „misplaced". During the primary surgical lip cleft procedure it is of the greatest importance to properly shape the first surgical incision. The following surgical steps and the final functional and esthetic result depend on that initial incision. Up until 19.th century the surgical procedures concerning clefts primarily focused on „freshening up" the cleft edges and connecting them in the straight line. Malgaine and Mirault during mid 19.th century started to shape the flaps around the cleft therefore increasing the adhesion of healing surface and introducing the possibility of cleft shaping. Following their work emerged a series of authors who started to „shape" the incision lines and create flaps in order to achieve better aesthetic results. Most techniques were based on straight, geometric lines. French surgeon, Victor Veaua, is an important figure to mention when talking about reconstructive cleft surgery. From his book published in 1938., the author mentioned reconstruction of musculature as a primary goal of every technique. This is marked as a beginning of functional surgery. With frequency of 1 on 700 newborns, one-sided lip clefts represent a reconstruction challenge even today. There are many techniques described, but Millard's technique of sliding-rotating flaps remains the most popular one around the world. This method was described in 1957. Technique is anatomically sound, lip is shaped naturally and the scar is hidden in the anatomical crease. Modifying the incision line of the rotating flap and „back-cut" make possible for larger rotational magnitude which in turn provides for adequate length and shape of the lip on the non-clefted side. The length of the lip on the clefted side can be modified by moving the incision laterally along the vermillion, by moving the incision line into the nose or by combination with Pfeifer's S incision line (so-called Afroze incision). The advantage of Millard's technique is that it allows for individual modifications adjusted for each patient. This technique also allows for secondary corrections using the incision line with minor adjustments. Disadvantage of this method is that it demands experience, but with greater personal experience, Millard's technique allows for many minor modifications fitted for each individual cleft. This presentation demonstrates personal experience and modifications on rotating-sliding flap technique. Each surgical treatment of lip cleft should not be treated as a standardized procedure based on a specific scheme. It should be individually modified for each child in terms of surgical treatment and length of the procedure itself.

O7 REKONSTRUKCIJA OBOSTRANOG RASCJEPA USNICE I NEPCA KAO PRIPREMA ZA IMPLANTOPROTETSKU REHABILITACIJU

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Rekonstrukcija i rehabilitacija pacijenata s rascjepom zahtijeva dugoročno i multidisciplinarno liječenje. Tradicionalno je protetska rehabilitacija uključivala fiksnoprotetske nadomjestke sa ili bez ortodontke pripreme. U novije vrijeme napretkom i usavršavanjem tehnika koštane augmentacije alveolarnog grebena nudi se mogućnost za implantoprotesku rehabilitaciju.
Prikazujemo slučaj 28-godišnjeg pacijenta s obostranim rascjepom čiji smo alveolarni koštani defekt augmentirali autolognim koštanim graftom s ramusa mandibule i ksenogenim koštanim materijalom (Bio-Oss). Uslijedila je implantoprotetska rehabilitacija sa zadovoljavajućim i predvidljivim funkcijsko-estetskim rezultatom.

O7 BILATERAL CLEFT LIP AND PALATE RECONSTRUCTION FOR IMPLANT PROSTHETIC REHABILITATION

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Reconstruction and rehabilitation of cleft patients demands long term multidisciplinary approach to therapy. Traditionally, prosthodontic rehabilitation included fixed prosthodontics with or without previous orthodontic therapy. Today with the advancement in the field of osseous alveolar ridge augmentation techniques, new treatment opportunities emerge in terms of implant prosthetic rehabilitation. Case report presents a 28 year old patient with bilateral cleft lip and palate. We augmented his alveolar ridge using autologous osseous graft taken from mandibular ramus in combination with xenogenic osseous material (Bio-Oss). Implant prosthetic rehabilitation followed the augmentation procedure with satisfying and predictable functional and aesthetic results.

O8 REKONSTRUKCIJE DONJE USNICE NAKON ABLACIJE TUMORA – OSVRT NA WEBSTEROVU METODU REKONSTRUKCIJE TOTALNOG DEFEKTA DONJE USNICE

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Zadaća usnica je višestruka. One su zapravo prednji sfinkter usne šupljine, pa tako služe zaštiti usne šupljine, a pri hranjenju spriječavaju prelijevanje hrane i sline. Stoga su u rekonstrukciji usnica vrlo bitne visina i pokretljivost. Donja usnica, za razliku od gornje nema anatomskih posebnosti (philtrum, Kupidov luk, nazolabijalna brazda), ali njena je vrlo velika zadaća kod
hranjenja jer svojom visinom spriječava prelijevanje hrane. Pokretljivost donje usnice je vrlo bitna jer sudjeluje u mimici govora uz već spomenutu ulogu kod hranjenja. Za rekonstrukciju donje usnice, osim klinaste ekscizije koja je moguća u rekonstrukciji do 1/3 defekta usnice i vermilionektomije (Spira-Hardy 1964.), za veće defekte koriste se stepeničasti klizni režnjevi (Johanson 1974., Skoog). Za totalnu odnosno subtotalnu rekosntrukciju donje usnice, u ovom radu prikazana je Websterova metoda iz 1960. koja apsolutno zadovoljava sve zadaće donje usnice zahvaljujući postignutoj visini i pokretljivosti. Postoje i druge metode rekonstrukcije donje usnice npr. Karapandžićeva koja je s obzirom na svoju funkcionalnost, tj. pokretljivost bolja od prethodne, jer se radi o prijenosu neuromusklularnog snopa, ali estetska komponenta daleko zaostaje za prethodnom (mi-

O8 RECONSTRUCTION OF THE LOWER LIP AFTER TUMOR ABLATION – REVIEW ON WEBSTER'S METHOD FOR THE LOWER LIP TOTAL DEFECT RECONSTRUCTION

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Lips perform multiple roles. They are actually the anterior sphincter of the oral cavity, and as such, they protect the oral cavity and in their function they act to avoid food and saliva from being spilled from the mouth. When reconstructing lips main priorities are to obtain appropriate height and mobility. Lower lip has no anatomical specifics as the upper lip has (philtrum, Cupids arch, nasolabial sulcus). One of the main roles of the lower lip is avoid food from being spilled while maintaining its height. Mobility of the lower lip is also important for speech and speech mimicry. When reconstructing the lower lip we can use wedge excision that works for up to 1/3 of the lower lip and vermilionectomy (Spira-Hardy 1964). For larger defects we can use step like sliding flaps (Johanson 1974, Skoog). This presentation depicts total or subtotal reconstruction of the lower lip using the Webster's method from 1960. This method absolutely satisfies all the tasks in reconstruction of the lower lip because it maintains height and preserves mobility. There are other methods of lower lip reconstruction, for example Karapandžić's method. This method supersedes the previously mentioned one in terms of functionality, i.e. better mobility due to neu-

krostomija). Iako relativno stara Websterova metoda zadovoljava funkcionalne i estetske zahtjeve, naravno, uz zadovoljavanje principa onkološke kirurgije.

romuscular graft transfer but aesthetic component falls far behind the Webster's method (microstoma). Even though it is relatively old, Webster's method satisfies functional and aesthetic demands keeping in mind the principles of oncological surgery.

O09 ŠTO JE MUŠKARAC BEZ BRKOVA - PRIKAZ SLUČAJA

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Planocelularni karcinom može se javiti bilo gdje na koži. Osobito je čest u području glave i vrata uglavnom zahvaćajući lice i vrat, a rjeđe meki oglavak. Navedeni karcinom također mnogo češće zahvaća donju nego gornju usnicu. U radu je prikazan pacijent s uznapredovalim planocelularnim karcinomom gornje usnice, te rekonstrukcija defekta nakon ekscizije.

O09 WHAT IS A MAN WITHOUT A MUSTACHE? – CASE REPORT

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Squamous cell carcinoma can appear anywhere on the skin. It is particularly common in the head and neck region affecting both facial and skin of the neck. Lower lip is more often affected than the upper one. This report shows a patient with late stage squamous cell carcinoma of the upper lip and the appropriate defect reconstruction after the excision.

O10 REKONSTRUKCIJE USNICA NAKON RESEKCIJE PLANOCELULARNOG KARCINOMA U KLINICI ZA KIRURGIJU LICA, ČELJUSTI I USTA KB DUBRAVA

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U prikazu rekonstrukcija usnice nakon resekcije planocelularnog karcinoma u bolesnika liječenih u Klinici za kirurgiju lica, čeljusti i usta KB Dubrava, pokazati ćemo učestalost upotrebe i pregled pojedinih tehnika resekcije i rekonstrukcije gornje i donje usnice u relaciji s TNM statusom tumora. Učinjena je retrospektivna analiza podataka iz baze podataka onkoloških pacijenata Klinike za kirurgiju lica, čeljusti i usta, te su uključeni pacijenti koji su operirani zbog planocelularnog karcinoma gornje ili donje usnice u periodu od 1.1.1990 godine do 31.12.2005. godine. U tom razdoblju je operirano 193 pacijenata od kojih je 11 (5,69%) imalo karcinom gornje usnice, 180 (93,26%) karcinom donje usnice i 2 (1,03%) karcinom donje usnice sa zahvaćanjem komisure i širenjem na gornju usnicu. Od 11 karcinoma gornje usnice osam (72,72%) je bilo T1, dvoje T2 (18,18%) , dok se u jednog nije mogao procijeniti status. Od 180 karcinoma donje usnice 93 (51,66%) je bilo T1, 50 (27,77%) T2, 14 (7,77%) T3, 4 (2,22%) T4. Dva karcinoma donje usnice sa zahvaćanjem komisure i širenjem na gornju usnicu bila su T4. Za 19 bolesnika nije bilo podataka. U liječenju karcinoma gornje usnice najčešća metoda resekcije je bila klinasta ekscizija s primarnim zatvaranjem defekta (40%) jer je većina karcinoma otkrivena u ranom stadiju (T1). Još su korišteni i klizno - rotacijski režnjevi, obrnuta rekonstrukcija po Karapandžiću, a za defekte centralnog dijela rekonstrukcija po Abbeu. Za rekonstrukciju jednog karcinoma donje usnice sa zahvaćanjem komisure i širenjem na gornju usnicu koristili smo McGregorov režanj, a u drugom slučaju mikrovaskularni podlaktični režanj istovremeno s jezičnim režnjem. Kod karcinoma donje usnice najčešće je rađena klinasta ekscizija s primarnim zatvaranjem (83,8%) jer je većina karcinoma otkrivena u ranim stadijima (T1). Kod T2 karcinoma donje usnice podjednako su korišteni: primarno zatvaranje, rekonstrukcija po Karapandžiću te rekonstrukcija po Websteru (po 26%). Kod T3 karcinoma (14 pacijenata) vrat je klinički bio pozitivan u 6 (42%) slučajeva, a negativan u 8 (58%) bolesnika. U bolesnika s klinički pozitivnim vratom učinjena je ekscizija tumora i disekcija vrata od kojih u trojice i marginalna resekcija mandibule. U pacijenata s klinički negativnim vratom rađena je resekcija tumora. Najčešća rekonstrukcija kod T3 karcinoma bila je unilateralna rekonstrukcija po Websteru (57,14%), druga po učestalosti rekonstrukcija po Karapandžiću (21,4%), zatim bilateralna rekonstrukcija po Websteru (14,28%) te ostale metode. Kod T4 karcinoma (4 slučaja) vrat je bio pozitivan u dva slučaja. Kod klinički pozitivnog vrata učinjene su resekcija tumora s disekcijom vrata i segmentalnom resekcijom mandibule. U dva pacijenta s klinički negativnim vratom učinili smo resekciju tumora s marginalnom (1 slučaj) ili segmentalnom resekcijom mandibule (1 slučaj). Kod T4 karcinoma korištena je rekonstrukcija po Websteru (25%), kombinacija rekonstrukcije po Websteru i Karapandžiću (25%), rekonstrukcija pektoralnim režnjem po Ariyanu (25%) te kombinacija pectoralis major i cervikalnog rotacijskog režnja (25%). *Zaključak.* Najveći broj karcinoma usnice (49%) liječen je u I stadiju bolesti pa nisu bile potrebne složene rekonstrukcije. Od složenijih rekonstrukcija najčešće su korištene metode rekonstrukcije po Websteru (13,4%) i rekonstrukcije po Karapandžiću (9,8%). Metoda rekonstrukcije defekta nastalog nakon resekcije planocelularnog karcinoma usnice prvenstveno ovisi o veličini primarnog tumora i njegovoj lokalizaciji.

O10 LIP RECONSTRUCTION AFTER RESECTION OF SQUAMOUS CELL CARCINOMA IN THE DEPARTMENT OF ORAL AND MAXILLOFACIAL SURGERY, UNIVERSITY HOSPITAL DUBRAVA

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We will present the frequency and overview of different techniques used in lip defect reconstruction following the excision of squamous cell carcinoma. Different techniques and their frequency of use will be related to TNM tumour status. All of the mentioned procedures were performed by the employees of the Department of Oral and Maxillofacial Surgery, University Hospital Dubrava. Retrospective analysis was made using the data from the Department's database. Patients included in the analysis were the oncology patients who were operated for squamous cell carcinoma of the upper or lower lip in the period from 1.1.1990. to 31.12.2005. 193 patients were operated in that period. 11 (5.69%) had carcinoma on upper lip, 180 (93.26%) had carcinoma on lower lip and 2 (1.03%) had carcinoma on lower lip spreading through commissure on the upper one. From 11 upper lip carcinoma 8 (72.72%) were T1, 2 were T2 (18.18%) while one tumour could not be classified. From 180 lower lip carcinoma 93 (51.66%) were T1, 50 (27.77%) were T2, 14 (7.77%) were T3 and 4 (2.22%) were T4. Two carcinoma of the lower lip with the affected commissure and spreading on the upper lip were T4. 19 cases presented no data. When treating upper lip carcinoma the method of choice was wedge excision with primary defect closure (40%) due to the fact that most carcinoma had T1 status. Other techniques used were sliding-rotating flaps, reverse reconstruction according to Karapandžić and reconstruction according to Abbe in case of centrally located defects. McGregor's flap was used for reconstruction of the defect left from carcinoma that affected commissure while spreading on the upper lip. In other similar defect, surgeons used microvascular flap from the forearm region in combination with lingual flap. Wedge excision with primary closure was the method of choice for lower lip carcinoma defects (83.8%) due to the fact that most carcinoma had T1 status. Methods used with T2 carcinoma were primary closure, reconstruction according to Karapandžić and reconstruction according to Webster (26%). T3 carcinoma patients (14 patients) had clinical positive neck nodes in 6 (42%) cases and clinical negative neck nodes in 8 (58%) cases. Patients with positive neck nodes underwent tumour excision and neck dissection. Three of them had marginal mandibular resection done. Patients having negative neck node had only tumour excision operations done. Most common reconstruction on T3 carcinoma was unilateral reconstruction according to Webster (57.14%), second in place was reconstruction according to Karapandžić (21.4%) third was bilateral reconstruction according to Webster (14.28%) followed by other methods. With T4 carcinoma (4 cases) neck was positive in two cases. Neck positive patients underwent tumour resection, neck dissection and segmental mandibular resection. Neck negative patients underwent tumour resection with marginal (1 case) or segmental mandibular resection (1 case). Method of choice in T4 carcinoma was reconstruction according to Webster (25%), combination of Webster and Karapandžić (25%), reconstruction using pectoral flap according to Ariyan (25%) and combination of pectoralis major and cervical rotational flap (25%).
Conclusion. The largest number of lip carcinoma (49%) was treated in T1 state and thus complicated reconstructions were avoided. Complex reconstruction methods used are reconstruction according to Webster (13.4%) and reconstruction according to Karapandžić (9.8%). Method of choice for defect reconstruction depends primarily on the size and localization of the primary tumour.

O11 SEAGULL FLAP - MUDAR IZBOR ZA REKONSTRUKCIJU DISTALNIH DIJELOVA NOSA

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Prvi pokušaji rekonstrukcije nosa zabilježeni su prije više tisuća godina. Za rekonstrukciju nosa u Indiji je korišten triangularni režanj kože čela 600 godina prije Krista. Nakon nekoliko modifikacija, taj režanj doradio je Ralph Millard 60-tih godina prošlog stoljeća

O11 SEAGULL FLAP – A WISE CHOICE FOR DISTAL NOSE SEGMENT RECONSTRUCTION

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First attempts of nose reconstruction were recorded several thousands of years ago. 600 years BC. in India, a triangular forehead skin flap was used to reconstruct the nose. After several modifications, that same flap was modified by Ralph Millard during the 1960's

i otada se primjenjuje kao jedan od najvažnijih režnjeva u rekonstrukciji nosa. Zbog sličnosti sa obrisom galeba u letu poznat je kao seagull flap. Područje indikacija za ovaj režanj su rekonstrukcije defekata vrška nosa, nosnih krila, kolumele i dorzuma nosa. Zbog bogate krvne opskrbe (a. supratrochlearis, a. supraorbitalis, a. infratrochlearis, angularni ogranci a. facijalis i anastomotskog pleksusa), omogućeno je dizajniranje režnja prema udaljenosti, veličini i obliku defekta. Opskrba režnja temeljena je na unilateralnim spomenutim krvnim žilama, koje se nalaze u "repu galeba". U prikazanom slučaju radi se o rekonstrukciji defekta vrška nosa, nosnih krila i kolumele nakon odstranjenja bazocelularnog karcinoma. "Glava galeba" poslužila je za pokrivanje defekata kolumele te medijalnih i donjih dijelova predvorja nosa, "galebova krila" za rekonstrukciju nosnih krila i lateralnog dijela lijevog predvorja nosa. Dio "tijelo galeba" omogućio je rekonstrukciju djelomičnog defekta dorzuma nosa. Duljina i oblik "galebovih krila" (bilateralnih pedikula) određuje se prema veličini i obliku defekta nosnih krila. Odvajanje peteljke režnja vrši se nakon tri tjedna. Prednosti ovog režnja su odlična prokrvljenost, veliki doseg, rijetke komplikacije i prihvatljiv estetski ishod. Komplikacije i konačni estetski ishod proporcionalni su vještini kirurga. Glavni nedostatak ovog postupka je operacija u dva akta. Smatramo da je seagull flap zahvalan izbor za rekonstrukciju defekata distalnih dijelova nosa, bez obzira na njihovu veličinu.

and ever since it had been used as one of the most important flaps for nasal reconstruction. Due to its outline similarities to a flying seagull, the flap is called seagull flap. Areas of indications for this flap are reconstruction of the nasal tip, nasal wings (alar), dorsum and columella. Due to a rich blood supply of the flap (a. supratrochlearis, a. supraorbitalis, a. infratrochlearis, angular branches a. facialis and anastomotic plexus) it is possible to design the flap according to distance, size and shape of the defect. Flap blood supply is based on the unilateral before mentioned blood vessels that are located in the „gull's tail". This case report presents a case of reconstruction after the removal of basal cell carcinoma. Nose tip, nasal wings and columella were reconstructed. „Seagull head" was used to reconstruct the defect of columella, medial and inferior parts of nasal antrum. „Seagull wings" were used to reconstruct nasal wings and lateral parts of left nasal antrum. Part of „seagull body" was used to partially reconstruct nasal dorsum. Length and shape of „seagull wings" (bilateral pedicles) are determined according to the size and shape of defected nasal wings. Flap pedicle is detached three weeks after the procedure. The advantages of this flap are excellent blood supply, wide reach, rare complications and appropriate aesthetic results. Complications and final aesthetic results are proportional to the surgeon's skill level. Main disadvantage of this procedure is two stage procedures. We believe that the seagull flap is a worthy choice for reconstruction of distal nose segment defects no matter what their size is.

O12 ČEONI REŽANJ U REKONSTRUKCIJI DEFEKATA NOSA

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Upotreba čeonog peteljkastog režnja u rekonstrukciji defekata nosa predstavlja već duži niz godina zlatni rekonstrukcijski standard. Na odjelu za maksilofacijalnu kirurgiju KBC Osijek u periodu od 2006.-2011. godine upotrijebljeno je 33 čeona režnja u 30 pacijenata.Totalne nekroze režnja nalazimo u dva bolesnika uslijed pogreške u kirurškom odizanju i planiranju režnja.U jednog bolesnika je čeoni režanj upotrijebljen u dva navrata zbog pozitivnih kirurških rubova. Rubna nekroza režnja uočena je u jednog bolesnika. Velika većina bolesnika je operirana u općoj anaesteziji.

O12 FRONTAL FLAP IN NASAL DEFECT RECONSTRUCTION

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The use of pedicle flap in nasal defect reconstruction represents a golden standard for many years now. In our Department, during the period from 2006. – 2011, 33 frontal flaps were used on 30 patients. Total flap necrosis is recorded in two cases due to a surgical mistake when planning and lifting the flap. In one patient frontal flap was used two times due to positive surgical edges. Marginal flap necrosis was recorded in one case. Vast majority of patients were operated under general anaesthesia.

O13 "BLOW-OUT" PRIJELOM ORBITE - KIRURŠKO LIJEČENJE I REKONSTRUKCIJA DNA ORBITE

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Od 2007 - 2011. godine liječili smo u OB Karlovac sedam "Blow-out" prijeloma orbite. Liječenje podrazumjeva operaciju u općoj anesteziji. Od tih sedam četiri su bile izolirane frakture dna orbite bez drugih prijeloma kostiju lica, a ostale tri bile su udružene s prijelomom gornje čeljusti. Dno orbite smo u četiri bolesnika rekonstruirali s prolenskom mrežicom, a u ostala tri, materijalom pakunga od /šava - konca/ i folijevim kateterom. Niti u jednom slučaju nismo imali postoperacijske komplikacije. Nismo nikada koristili titan meš pločicu za rekonstrukciju dna orbite. Smatramo da su sve korištene metode rekonstrukcije dna orbite kod prijeloma istih u OB Karlovac bile uspješne s obzirom na postoperacijski tijek. Koja je metoda i postupak kirurške rekonstrukcije dna orbite najbolja teško je zaključiti na temelju našeg iskustva. Mogli bismo kazati da izbor operacije ovisi o veličini /obimu/ prijeloma i kliničkoj slici.

O13 „BLOW-OUT" ORBITAL FRACTURE – SURGICAL TRETMENT AND ORBITAL FLOOR RECONSTRUCTION

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During the period from 2007 to 2011 we have treated 7 „Blow–out" fractures. All the treatments were done under general anaesthesia. Four out of seven fractures were isolated fractures of the orbital floor without additional fractures while other three were combined with maxillary fractures. In four cases orbital floor was reconstructed with prolene mesh while other three were reconstructed using suture–thread wrap and Foley catheter. No postoperative complications occurred. Titanium mesh was not used in any case to reconstruct the orbital floor. We concluded that all the used methods of orbital floor reconstructions were successful due to the successful post operative recovery. It is hard to decide on which method and procedure is the best one for orbital floor reconstruction based on our experience. We can say that the choice of procedure depends on the size of the fracture and clinical appearance.

O14 PODLAKTIČNI SUPRAFASCIJALNI MIKROVASKULARNI REŽANJ - OLD BUT IMPROVED

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Tradicionalni mikrovaskularni podlaktični režanj je u rutinskoj upotrebi u plastičnoj kirurgiji od 1981. Od tada pa do današnjih dana postao je jedan od najčešćih rekonstruktivnih opcija. Upoznavanjem vaskularne anatomije perforatorskih režnjeva podlaktični režanj je sve više gubio na popularnosti prvenstveno zbog značajnog morbiditeta donorske regije u usporedbi s novim perforatorskim režnjevima. Ipak postoje određene situacije u kojima je podlaktični režanj idealna metoda za rekonstrukciju, pogotovo ako se koriste znanja vaskularne anatomije perforatorskih režnjeva. Način odizanja režnja iznad fascije uz očuvanje perforatora u septumu između m.brachioradialisa i m.flexor carpi radialisa omogućuje 100% prihvaćanje kožnog presadka po Thierschu bez upotrebe sadrenog zavoja. U ovom radu prikazujemo naša iskustva i rezultate liječenja s modificiranim načinom odizanja radijalnog mikrovaskularnog režnja.

O14 SUPRAFASCIAL MICROVASCULAR FOREARM FLAP - OLD BUT IMPROVED

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Traditional microvascular forearm flap has been routinely used in plastic surgery since 1981. Ever since and up until today it has become one of the most common reconstructive options. By getting to know the vascular anatomy of the perforator flap, forearm flaps are losing their popularity due to the forearm flap's significant morbidity of the donor site where the perforator flaps do not exhibit such morbidity. There are certain situations in which forearm flap is an ideal method of reconstruction, especially if the knowledge of perforator flap vascular anatomy is not on the satisfactory level. The way to lift the flap above the fascia while maintaining the perforator in the septum between m.brachioradialis and m.flexor carpi radialis provides for 100% acceptance of the skin transplant according to Thiersch without the use of gypsum bandage. This work presents our experience and treatment results with modified way of elevating radial microvascular flap.

PREDAVANJA SPECIJALIZANATA

O15 PROMJENE U REKONSTRUKCIJI TRAUMATSKIH DEFEKATA ORBITE TIJEKOM 16 GODINA U KLINICI ZA KIRURGIJU LICA, ČELJUSTI I USTA ZAGREB

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Cilj rada. Prijelomi očne šupljine s koštanim defektom koji zahtijevaju rekonstrukciju spadaju u česte dijagnoze u maksilofacijalnoj traumatologiji. Najčešće se radi o defektima dna očne šupljine koji se pojavljuju samostalno ili u sklopu prijeloma maksile ili zigomatikomaksilarnog kompleksa. Unazad dva desetljeća korišten je niz različitih materijala za rekonstrukciju posttraumatskih koštanih defekata orbite. Cilj rada je prikazati vrste i trendove primarnih i sekundarnih rekonstrukcija dna orbite u Klinici za kirurgiju lica, čeljusti i usta unazad 16 godina. Biti će naglašene glavne prednosti i nedostaci pojedinih tehnika rekonstrukcije i razlozi za primjenu. *Materijali i metode.* Analizom baze podataka operiranih pacijenata u Klinici za kirurgiju lica, čeljusti i usta od 1.1.1996. do 1.11.2011. izdvojeni su pacijenti u kojih je napravljena primarna ili sekundarna rekonstrukcija traumatskog defekta očne šupljine. Analiziran je udio pojedinih tipova posttraumatskih defekata orbite kao i udio rekonstruktivnih materijala korištenih za pojedine indikacije. Prikazane su i promjene trendova zastupljenosti navedenih materijala u analiziranom razdoblju. Analizirani su sekundarni rekonstruktivni zahvati uz naglasak na indikacije za zahvat i korištene tehnike rekonstrukcije. *Rezultati.* Prema bazi podataka opisano je 286 primarnih rekonstrukcija defekata dna očne šupljine. U 44% slučajeva radilo se o izoliranom prijelomu dna očne šupljine, a u 56% slučajeva o defektima dna orbite u sklopu kompleksnijih prijeloma kostiju srednjeg lica. Za rekonstrukcije defekata korišten je niz materijala. Od autotransplantata najčešće su korišteni presatci ilijačne kosti, kalvarije, prednje stijenke maksilarnog sinusa te povremeno hrskavica septuma ili uške. Od ksenotransplantata je sredinom 90- ih godina korištena liodura. Od alomaterijala su korišteni silikonski implantati, medpor, vycrilska, dakronska, deksonska, prolenska i titanska mrežica. Trendovi korištenja materijala za rekonstrukciju su se mijenjali unazad 16 godina. Sredinom 90-ih su najviše korištene metode poput tamponade maksilarnog sinusa, liodura, koštani graftovi s ilijačne kosti, a uveden je i kalvarija graft. Od 2000. godine nadalje počinje trend uvođenja titanske i prolenske mrežice koji su danas na prvom mjestu po zastupljenosti u rekonstrukcijama dna očne šupljine. Analizom 115 sekundarnih rekonstruktivnih zahvata vidljivo je kako se u najvećem broju slučajeva koristi kombinacija osteotomija orbite i koštanih graftova ili titanske mrežice. *Zaključak.* Glavnina posttraumatskih defekata orbite odnosi se na defekte dna orbite. Titanska mrežica biokompatibilnošću, dostupnošću i jednostavnošću modeliranja može zadovoljiti potrebe u većini situacija. Na našoj Klinici se za kompleksnije rekonstrukcije koriste unaprijed modelirane titanske mrežice čime se postiže preciznija rekonstrukcija i kraći tijek operacije. Sintetski materijali poput silikona i medpora danas se više ne koriste kao ni tamponada maksilarnog sinusa po Lothropu. Najčešći razlog rekonstrukcije posttraumatskih deformiteta orbite su neprepoznate ili neadekvatno zbrinute frakture.

O16 AUTOLOGNI KOŠTANI GRAFT U ESTETSKOJ ZONI

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U radu se prikazuje primjena autolognog koštanog grafta (iz retromolarnog područja) u implantoprotetskoj rehabilitaciji gornjeg središnjeg sjekutića koji je odstranjen radi uzdužnog prijeloma. Navedenom metodom mogu se postići zadovoljavajući rezultati u estetskom i funkcionalnom smislu.

O17 DELTOPEKTORALNI REŽANJ U ERI MIKROVASKULARNE KIRURGIJE

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Cilj. U suvremenoj rekonstrukcijskoj kirurgiji glave i vrata sve je više opcija pri odabiru adekvatnog režnja kod pojedinog defekta. Cilj ovog istraživanja bio je pokazati postoji li i nadalje potreba za uporabom deltopektoralnog režnja u rekonstrukcijskim zahvatima, koje su opravdane indikacije te prednosti i nedostatci u svjetlu rastućeg broja danas raspoloživih režnjeva. *Metode.* Retrospektivno smo analizirali 125 pacijenata kojima je tijekom liječenja učinjen deltopektoralni režanj u razoblju od 1976. do 2011. godine koristeći bazu podataka Klinike. *Rezultati.* Tijekom 35 godina upotrijebili smo > 150 deltopektoralnih režnjeva u pacijenata s reseciranom kožom zbog kožnih karcinoma, disekcija kod metastatskih karcinoma vrata, intraoralnih karcinoma (jezika, gingive, tonzila, sluznice usne šupljine, sublingvalnog područja), karcinoma laringsa i orofarinksa, zatvaranja fistula, operacija tumora parotide i sl. Deltopektoralni režanj korišten je samostalno ili uz drugi režanj (npr.

RESIDENTS' PRESENTATIONS

O15 CHANGES CONCERNING TRAUMATIC ORBITAL DEFECT RECONSTRUCTION DURING LAST 16 YEAS FROM THE DEPARTMENT OF ORAL AND MAXILLOFACIAL SURGERY, ZAGREB

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Aim. Orbital cavity fractures with osseous defects demanding reconstruction fall under the jurisdiction of maxillofacial trauma. It is usually the case of orbital floor defects that occur individually or combined with maxillary fracture or fracture of the zygomaticomaxillary complex. During the last two decades a series of different materials have been used to reconstruct post traumatic orbital defects. The aim of this presentation is to show the types and trends of primary and secondary orbital floor reconstructions during last 16 years. The emphasis will be on the main advantages and disadvantages of individual reconstruction techniques and the reasons to use them. *Materials and methods.* By analyzing the data from operating room during the period from 1.1.1996 to 1.11.2011 we singled out the patients with primary and secondary traumatic orbital defect reconstruction. We analyzed the portion of specific types of post traumatic orbital defects as well as the type of reconstructive materials used for specific indications. We presented the change in trends of reconstruction materials used during this period. We also analysed the secondary reconstructive procedures with the emphasis on procedure indications and techniques used in such cases. *Results.* According to the database, 286 primary reconstructions of orbital floor defects were described. 44% of the cases were isolated orbital floor fractures, 56% of the cases were orbital floor defects in combination with complex mid-face fractures. Different materials were used for reconstructive purposes. The most common homologous transplants were grafts from the iliac bone, calvaria, frontal wall of the maxillary sinus and occasionally septal or ear cartilage. During the mid 90's, lyodura was often used as a xenotransplant. Most common alomaterials used for reconstruction were: medpor, vycrilic, dakron, dekson, prolene and titanium mesh. The trends have changed during last 16 years when talking about reconstructive materials. During the mid 90's the most common methods were maxillary sinus tamponade, lyodura, osseous grafts from the iliac bone and the newly introduced calvaria graft. The introduction of titanium and prolene mesh begins in the year 2000. This reconstructive material is the material of choice for orbital floor reconstructions. By looking at the analysis of 115 secondary reconstructive procedures, we can see that in the majority of the cases a most common combination used for reconstruction is orbital osteotomy with osseous grafts or titanium mesh. *Conclusion.* Majority of post traumatic orbital defects relates to orbital floor defects. With its biocompatibility, availability and modeling simplicity, titanium mesh is the material of choice in most situations. Pre modeled titanium mesh is a method of choice in our Department for more complex reconstructions because it allows for more precise reconstruction and shortens the duration of the procedure. Synthetic materials like silicone and medpore, or maxillary tamponade according to Lothrop, are no longer methods of choice for reconstructions. The most common reasons for post traumatic deformity reconstructions are overlooked or inadequately treated primary fractures.

O16 AUTOLOGOUS OSSEOUS GRAFT IN THE ESTHETIC ZONE

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This work presents the use of autologous osseous graft (from the retromolar region) in implant prosthetic rehabilitation of the upper medial incisor that was removed due to vertical fracture. The before mentioned method can yield satisfying results in functional and aesthetic way.

O17 DELTOPECTORAL FLAP IN THE ERA OF MICROVASCULAR SURGERY

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Aim. In contemporary reconstructive head and neck surgery there is an increasing number of adequate flaps to choose from for each individual defect. The purpose of this research is to show if there still is a need to use deltopectoral flap in reconstructive procedures, which are justified indications, advantages and disadvantages in the ever increasing number of available flaps. *Methods.* We retrospectively analysed 125 patients using the Clinic's database. We looked at the patients who had deltopectoral flap surgery from 1976 to 2011. *Results.* Over the course of 35 years we used over 150 deltopectoral flaps in patients with resected skin due to skin carcinoma, neck dissection due to tumour metastasis, intraoral carcinoma (tongue, gingiva, tonsils, oral mucosa, sublingual area), laryngeal carcinoma and oropharyngeal carcinoma, fistulae closure, parotid tumour operations, etc. Deltopectoral flap was used individually or with other flaps (i.e. pectoralis major) as well

m. pectoralis major) te kod primarnih kao i kod kasnijih rekonstruktivnih zahvata. *Zaključak:* Najvažnije vještine se ne svode na one tehničke potrebne pri odizanju pojedinih režnjeva, već na mudrost pri odabiru najbolje opcije u svakoj pojedinoj situaciji i pažljivo planiranje rekonstruktivnog zahvata. Deltopektoralni režanj i danas pronalazi svoje mjesto u dobro odabranih indikacija, prvenstveno za rekonstrukcije defekata kože vrata.

as with primary and secondary reconstructive procedures. *Conclusion.* The most important skills are not the ones necessary to elevate the individual flaps, but the ones that help us to determine the best possible solution for each individual situation and carefully plan the reconstructive procedure. Deltopectoral flap even today finds its place within carefully determined indications, primarily for reconstructing the skin defects of the neck.

O18 CEMENTOBLASTOM MANDIBULE

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Cementoblastom ili pravi cementom je benigni ektomezenhimalni odontogeni tumor. Relativno je rijedak, čini 1% do 8% svih odontogenih tumora. Dewey 1927. g. prvi opisuje cementoblastom. Neoplazmu čine funkcionalni cementoblasti tvoreći veliku masu cementa ili cementu sličnom tkivu vezanu uz korijen zuba. Najčešće se pojavljuje u mandibuli (79,5%) u području donjeg prvog trajnog kutnjaka (47%) i najčeće raste bez simptoma. Od simptoma, ako su prisutni, pojavljuju se bol, oteklina u zahvaćenom području, asimetrija lica i rijetko parestezije. Oba spola su podjednako zastupljena (omjer muškarci : žene 1.4:1), najčešće se javlja u drugom i trećem desetljeću života (prema literaturi 6-75 godina). Rijetko recidivira (5,9-37,1%). Procjenjuje se da je godišnji rast cementoblastoma 0.5 cm. Radiološki ga karakterizira dobro definirana radioopaktna ili različito gusto kalcificirana masa vezana uz korijen zuba, koja je okružena zonom prosvjetljenja od okolne kosti. Diferencijalno dijagnostički najčešće se spominju osteoblastom i osteosarkom. Terapija je operativno odstranjenje tumora i zahvaćenog zuba/zubi, te temeljita kiretaža defekta, a ponekad je potrebna i periferne osteotomije. Za razliku od standardnih kliničkih i radioloških karakteristika cementoblastoma u literaturi se spominju i rijetki slučajevi cementoblastoma koji odstupaju od gore navednih karakteristika. Opisane su pojave cementoblastoma u vezi sa sjekutićima, mliječnim zubima, impaktiranim ili neizniklim zubima. Objavljeno je i 6 slučaja izuzetno rijetkog cementoblastoma u djece mlađe od 10 godina. Također, opisani su i slučajevi u kojima se primijetilo lokalno agresivan i destruktivan rast tumora, koji je uključivao izbočenje kosti, eroziju kortikalne kosti, pomicanje susjednih zubi, prodor u maksilarni sinus, invaziju pulpne komore i korijenskih kanala zuba, te širenje i zahvaćanje susjednih zubi. Radiološki zabilježena su 2 slučaja pojave radiolucentnog cementoblastoma. Sve ove navedene karakteristike su iznimno rijetke. U našem izlaganju prezentirati ćemo dva slučaja cementoblastoma, njihove kliničke i radiološke karakteristike, liječenje i rezultat liječenja.

O18 MANDIBULAR CEMENTOBLASTOMA

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Cementoblastoma or genuine cementoma is a benign ectomesenchymal odontogenic tumor. It is relatively rare, and makes for 1% to 8% of all odontogenic tumors. Cementoblastoma was described for the first time by Dewey in 1927. Neoplasm is consisted of large mass of cementum or cementum like tissue attached to the root. The most frequent occurrence is the mandibular (79.5%) first molar region (47%) and is mostly asymptomatic. Is symptoms do occur, they are presented as pain, swelling in the affected area, facial asymmetry and facial paresthesia. Occurrence is equal in both sexes (ratio men:women 1.4:1). It occurs mostly during second or third life decade (according to literature 6-75 years). Recurrence is rare (5.9% - 37.1%). Estimated yearly cementoblastoma growth is 0.5cm. It is characterised radiologically as a well defined radioopaque or densely calcified mass connected to root surface and surrounded with decalcified bone. Differential diagnostics include osteoblastoma and osteosarcoma. Therapy includes tumour excision along with the affected tooth/teeth, thorough curettage, and sometimes, peripheral osteotomy. Along with standard clinical and radiological appearance of cementoblastoma, there are rare cases of cementoblastoma described in literature that present different clinical characteristics. Described cases include cementoblastoma associated with incisors, deciduous teeth, impacted or unerupted teeth. 6 extremely rare cases of cementoblastoma in children under 10 years of age have been published. Other cases were described as locally aggressive and destructive tumour growth that included bone protrusion, erosion of cortical bone, shift of adjacent teeth, protrusion into maxillary sinus, invasion of pulp chamber and root canals, expansion and inclusion of adjacent teeth. 2 cases of radiolucent cementoblastoma have been recorded. All these aforementioned characteristics are extremely rare. We will present two cases of cementoblastoma, their clinical and radiological characteristics, treatment and treatment results.

O19 BOTRIOIDNE ODONTOGENE CISTE

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Botrioidne ciste su rijetka vrsta odontogenih cista. Obično ih se smatra multilokularnom varijantom lateralnih periodontalnih cista. Po prvi su put otkrivene i opisane 1973. godine, a do danas je u literaturi opisano manje od sto slučajeva cista te vrste. Multilokularni histološki nalaz je tipičan za botrioidne ciste. Pacijenti s dijagnozom botrioidne ciste imaju viši rizik recidiva od onih oboljelih od lateralnih periodontnih cista. U našem prikazu predstavljamo jedan novi slučaj botrioidne ciste i pregled literature kojim su obuhvaćena 84 prijašnja slučaja. Rezultati naše analize pokazuju kako botrioidne ciste većinom zahvaćaju populaciju u petoj dekadi života, s nešto češćom učestalošću kod žena (53%), nego kod muškaraca (47%). Najčešće zahvaćeno područje je mandibula - u 68 slučajeva (83%). Mnogo je rjeđe zahvaćena maksila - samo 13 slučajeva (17%). Radiološki nalaz botrioidnih cista može biti multilokularan ili unilokularan. Iz analize se može zaključiti da je učestalost recidiva relativno visoka i iznosi 30.8%. Stoga je nužno dugoročno praćenje oboljelih pacijenata.

O19 BOTRYOID ODONTOGENIC CYST

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Botryoid cysts are rare type of odontogenic cysts. They are usually considered as multilocular version of lateral periodontal cyst. They were discovered and described for the first time in 1973. Until today, there are less than one hundred described cases in the literature. Multilocular histological finding is typical for botryoid cyst. Patients diagnosed with botryoid possess higher risk of recurrence than the patients diagnosed with lateral periodontal cyst. We will present a new case of botryoid cyst accompanied with literature overview of 84 previously described cases. Our results show how botryoid cysts mostly appear in the fifth life decade; with slightly higher frequency in women (53%) than in men (47%). Mandible was affected in 68 cases (83%) where the maxilla was affected in only 13 cases (17%). Radiological finding of botryoid cyst can be multilocular or unilocular. Analysis shows that recurrence is fairly common (30.8%). Therefore, long term patient observation is necessary.

O20 PRIMJENA TROMBOCITIMA OBOGAĆENOG FIBRINA U AUGMENTACIJSKIM TEHNIKAMA ORALNOKIRURŠKIH ZAHVATA

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Napredak u području suvremenih tehnika regenerativne medicine započeo je 1965. godine otkrivanjem koštanog morfogenetskog proteina. Tehnologija čimbenika rasta i danas doživljava svakodnevne promjene. Godine 1998. klinička znanost o faktorima rasta započinje svoj eksponencijalni rast, baziran primarno na rezultatima studija koje su primijenjivale kompoziciju različitih čimbenika rasta, danas poznatu kao „platelet-rich plasma" (PRP). Trombocitima obogaćena plazma (PRP) je krvna plazma obogaćena koncentratom autologni trombocita te sadrži, i otpušta tijekom degranulacije, sedam različitih čimbe-

O20 THE USE OF PLATELET-RICH FIBRINE IN ORAL SURGERY AUGMENTATION TECHNIQUES

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Advancement in modern regenerative medicine techniques begun in late 1965 with the discovery of bone morphogenic protein (BMP). That technology was primarily based on the growth factor technology and even today that same technology is being modernized and advanced on a daily basis. In the year 1998, clinical science involving growth factors begins its exponential growth based primarily on research results that used various growth factor compositions, today known as platelet-rich plasma (PRP). Platelet-rich plasma (PRP) is a blood plasma enriched with autologous platelet concentrate while containing and releasing, in the process of degranulation, seven different growth factors and

nika rasta i drugih citokina odgovornih i ključnih u stimulaciji procesa cijeljenja kosti i mekog tkiva. Teorijska podloga primjene PRP-a u regenerativnim tehnikama je učinkovitost pojedinih faktora rasta u stimulaciji i ubrzavanju cijeljenja te koncentracija istih unutar PRP-a. Bez obzira radi li se o nativnoj koštanoj regeneraciji, augmentaciji autolognim koštanim graftom ili umjetnim koštanim nadomjescima, PRP ubrzava stvaranje novog koštanog tkiva. Zahtijeva posebnu pripremu koja je danas popraćena jednostavnom i suvremenom aparaturom prikladnom i za ambulantnu primjenu. Trombocitima obogaćen fibrin (PRF) se, kao inovativni alat regenerativne medicine, primijenjuje u oralnoj i maksilofacijalnoj kirurgiji. Indikacije, u svrhu implantološke pripreme, su podizanje dna maksilarnog sinusa, augmentacijske tehnike, prezervacija postekstrakcijske alveole, parodontni defekti i kod imedijatne ugradnje implantata. Autori prikazuju kliničke slučajeve kod kojih je korištena tehnika PRF-a u kirurškom liječenju velikih cista gornje i donje čeljusti, podizanja dna maksilarnog sinusa, prezervacije postekstrakcijske alveole, terapije koštanih defekata nakon alveotomija i kirurškog liječenja periimplantatnih bolesti.

other cytokines responsible for bone and soft tissue reparation process. Theoretical background for PRP application in regenerative techniques lies in the efficiency of individual growth factors in growth stimulation, advanced healing and concentration of the same within PRP. Regardless is it the case of native bone regeneration, autologous bone graft augmentation or artificial bone implants, PRP enhances growth of the new bone tissue. Even though this technique demands special preparation, it is accompanied by modern apparatus that is widely available for standard chair-side use. Platelet-rich fibrin (PRF) found its use in oral and maxillofacial surgery as an innovative tool of regenerative medicine. Indications for its use in terms of implant preparations process are sinus-lift, augmentation techniques, post extraction socket preservation, periodontal defects and immediate implant placement. Authors present clinical cases where PRF technique was used in surgical treatment of large cysts in upper and lower jaw, maxillary sinus lift, post extraction socket preservation, osseous defect therapy after alveotomy procedure and surgical treatment of periimplantitis.

O21 MIKROVASKULARNA REKONSTRUKCIJA NOSA - PRIKAZ SLUČAJA

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Uvod. Prikazujemo slučaj neobičnog kliničkog tijeka te načina liječenja bazocelularnog karcinoma kože nosa u 55- godišnje pacijentice koja se u ambulantu Klinke javlja po prvi puta u svibnju 2000. godine radi daljnjeg liječenja histološki verificiranog recidiva tumora liječenog u vanjskoj ustanovi. Tada učinjena ekscizija i reekscizija tumora te kombinirana rekonstrukcija lokalnim režnjevima uz naknadnih osam korektivnih zahvata. Redovito je praćena uz uredan lokalni i regionalni nalaz sve do svibnja 2007. godine od kada se ne javlja na kontrolne preglede. Ponovno se javlja u ambulantu Klinike u lipnju 2011. radi pojave krasti u operiranom području. *Metode.* Učinjenom obradom dokaže se opsežan recidiv bazalioma nosa s infiltracijom gornje usnice. Učinjena rinektomija, resekcija gornje usnice te rekonstukcija nosa slobodnim hrskavičnim graftom odignutim s desnog VI. rebra za koštani okvir, te slobodnim mikrovaskularnim podlaktičnim režnjem odignutim s lijeve podlaktice za meka tkiva. Usnica je rekonstruirana obrnutim Karapandžić režnjem. *Rezultat.* Rani početni rezultat je zadovoljavajući u funkcijskom i estetskom smislu, no prethodi još nekoliko korektivnih zahvata do evaluacije konačnih rezultata. *Zaključak.* Mikrovaskularna rekonstrukcija defekata nosa dobar je način rekonstrukcije u odabranih pacijenata.

O21 MICROVASCULAR NASAL RECONSTRUCTION – CASE REPORT

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Introduction. We present a case of an unusual clinical course along with the method of treatment of nasal skin basal cell carcinoma in a 55 year old female patient. The patient was admitted for the first time in May, 2000 for continuous treatment of histologically verified recurrence of tumour previously treated somewhere else. Excision and resection of tumour was done along with reconstruction using local flaps with eight additional corrective procedures. During follow-up period local and regional status was uneventful until May, 2007 when patient stopped attending the scheduled check-ups. She was again admitted in June, 2011 due to the emergence of crusts on the operated area. *Methods.* An extensive recurrence of basal cell carcinoma with infiltration in the upper lip was confirmed. Rhinectomy with resection of the upper lip was performed. Nasal reconstruction followed using free cartilaginous graft taken from the 6th rib on the right side for the skeletal frame in combination with free microvascular graft from the left forearm for soft tissue. Upper lip was reconstructed using reverse Karapandžić flap. *Results.* Early results are satisfactory in functional and aesthetic terms. More corrective procedures are necessary in order to evaluate final results. *Conclusion.* Microvascular nasal reconstruction is a method of choice in appropriate patients.

O22 KARCINOM U BLIZINI DENTALNOG IMPLANTATA - PRIKAZ SLUČAJA I PREGLED LITERATURE

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Prikaz slučaja pacijenta sa završenom implantoprotetskom terapijom kojem je dijagnosticiran planocelularni karcinom gingive u neposrednoj blizini dentalnog implantata. Anamnestički doznajemo o dugogodišnjoj navici uživanja cigareta i alkoholnih pića. Tri godine nakon ugradnje dentalnog implantata pacijent dolazi u KB Dubravu zbog bolova u području istog. Ortopan prikazuje nepravilno nazubljeno prosvjetljenje u mandibuli desno promjera cca 22mm u kojem se nalazi dentalni implantat. Kliničkim pregledom vidljiva ulceroinfiltrativna promjena na obraznoj sluznici, gingivi i lingvalnoj sluznici. Patohistološki nalaz: planocelularni karcinom. Pacijent je liječen kirurški (segmentalna resekcija mandibule i disekcija vrata, rekonstrukcija s fibula slobodnim režnjem) te adjuvantnom radioterapijom. S obzirom na porast popularnosti implantoprotetske terapije za očekivati je da će rasti i incidencija pacijenata s karcinomom gingive u blizini dentalnih implantata. Potrebno je istaknuti da dentalni implantati nisu faktor rizika za pojavu karcinoma gingive, već su to u ovom slučaju dugogodišnje pušenje cigareta i uživanje alkoholnih pića. Pacijenti s predisponirajućim čimbenicima za razvitak karcinoma usne šupljine zahtjevaju redovite i temeljite kontrolne preglede. Radiološki gubitak kosti oko implantata ne znači nužno okluzijsko preopterećenje implantata ili periimplantitis. Svaka mekotkivna promjena u blizini implantata koja ne prolazi na konzervativnu terapiju zahtijeva patohistološku analizu.

O22 CARCINOMA NEAR DENTAL IMPLANT – CASE REPORT AND LITERATURE OVERVIEW

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This case report presents a patient with finished implant prosthetic rehabilitation who was diagnosed with gingival squamous cell carcinoma in the vicinity of dental implant. Anamnesis shows long term habit of smoking and consummation of alcoholic drinks. Three years after dental implant was placed, the patient was admitted with severe pain in the implant area. Orthopantomogram shows irregular toothed mandibular translucency on the right side with diameter of about 22mm with dental implant in it. Clinical examination shows ulcerous and infiltrative change on buccal mucosa, gingiva and lingual mucosa. Histopathological results show squamous cell carcinoma. Patient underwent surgery (segmental mandibular resection, neck dissection, reconstruction with fibula graft) and additional radiation therapy. Due to the fact that implant prosthetic therapy is more and more popular, it is realistic to expect that there will be an increase in the number of patients with squamous cell carcinoma near dental implant. It is important to stress that dental implants are not a risk factor for the emergence of squamous cell carcinoma. Risk factors in this case include long term smoking and consummation of alcoholic drinks. Patients with predisposing risks for oral carcinoma development should be thoroughly checked up on a regular basis. Radiological bone loss surrounding the implant does not necessarily mean occlusal overload or periimplantitis. Every soft tissue change in the implant vicinity that does not respond to conservative therapy demands histopathological analysis.

O23 SKVAMOZNI ODONTOGENI TUMOR

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Skvamozni odontogeni tumor (SOT) je rijetka benigna odontogena neoplazma prvi put opisana 1975. godine. Vjeruje se da nastaje od ostataka dentalne lamine, tj. ostatka Ma-

O23 SQUAMOUS ODONTOGENIC TUMOR

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Squamous odontogenic tumor (SOT) is a rare benign neoplasm described for the first time in 1975. It is considered that it arises from the remnants of dental lamina, or so-

lasezovih tjelešaca. Uobičajeno je bezbolna oteklina, a susjedni zubi mogu biti pomični. Radiološki izgleda kao transparencija trokutastog oblika uz korijene zubi, a histološki je građen od nakupina skvamoznog epitela U radu prikazujemo bolesnicu sa SOT, probleme dijagnosticiranja i diferencijalnu dijagnozu.

called Malassez epithelial rest. The tumour appears as a painless swelling with pronounced mobility of adjacent teeth. Radiologically it appears as a triangularly shaped transparency near the root. Histological finding reveals predominantly squamous epithelial cells. This case report presents a female patient diagnosed with SOT, problems with determining the correct diagnosis and differential diagnosis.

O24 KIRURŠKI ASPEKTI KOREKCIJE BLEFAROSPAZMA

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Blefarospazam je vrsta fokalne distonije koja se odlikuje naglim i nekontroliranim stiskanjem očnih vjeđa, tako da pacijent ima problema sa spontanim otvaranjem očiju. Javlja se uglavnom u starijoj životnoj dobi i to najčešće obostrano, no ponekad može biti zahvaćena samo jedna strana. Točna priroda bolesti nije do kraja poznata, a napad može izazvati jako ili trepćuće svjetlo, vjetar, prašina i drugi iritirajući faktori. Blefarospazam može biti simptomatski i idiopatski. Uz grčevito zatvorene kapke, grčem mogu biti zahvaćeni drugi mišići lica inervirani ličnim živcem. Obično je riječ o kombinaciji toničkih i kloničnih grčeva. Bolesnik ove kretnje ne može kontrolirati, a zbog učestalih kretnji često ne može ni gledati. Liječenje blefarospazma je i danas je kontroverzno. Prolazna poboljšanja moguće je postići upotrebom botulinum toksina A u područje mišića periokularne regije. Godine 1989. u Americi FDA (Food and Drug Administration) odobrava njegovu primjenu u liječenju strabizma (razrokosti), blefarospazma (nekontroliranog grča vjeđa), hemifacijalnog spazma (nekontroliranih grčeva ličnih mišića). Kirurški aspekti liječenja danas se baziraju na primjeni znanja anatomije perifernog grananja facijalnog živca te funkcije pojedinih sastavnica m.orbicularis oculi. Selektivnim odstranjivanjem orbikularnog mišića oka dovodi se do gotovo potpune regresije simptoma uz izostanak komplikacija u smislu lagoftalmusa i ektropiona koji su pratili starije kirurške metode koje su se temeljile na selektivnoj resekciji grana facijalnog živca. U ovom osvrtu se prikazuje slučaj bolesnika koji je prethodno neuspješno liječen botulinum toksinom A tri godine, a uz poznavanje ove jednostavne kirurške tehnike lišen je neugodnih simptoma bez kirurških komplikacija koji su često vezane za kirurgiju periokularne regije.

O24 SURGICAL ASPECTS OF CORRECTION OF BLEPHAROSPASM

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Blefarospasm is a type of focal dystonia that results in sudden and uncontrolled wringing of the eye lids so that the patient has problems closing his eyes spontaneously. It usually occurs in the older age, mostly bilaterally. Sometimes only one eye is affected. The exact etiology of the disease is unknown. The attack can be triggered by strong or blinking light, wind, dust and other irritating factors. Blefarospasm can be symptomatic and idiopathic. Along with spastic eye closure, other facial muscles innervated by the facial nerve can be spastic as well. We usually see a combination of tonic and clonic spasms. The patient cannot control these movements or see due to continuous muscle activity. Blefarospasm treatment remains controversial even today. Temporary relief is possible by administration of Botox A in the muscles of the periocular region. In the year 1989, FDA approved the use of Botox to treat strabismus (cross-eye), blefarospasm (uncontrolled eye lid spasms), hemifacial spasm (uncontrolled spasm of facial musculature). Surgical aspects of treatment are based on sound knowledge of anatomy of facial nerve branching and function of m. orbicularis oculi muscle. Selective removal of orbicular nerve leads to almost complete regression of symptoms without complications like lagophthalmos and ectropion that occurred with older surgical methods based on selective facial nerve resection. In this case report we present a patient that was previously unsuccessfully treated with Botox A for three years. When applying this technique, he was freed from unpleasant symptoms without complications related to periocular surgery.

SLOBODNE TEME

O25 PRIMARNA OTVORENA RINOPLASTIKA - NAŠA ISKUSTVA

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Primarna rinoplastika u estetskoj kirurgiji i danas predstavlja izazov. Postizanje optimalnih i trajnih rezultata je moguće kroz razumijevanje anatomije nosa, individualne analize bolesnika te poznavanje odgovarajuće kirurške tehnike. Ako se poštuju navedeni principi nepovoljni ishodi za sekundarnim deformitetima i potrebom za sekundarnim korekcijama su smanjeni. Sekundarni korektivni zahvati na nosu su daleko kirurški zahtjevnije operacije sa vrlo često nekonzistentnim i nezadovoljavajućim rezultatima. Naglasak ove prezentacije je na metode koje postižu konzistentne rezultate u primarnoj rinoplastici upotrebom individualne analize i otvorene kirurške tehnike.

FREE TOPICS

O25 PRIMARY OPEN RHINOPLASTY – OUR EXPERIENCES

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Primary rhinoplasty in aesthetic surgery presents a challenge even today. In order to achieve optimal and permanent results one must thoroughly understand the anatomy of the nose, analyze the patient individually and be familiar with appropriate surgical technique. If all the aforementioned demands are met, unfavourable outcomes with secondary deformities and the need for secondary corrections are nonexistent. Secondary corrective procedures are far more surgically demanding with inconsistent and unsatisfying results. The emphasis of this presentation is on the methods that produce more consistent results in primary rhinoplasty with the use of individual analysis and open surgical technique.

O26 MOGUĆNOST PRIMJENE COLLATAMP EG SPUŽVICE KOD ORALNO-KIRURŠKIH ZAHVATA

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Kolagena spužvica (Collatamp EG, Syntacoll GmbH, Germany) impregnirana je gentamicinom koji se lokalno otpušta u koštani defekt, reducira bakterijsku floru i stabilizira novonastali ugrušak. Preparat ima uporabnu dozvolu od agencije za lijekove i medicinske proizvode RH i u kliničkoj je primjeni dvije godine. Široku primjenu je našla u abdominalnoj kirurgiji i ortopediji kao sredstvo za lokalnu hemostazu u području s velikim rizikom infekcije. U radu je opisano nekoliko slučajeva primjene Collatamp EG kolagene spužvice u oralnoj kirurgiji. Praćeni su pacijenti nakon alveotomija impaktiranih umnjaka, operacija uklanjanja velikih cista čeljusti i apikotomija dva i više zuba. Pacijenti su praćeni na osnovu kliničkih parametara (otok, trajanje postoperativne boli i pojave recidiva) te rtg. nalaza prije i poslije 3 mjeseca nakon operativnog zahvata. Dobiveni preliminarni rezultati pokazuju da Collatamp EG spužvica može naći široku primjenu u oralno-kirurškim operativnim zahvatima.

O26 THE USE OF COLLATAMP EG SPONGE IN ORAL SURGERY PROCEDURES

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Collagenous sponge (Collatamp EG, Syntacoll GmbH, Germany) is impreganted with gentamicine that is locally released into the osseous defect thus reducing the bacterial count and stabilizing the newly formed blood clot. This preparation was approved by the Croatian medication and medicinal product agency and it has been in use for two years now. This product found a wide range of use in abdominal surgery and orthopaedics as a local haemostatic when working in the are with the high contamination risk. This presentation shows several cases where Collatamp EG sponge was used in oral surgery. Cases involving alveotomy of impacted wisdom teeth, cystectomies and apicoectomy of two or more teeth were followed up. Cases were followed up based on clinical parameters (swelling, the duration of post operative pain and recurrence) and radiological appearance before operation and 3 months after the surgical procedure. Preliminary results show that Collatamp EG sponge can be used in the wide range of oral surgery procedures.

O27 SILIKONSKI PREPARATI ZA OŽILJKE U REPUBLICI HRVATSKOJ

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U Republici Hrvatskoj koriste se silikonski preparati za ožiljke od kojih je jedan prisutan duže vremena, a drugi znatno kraće. Od nedavno je na tržištu i preparat s kojim nije upoznata većina liječnika pa ga pacijenti još ne koriste. Uz njih se koriste i preparati koji djeluju na ožiljak kao i svaka neutralna krema, ali pacijenti toga najčešće nisu svjesni. Problem za liječnike je prosudba koji je od silikonskih preparata za ožiljke bolji, a sadržan je u činjenici da ne postoje objektivne medicinske studije o rezultatima korištenja istih ili su one iznimno rijetke. Važna je pravilna indikacija za korištenje, a pacijenti uzimaju u obzir i cijenu koja većini nije nevažan faktor kod donošenja odluke koji preparat kupiti i koristiti. Poželjno je da liječnik specijalist informira pacijenta i/ili njegovu obitelj temeljem kojih će oni donijeti odluku o tome da li će i koji silikonski preparat za ožiljke koristiti. Također je dobro da liječnik specijalist ukratko objasni način korištenja pojedinog preparata jer se oni u tom pogledu međusobno razlikuju, a sve to iz razloga što većina liječnika obiteljske medicine nije u dovoljnoj mjeri upoznata s tim dijelom medicinske problematike koji postaje sve važniji u današnjoj eri estetske kirurgije u širem smislu te riječi.

O27 SILICONE BASED PRODUCTS FOR SCAR TISSUE TRETMENT IN THE REPUBLIC OF CROATIA

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Silicone treatments for scar tissue are in use in the Republic of Croatia for some time now where one treatment has been on the market for a while, lot longer than the other ones. Quite recently, a new silicone treatment has been introduced to the market and has been introduced to medical doctors yet. Consequently patients are not using it as well. Besides silicone treatments, there are other products that have effect on the scar tissue as any other neutral cream and most of the patients are not aware of that fact. Problem for medical doctors lies in the fact that they lack objective information on which silicone product is better for the patient due to the fact that there are no studies on that particular issue or they are very scarce. Besides the correct indication for silicone treatment use, price also plays an important role when deciding to buy the specific product. It is desirable for the medical specialist to inform the patient and patient's family on which product to use and if it is necessary to buy the product at all. It is important for the specialist to inform the patient on how to use the product because none is alike. It is also important to inform the patient because general physicians are not familiar with this particular branch of medicine.

O28 ARTROSKOPIJA TEMPOROMANDIBULARNOG ZGLOBA - PRVA ISKUSTVA

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KBC Rijeka, Klinika za maksilofacijalnu i oralnu kirurgiju

Temporomandibularni zglob (TMZ) je zglob s najvećim brojem pokreta tijekom dana. Oko 10% populacije ima kronične tegobe s TMZ-om i traže stručnu pomoć. Većini pacijenata možemo pomoći konzervativnom terapijom, ali dio pacijenata ima tegobe i nakon sprovedene višemjesečne konzervativne terapije. Kod takvih bolesnika dolazi u obzir učiniti artrocentezu i artroskopiju TMZ-a. Artroskopija TMZ-a je dijagnostička i terapijska metoda koju dosad nije bilo moguće učiniti u Hrvatskoj zbog nedostatka opreme i educiranosti maksilofacijalnih kirurga. U KBC-u Rijeka zadnje dvije godine postoji timski pristup rješavanju tegoba TMZ-a, te se artroskopiji pristupa kada su iscrpljene konzervativne mogućnosti konzervativne terapije i nakon učinjene magnetne rezonance(MR) TMZ-a. U zglob se ulazi artroskopom vrlo malog promjera (2,5 mm) što za pacijenta predstavlja minimalno invazivan zahvat koji ne ostavlja
nikakve ožiljke.

O28 ARTHROSCOPY OF THE TEMPOROMANDIBULAR JOINT – EARLY EXPERIENCES

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Temporomandibular joint (TMJ) is the joint with the highest number of movements throughout the day. Around 10% of the population has chronic TMJ problems and they seek professional help. We can help most of the patients using conservative therapy, but in some patients symptoms persist despite the monthly conservative therapy. In such patients it is advisable to perform arthrocentesis and arthroscopy of the TMJ. TMJ arthroscopy is a diagnostic and therapeutic method that was not possible to perform in Croatia due to lack of equipment and insufficient maxillofacial surgical staff training. For the last two years at the University Hospital Rijeka there is an organized team that deals with TMJ problems. Arthroscopy is the method of choice only when all the conservative methods have been exhausted and after the magnetic resonance imaging (MRI) of the joint has been done. Joint is entered via arthroscope measuring 2.5 mm in diameter. The procedure is minimally invasive and leaves no scars.

O29 KONGENITALNI TORTIKOLIS

Njegoslav Bušić, Ivan Šimundža, Ante Mihovilović
KBC Split

Tortikolis je jedna od najčešćih prirođenih anomalija lokomotornog sustava. Bolest je karakterizirana zadebljanjem, rigiditetom i skraćenjem m. sternocleidomastoideusa, što dovodi do ipsilateralne fleksije i kontralateralne rotacije glave. Etiologija torticollisa je multifaktorska, a najčešće se povezuje s porođajnom traumom i nasljednim čimbenicima. Tijekom prve godine života liječenje prirođenog mišićnog torticollisa treba biti konzervativno, a sastoji se od fizikalne terapije, usmjeravanja djetetove pažnje u zdravu stranu, vježbi rotacije i istezanja m. sternocleidomastoideusa, korekcije položaja glave jastukom ili primjene vatiranog Schanzovog ovratnika. Ako konzervativna terapija ne poluči uspjeh (15-20% slučajeva) ipak je potrebno kirurško liječenje. U naše jedanaestogodišnje bolesnice, konzervativna terapija je bila nepravovremena, neadekvatna i neuspješna. Stoga smo se odlučili za kirurški zahvat. Kao operacijski postupak odabrali smo bipolarnu tenotomiju m. sternocleidomastoideusa. Kroz male rezove u području proksimalnog i distalnog hvatišta m. sternocleidomastoideusa izvršili smo presijecanje tetiva i djelomičnu redukciju mišića. Nakon rane postoperativne fizikalne terapije, koja je trajala ukupno šest mjeseci, postignut je vrlo prihvatljiv funkcionalni i estetski ishod, a psihološki aspekt je zadovoljen. Zaključno, držimo da je u liječenju kongenitalnog mišićnog torticollisa u djece starije od 5 godina, kod koje učinak konzervativnog liječenja nije zadovoljio, opravdan postupak bipolarna tenotomija m. sternocleidomastoideusa.

O29 CONGENITAL TORTICOLLIS

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Torticollis is one of the most common congenital anomalies of the locomotor system. The disease is characterized by thickening, rigidity and shortening of m. sternocleidomastoideus that leads to ipsilateral flexion and contralateral head rotation. Torticollis ethiology is multifactorial and is most often connected to trauma during birth and congenital factors. During the first year of life treatment of congenital torticollis should be conservative. Treatment should be consisted of physical therapy, diverting the child's attention to the healthy side, practicing head rotation and stretching of m. sternocleidomastoideus, correction of head position by pillow or by using padded Schanz's collar. If conservative therapy does not yield results (15-20% of cases), surgical treatment is the next step in line. Our eleven year old patient did not receive conservative therapy on time nor was it adequate or successful. We decided on surgical treatment. For operational procedure, we decided on bipolar tenotomy of m. sternocleidomastoideus. By entering through small incisions in the area of proximal and distal m. sternocleidomastoideus attachment, we managed to cut through the tendon and achieve partial muscular reduction. After early postoperative physical therapy that lasted all together for six months, acceptable aesthetic, functional and psychological result has been achieved. In conclusion, we believe that if conservative therapy of congenital torticollis did not yield results in children older than five years that the surgical procedure of bipolar tenotomy of m. sternocleidomastoideus should be the therapy of choice.

O30 DIFERENCIJALNA DIJAGNOZA OTEKLINE SREDNJEG LICA

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Prikazujemo bolesnika s oteklinom srednjeg lica koja se nekoliko mjeseci liječi kao kronična odontogena upala. Tek po učinjenoj biopsiji promjene u vestibulumu gornje če-

O30 DIFFERENTIAL DIAGNOSIS OF MID FACE SWELLING

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ljusti iznad očnjaka, dobije se neočekivani patohistološki nalaz koji zahtijeva radikalniji zahvat. Prikazani slučaj govori u prilog tome da svaku oteklinu koja izgleda kao odontogena upala i liječi se uobičajenim algoritmom terapije; konzervativno-endodontski ili kirurški i medikamentozno, a ne reagira adekvatno treba što prije i bolje diferencijalno-dijagnostički i timski obraditi.

We present a patient with mid face swelling that was treated as a chronic odontogenic infection. Only after biopsy was taken from the upper vestibular canine area and the histopathological analysis confirmed unexpected result that we decided on more radical approach. This case only shows that any swelling that looks like odontogenic infection and does not respond to the usual algorithm of treatment (conservative-endodontic, surgical, antibiotics) should be differentially diagnosed and treated through teamwork.

O31 AO FONDACIJA

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Prikaz rada AO fondacije, polje njezine djelatnosti i koristi uključivanja u njezin rad.

O31 AO FONDATION

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AO foundation work, the field of operation and the benefits of joining in.

O32 OTOPLASTIKA - METODA »MUSTARDE-FURNAS« - NAŠA ISKUSTVA

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Deformiteti uške u općoj populaciji su zastupljeni sa 6%. Općenito deformitete uške dijelimo na odstojeće uške, poremećaj reljefa uške, poremećaj u veličini uške i kombinirani oblici svih triju anomalija. Najčešće oblik deformiteta predstavljaju prominentne uške. Na odjelu za maksilofacijalnu kirurgiju od 2007.-2011. operirano je 82 bolesnika s prominetnim uškama kombinacijom tehnika po Mustardeu i Furnasu u većini slučajeva. U slučajevima poremećaja reljefa uške („lop ear" deformity) te duboke ušne školjke upotrijebljene su modifikacije preuzete iz tehnika opisanih za takve slučajeve. Cilj prikaza je ukazati na pouzdanost metode i trajnost rezultata, komplikacije i nisku stopa recidiva otapostaze upotrebom ovih dviju metoda.

O32 OTOPLASTY - METHOD »MUSTARDE-FURNAS« - OUR EXPERIENCES

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Ear lobe deformities are presents in general population with about 6%. Deformities are generally divided into prominent ear lobes, shape disorders, size disorders and combination of aforementioned anomalies. The most common deformity is the prominent ear lobes. During the period from the year 2007 to the year 2011 within our Department 82 patients were operated with prominent ear lobes using in most cases the combination of Mustard and Furnas techniques. In case of shape deformities („lop ear" deformity) and ear lobe depth deformity, we used modifications taken from the aforementioned techniques described for such cases. The goal of this report is to demonstrate the reliability of methods and longevity of results, complications and low degree of recurrence when combining these two methods.

O33 REKONSTRUKCIJA BAZE PREDNJE LUBANJSKE JAME U SLUČAJU MENINGOENCEPHALOCOELAE

Željko Bušić, Njegoslav Bušić, Kolja Poljak, Vlatko Ledenko, Zvonimir Tomić, Mirko Lapčić
KBC Split

Žena u dobi od 57 godina, koja se dugo godina liječi radi epilepsije, unatoč terapiji u zadnjih godinu dana imala je u par navrata krize svijesti. Hospitalizirana je zbog korekcije antiepilepsijske terapije i kontrolne neuroradiološke obrade. Nikada nije imala rinolikvoreju i meningitis. Učinjena CT i MR neurokranija pokažu tvorbu koja je dijelom ispod, a dijelom iznad baze prednje lubanjske jame. Zbog sumnje na tumor, a u pripremi za operaciju učini se biopsija kroz nos i dobije rinolikvoreja. Transkranijskim pristupom prikaže se defekt baze prednje lubanjske jame kroz koji prolabira mozgovno tkivo. Mozgovno tkivo koje prolabira se odstrani te se plasticira defekt mišićno-fascijalnim slobodnim režnjom. Potom se endoskopski-transnazalno odstrani ostatke mozgovnog tkiva iz desne nosnice. Radi se o iznimno rijetkoj i dosad u literaturi neopisanoj lokalizaciji i kliničkoj manifestaciji encephalocoelae koju je tim sastavljen od neurokiruga, maksilofacijalnog kirurga i otorinolaringologa uspješno rekonstruirao.

O33 RECONSTRUCTION OF THE ANTERIOR CRANIAL BASE IN CASE OF MENINGOENCEPHALOCOELLAE

Željko Bušić, Njegoslav Bušić, Kolja Poljak, Vlatko Ledenko, Zvonimir Tomić, Mirko Lapčić
University Hospital Split

Female patient age 57m under long term epilepsy treatment had several conscience crises during the last year. She was hospitalised for correction of epilepsy therapy and her scheduled neuroradiological check up was due. She never had rhino liquorrhea or meningitis. Neurocranial CT and MRI showed formation partially under and partially above the base of the anterior cranial fossae. Due to suspicion on tumour, biopsy through the patient nose revealed rhino liquorrhea. Using transcranial approach, the base of the anterior cranial fossae is revealed showing a defect with protruding brain tissue. Protruding brain tissue is removed and defect is covered using free muscular-fascial graft. Afterwards followed the endoscopic transnasal removal of the remaining brain tissue from the right nostril. This case report presents extremely rare and first ever localisation and clinical manifestation of meningoencephalocoellae that was successfully reconstructed by the combined effort of neurosurgeon, maxillofacial surgeon and otorhinolaryngologist.

O34 PREDNJI PRISTUP KOD REKONSTRUKCIJSKIH ZAHVATA NA VRATNOJ KRALJEŠNICI

Zvonimir Tomić, Mirko Lapčić, Vlatko Ledenko, Robert Čarija, Željko Bušić
KBC Split

Cilj našega rada je predstaviti rezultate timskog rada neurokirurga i maksilofacijalnog kirurga u liječenju degenerativnih bolesti vratne kralježnice prednjim pristupom te približiti kiruršku problematiku prednjeg pristupa na vratnu kralježnicu. Obzirom na specifičnosti prednjeg pristupa u vidu vitalnih anatomskih struktura, maksilofacijalni kirurg pristupa na trupove vratnih kralješaka da bi potom neurokirurg izvršio dekompresiju živčanih struktura i implantaciju CERVIOS alenteze kojom se uz spondilodezu postiže i izrazito važna rekonstrukcija cervikalne lordoze na razini operiranog dinamičkog vratnog segmenta. U KBC Split vratna kralješnica se operira prednjim pristupom od 1999. Ovdje ćemo prikazati rezultate 40 operiranih bolesnika u razdoblju od siječnja 2007. do studenog 2011. Preoperativno stanje bolesnika bodovali smo po Nurick skali, te je prosječna vrijednost iznosila 2,9 preoperativno, a postoperativno, 1,6. Svi operirani bolesnici imali su slijedeći Odomove kriterije operacijske rezultate između stupnja fair i excellent. Intraoperativnih, te postoperativnih komplikacija nismo imali.

O34 ATERIOR APPROACH FOR RECONSTRUCTION OF CERVICAL VERTEBRA

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The purpose of this presentation is to present the results of joint effort between neurosurgeon and maxillofacial surgeon in degenerative disease treatment of cervical vertebrae using the anterior approach. We would also like to divert the attention to problems arising from using the anterior approach to cervical vertebrae. Maxillofacial surgeon has to be aware of the specific anatomical structures when using the anterior approach to cervical vertebrae. After the anterior approach to the vertebrae corpus, neurosurgeon performs decompression of the nerves and implants CERVIOS alenthesis that combined with spondilodesis achieves important reconstruction of cervical lordosis on the level of operated dynamic cervical segment. At the University Hospital Split the anterior approach to cervical vertebrae is in use since 1999. In this presentation we will present 40 operated patients during the period from January, 2007 to November, 2011. Pre operative patient condition was graded using the Nuric scale. The average value was 2.9 preoperative and 1.6 post operative. All the operated patients had Odom's criteria between fair and excellent. Intra operative and post operative complications were nonexistent.

O35 TRODIMENZIONALNA CBCT DIJAGNOSTIKA - INDIKACIJE U ORALNOJ I MAKSILOFACIJALNOJ KIRURGIJI

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Danas nije moguće zamisliti planiranje kirurških zahvata bez precizne dijagnostike. Dijagnostika maksilofacijalne regije dugi je niz godina bila ograničena da dvodimenzionalnu radiografiju ili na MSCT snimke koje su pružale uvid u treću dimenziju, ali po cijenu visoke izloženosti zračenja pacijenta. Primjenom tehnologije konične zrake (CBCT) stvorene su mogućnosti korištenja 3D dijagnostike u slučajevima kada je uvid u treću dimenziju važan čimbenik planiranja kirurškog zahvata, a koje se do sada koristilo samo u iznimnim slučajevima. Indikacije za primjenu trodimenzionalne CBCT dijagnostike u oralnoj i maksilofacijalnoj kirurgiji su višestruke. One obuhvaćaju široki spektar kazuistike od ekstrakcija zuba, alveotomija, impaktiranih zuba, apikotomija, dijagnostike stranih tijela, TMZ, oroantralnih fistula i vestibuloplastika. CBCT koristi se i kod dijagnostike traume i fraktura, cista i tumora, rascijepa, sindroma i malformacija kao i u ortogantskoj i rekonstrukcijskoj kirurgiji. Poseban značaj CBCT ima u dentalnoj implantologiji. Karakteristike CBCT snimaka su visoka razlučivost detalja što jasno definira prostorne odnose anatomskih struktura i njihov položaj. Moguće je prikazati poprečne, aksijalne i trasverzalne presjeke, napraviti panoramsku i multiplanarnu rekonstrukciju, prikazati i promatrati svaki objekt iz tri dimenzije na tri ekrana i napraviti trodimenzionalni virtualni model koji vjerno vizualizira površinu i cjelinu maksilofacijalne regije. CBCT dijagnostika smatra se najboljim dijagnostičkim postupkom zbog najveće dijagnostičke vrijednosti uz najmanju dozu zračenja od svih 3D sustava. Zbog toga se CBCT dijagnostika smatra Standardom zdravstvene zaštite (Standard of Care) tj. radiološkim postupkom koji pruža potpunu informaciju te se pri redovnoj dijagnostici se ne bi trebala koristiti niža razina dijagnostičkih usluga.

O35 THREEDIMENSIONAL CBCT DIAGNOSTICS – INDICATIONS FOR ORAL AND MAXILLOFACIAL SURGERY

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To plan a surgical procedure without a precise diagnostics is almost unthinkable in today's world. For a long period of time, diagnostics of maxillofacial region was limited to 2D radiography or to MSCT scan that gave insight into third dimension with the down side of excessive exposure to radiation. Development of cone beam technology (CBCT) made 3D diagnostics possible and available in cases where third dimension played a major role in planning of surgical procedure. There are multiple indications for the use of 3D CBCT diagnostics in oral and maxillofacial surgery. Indications include a wide spectrum of casuistry like extractions, alveotomy, impacted teeth, apicoectomy, foreign body diagnostics, TMJ, sinus tract, oroantral fistula and vestibuloplasties. CBCT is used when diagnosing trauma and fractures, cysts and tumours, clefts, syndromes and malformations as well as for orthognathic and reconstructive surgery. CBCT has special significance in dental implantology. The characteristic of CBCT scans is high detail resolution that clearly defines spatial relations of anatomical structures and their position. It is possible to make diagonal, axial, and transverse slides; make panoramic and multiplanar reconstruction; show and observe every object in three dimensions on three screens and make three dimensional virtual models that relay information about surface and integrity of the maxillofacial region in high fidelity. CBCT diagnostic is considered to be the best diagnostic procedure due to the highest diagnostic value with the least amount of radiation of all other 3D systems. That is why CBCT is considered to be the Standard of Care. CBCT is radiologic procedure that provides complete information and it should be set as standard for regular diagnostic procedures.

POSTERI

P1 ELEKTRONSKO-MIKROSKOPSKA ANALIZA KOŠTANOG TKIVA NAKON OSTEOTOMIJE ER:YAG LASEROM I KIRURŠKIM SVRDLOM

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Uvod. Intraoralne tehnike augmentacija pomoću koštanih blokova se najčešće izvode pomoću konvencionalnih instrumenata, kao što su svrdla, pilice i dlijeta. Glavni nedostaci ovih tehnika su mehanički pritisak i vibracije koje se prenose na koštano tkivo, limitirana geometrija koštanog reza zbog oblika konvencionalnog instrumenta, zaostatni koštani debris u okolnom mekom tkivu i samim tim potencijalna infekcija te rizik od moguće ozljede okolnih mekih tkiva. Zato se posljednjih godina uvode visoko energetski laseri u područje koštane kirurgije. Prednosti bezkontaktnih infracrvenih lasera u osteotomiji su hemostatički i aseptički učinak, odsustvo mehaničkog stresa tkiva te precizan i pravilan oblik reza. *Svrha.* Svrha ovog istraživanja je bila ispitati morfološka svojstva i eventualne termički uzrokovane promjene površine koštanog tkiva nakon ablacije Er:YAG laserom i primjene klasičnog kirurškog svrdla za osteotomiju. *Materijali i metode.* Eksperimentalna studija je provedena na 30 koštanih blokova pripremljenih od svinjskih rebara, uzimajući u obzir veličinu (visinu i širinu) intraoralnih autolognih koštanih blokova učestalo korištenih u oralnoj kirurgiji i dentalnoj implantologiji. Ideja je bila, prilikom osteotomije, simulirati tunelu slične preparacije potrebne za ležišta fiksacijskih vijaka. Er:YAG laser (AT Fidelis, Fotona, Slovenia) i kirurško pilot svrdlo (Screw System, Hager&Meisinger GmbH, Germany) su upotrebljeni za izradbu osteotomija. Na svakoj pojedinoj pripremljenoj pločici izrađene su po dvije osteotomije koristeći dva ispitivana instrumenta. Tunel preparacije su izrađene kroz punu debljinu koštane pločice. Laserski parametri prilikom obrade koštanog tkiva su bili slijedeći: 0.9mm veličina točke (fokusa) u bezkontaktnom max modu (1000mJ, 20Hz), udaljenost ručnika s hlađenjem od površine kosti 10mm. Također je korišteno klasično pilot svrdlo promjera 1mm, koje se inače koristi za preparaciju ležišta fiksacijskog vijka autolognog intraoralnog koštanog grafta, pri 15 000rpm uz simultano hlađenje. Potom je učinjena analiza površina prethodno sagitalno otvorenih koštanih tunela skenirajućim elektronskim mikroskopom (SEM) (Field Emission Scanning Electron Microscope, JSM-7000F, Japan). *Rezultati.* Ablacijom koštanog tkiva Er:YAG laserom i obradom kosti klasičnim kirurškim svrdlom nastaju, u sagitalnoj simenziji, žlijebovi uglavnom sličnih dimenzija. Na učinjenim SEM snimkama, pri različitim povećanjima, osteotomije izvedena Er:YAG laserom imale su dobro definirane rubove i površinu koštanog tkiva slobodnu od zaostatnog sloja sa, za laser karakterističnim, hrapavim i

POSTER PRESENTATIONS

P1 ELECTRON MICROSCOPE ANALYSIS OF OSSEOUS TISSUE FOLLOWING OSTEOTOMY USING ER:YAG LASER AND SURGICAL REAMER

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Introduction. Intraoral augmentation techniques using osseous blocks are mostly performed using conventional instruments like reamers, saws and chisels. The main disadvantages of these instruments are mechanical pressure and vibrations that are transferred through the osseous tissue, limited geometry of the incision due to the instrument's shape, left over osseous debris in the surrounding tissue causing potential infection and risk of injuring the surrounding soft tissue. These are the reasons why high energy lasers have been introduced in the field of osseous surgery. The advantages of contact free infrared lasers in osteotomy are haemostatic and aseptic effect, absence of tissue stress along with precise and correct incision line. *Purpose.* The purpose of this research is to question the morphological properties and eventual thermal surface changes of the osseous tissue caused by the ablation of Er:YAG laser versus the use of conventional surgical osteotomy reamer. *Materials i methods.* Experimental study was performed on 30 osseous blocks taken from pig ribs. The size and the shape of the blocks was taken into account so they look similar to intraoral autologous osseous blocks often used in oral surgeons and dental implantology. Idea was to, during osteotomy, simulate tunnel like preparations needed for fixation screws. Er:YAG laser (AT Fidelis, Fotona, Slovenia) and surgical pilot bur (Screw System, Hager&MeisingerGmbH, Germany) are used to perform osteotomy. On every prepared plate, two osteotomies were done using two instruments in question. Tunnel preparations were made through the entire plate. Laser parameters were as follows: 0.9mm focus size in contact free mode (1000mJ, 20Hz), distance of the cooling towel from the surface was 10mm. Classis pilot bur with 1mm diameter is usually used to prepare the slot for fixation screw of autologous intraoral osseous graft rotating it on 15 000rpm with constant cooling. Surface analysis followed where the tunnels were sagitally opened and scanned using electron microscope (SEM) (Field Emission Scanning Electron Microscope, JSM – 7000F, Japan). *Results.* Ablation of the osseous tissue using Er:Yag laser and using conventional surgical reamer or bur produces, in sagital dimension, slots of the same dimension. SEM images of laser produced slots showed well defined preparation edges and osseous surface free of remaining debris and for laser characteristic coarse look with included fibrinous tissue and spherical formations of various sizes. Melting and carbonization on osseous tissue treated with laser were not observed.

isprekidanim izgledom, uz uklopljeno fibrinu slično tkivo i sferične formacije različite veličine. Promjene poput taljenja il i karbonizacije na koštanom tkivu ablatiranom laserom nisu nađene. Termički uzrokovane promjene kosti u toj skupini uzoraka također nisu nađene. U skupini uzoraka s osteotomijom izrađenom kirurškim svrdlom nađena je glatka površina u potpunosti prekrivena zaostatnim slojem, unutar kojeg su nađene mikropukotine. Rubovi osteotomije su bili nepravilnog, "čupavog" oblika. Termički uzrokovane promjene kosti u ovoj skupini uzoraka nisu nađene. *Zaključak i klinička implikacija.* Er:YAG laser, uz uvjet pravilno odabranih parametara rada, može se smatrati novim, potencijalno učinkovitim instrumentom u području koštane kirurgije i dentalne implantologije.

Thermal changes on the osseous tissue in the same sample group were not observed as well. Samples treated using conventional osteotomy showed smooth surface completely covered with residual debris and full of micro fractures. Osteotomy edges had coarse „fuzzy" shape. Thermal changes were not observed in this group. *Conclusion and clinical implication.* Er:YAG laser, when used properly, can be considered as a new, potentially effective instrument in the area of osseous surgery and dental implantology.

P2 UGRADNJA DENTALNOG IMPLANTATA IMEDIJATNO NAKON ENUKLEACIJE ODONTOGENE CISTE - PRIKAZ SLUČAJA

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Uvod. Odontogene ciste (OC) su najčešći uzrok destrukcije koštanog tkiva čeljusti. Ispravna i pravovremena diferencijalna dijagnoza odontogenih cista je esencijalna obzirom da neke od ovih lezija pokazuju agresivno ponašanje i veliki potencijal za recidiv nakon kirurške terapije. Klinička pogreška u dijagnostici je moguća jer su klinički izgled i radiološki nalaz za većinu od ovih cista analogni. *Svrha.* Svrha ovog prikaza je bila prikazati rekonstrukciju koštanog defekta nakon enukleacije radikularne ciste upotrebom tehnike koštano vođene regeneracije (GBR) uz imedijatno postavljanje dentalnih implantata. *Prikaz slučaja.* Prikazana je bolesnica u dobi od 50 godina kod koje je dijagnosticirana odontogena radikularna cista u području prvog gornjeg desnog pretkutnjaka te resorpcija korijena drugog gornjeg kutnjaka uzrokovana impaktiranim gornjim desnim umnjakom. Kirurška terapija je uključivala enukleaciju odontogene ciste, augmentaciju koštanog defekta primjenom tehnike koštano vođene regeneracije, uz upotrebu ksenogenog koštanog nadomjestka i kolagene resorptivne membrane. Istovremeno, imedijatno je u isto područje ugrađen dentalni implantat. Također je učinjena i alveotomija impaktiranog umnjaka te ugrađen još jedan dentalni implantat. Bolesnica je opskrbljena privremenim protetskim nadomjestkom za vrijeme trajanja oseointegracije. Tijekom šest mjeseci nakon ugradnje stabilnost implantata je evaluirana analizom rezonantne frekvencije (RFA). Srednja izmjerena vrijednost za implantate ugrađene u područje prvog pretkutnjaka i prvog kutnjaka bila je 74 i 78. Oba ugrađena implantata su praćena klinički i radiološki tijekom 6 mjeseci. Stabilnost implantata je evaluirana na prethodni način bila je zadovoljavajuća. Nikakve kliničke niti radiološke komplikacije nisu nađene tijekom praćenja. Implantati su opskrbljeni fiksnim protetskim radom. *Zaključak.* Pravovremena dijagnostika i ispravna kirurška terapija su esencijalne u polipragmazijskom liječenju. Imedijatna ugradnja dentalnih implantata nakon enukleacije odontogene ciste smanjuje broj potrebnih kirurških zahvata i skraćuje vrijeme potrebno do konačne protetske rehabilitacije.

P2 IMMEDIATE IMPLANTATION FOLLOWING ENUCLEATION OF ODONTOGENIC CYST – CASE REPORT

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Introduction. Odontogenic cysts (OC) are the most common cause of osseous tissue destruction. Correct and on time differential diagnosis of odontogenic cysts is essential due to the fact that some of these lesions show aggressive behaviour and recurrence potential after surgical therapy. Clinical mistakes are possible when diagnosing these cysts because clinical appearance and radiologic results are usually analogous. *Purpose.* The purpose of this case report is to show reconstruction of osseous defect after enucleation of radicular cyst using guided bone regeneration (GBR) technique with immediate implantation. *Case report.* 50 year old female patient was diagnosed with odontogenic radicular cyst in the first maxillary premolar area of the right side with root resorption of the second molar caused by the impacted wisdom tooth of the right side as well. Surgical therapy included enucleation of odontogenic cyst, augmentation of the osseous defect using GBR technique (xenogenic osseous graft and collagen resorptive membrane). Implantation of the dental implant followed the enuclation procedure. Alveotomy of the impacted tooth was done at the same time and additional dental implant was implanted. The patient was given temporary prosthetic restoration for the duration of osseointegration period. Six months after implantation, implant stability was tested using resonance frequency analysis (RFA). Mid values for two implants, premolar site and alveotomy site were 74 and 78 respectively. Both implants were monitored both clinically and radiologically during the six month period. Implant stability using RFA method was satisfactory. No clinical or radiologic complications occurred during this period. Implants were loaded with fixed prosthodontic work in the end. *Conclusion.* On time diagnostics and correct surgical procedure are essential in polypragmasial treatment. Immediate implantation after odontogenic cyst enucleation reduced the number of surgical procedures and shortens the rehabilitation period for fixed prosthodontics.

P3 ALERGIJA NA TITAN - MIT ILI STVARNOST?

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Uvod. Sveobuhvatna i rasprostranjena upotreba titanskih implantata u medicini i dentalnoj medicini eksponencijalno raste u prethodna tri desetljeća. Titanske legure se koriste za izradbu dentalnih implantata, endoproteza, pacemakera, stentova i ortodontskih bravica. Dobra nekorozivna svojstva visoki stupanj biokompatibilnosti su primarno posljedica imedijatno formiranog kisikovog biofilma na površini implantata. Bez obzira na to, sporadični slučajevi inkompatibilnosti na titan, koji zahtijevaju posebnu pažnju kliničara, opisani su u literaturi. Klinička manifestacija navedenog stanja uključuje urtikariju, egzem, edem, crvenilo i svrbež kože i sluznice te rijetko depresiju i neurološke poremećaje. Spomenuti simptomi se mogu uvrstiti u hiperosjetljivost tipa I i IV. Bolesnici s alergijama na metalne alergene se obično dijagnosticiraju pomoću epikutanog testiranja tzv. Patch testom, koji još uvijek nije standardiziran za titanske legure te se ne može smatrati u potpunosti klinički relevantnim. *Svrha.* Svrha ovog rada je bila evaluacija uspješnosti dviju različitih dijagnostičkih metoda u isključivanju ili potvrdi suspektne alergije na titan. *Materijali i metode.* Prikazana je bolesnica u dobi od 44 godine kod koje se javljaju subjektivne senzacije nakon ugradnje dva Astra Tech dentalna implantata u donju čeljust. Navedeni simptomi su se mogli povezati s postojanjem alergije na titan, ali nikakvi klinički znakovi niti simptomi relevantni za alergijsku etiologiju nisu nađeni. Na zahtjev bolesnice eksplantirali smo implantate, te učinili epikutano testiranje na sve metalne alergene i elektronsko-mikroskopsku evaluaciju (SEM) (Field Emission Scanning Electron Microscope, JSM-7000F, Jeol Ltd, Japan) površine eksplantiranih implantata. Temeljeno na SEM tehnologiji, učinjeno je i mapiranje kemijskih elemenata tkiva nađenog na površini eksplantiranih dentalnih implantata upotrebom Cameo software-a CAMEO Chemicals, CAMEO Software Suite, USA). *Rezultati.* Suspektna alergija na titan nije dokazana

P3 TITANIUM ALLERGY – MITH OR REALITY?

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Introduction. Omnipresent and widespread use of titanium implants in medicine and dental medicine has grown exponentially during last three decades. Titanium alloys are used to manufacture dental implants, endoprosthesis, pacemakers, stents and orthodontic brackets. Titanium does not corrode and has a high degree of biocompatibility due to the formation of oxygen biofilm on the implant surface. Never the less, sporadic cases of incompatibility to titanium are described in the literature and they require special attention. Clinical manifestations of such condition include rash, egzema, oedema, redness, itchiness of the skin and mucosa and rarely depression and neurologic problems. Aforementioned symptoms fall under hypersensitivity type I and IV. Patients with allergies on metal allergens are usually treated with epicutaneous test, so called Patch test. This test has not yet been standardized for titanium alloys and as such cannot be deemed as clinically relevant. *Purpose.* Purpose of this report was to evaluate the successfulness of two different diagnostic methods on exclusion or confirmation of suspected titanium allergy. *Materials and methods.* 44 year old patient had subjective sensations after implantation of two Astra Tech dental implants in the lower jaw. The symptoms could possibly be connected to titanium allergy, but no other clinical signs or symptoms relevant for allergy could be found. On patient's request, we took out the implants and did epicutaneous tests on all metal allergens together with electron microscope evaluation (SEM) (Field Emission Scanning Electron Microscope, JSM-7000F, Jeol Ltd, Japan) of the extracted implant surface. Based on SEM technology, we did chemical element mapping of the tissue found on the surface of the extracted implants using Cameo software (CAMEO Chemicals, CAMEO Software Suite, USA). *Results.* Suspected titanium allergy was not found using any of the two diagnostic methods. Epicutaneous tests on all metal allergens were

niti jednom od dvije ispitivane dijagnostičke metode. Epikutani testovi na sve metalne alergene su bili negativni. Skenirajuća elektronska mikroskopija, pri različitim povećanjima, dokazala je da nije bilo nikakvih nepravilnosti na površini implantata koji su eventualno mogli prouzrokovati navedene senzacije. Kemijska analiza tkiva nađenog na površini eksplantiranih implantata je pokazala normalnu strukturu koštanog tkiva između pojedinih navoja implantata, što odgovara neometanom i završenom procesu oseointegracije, te ponešto organskog materijala, što odgovara morfološki i kemijski, na izrazito velikom povećanju, stanicama osteoblasta. Dobiveni rezultati potvrđuju urednu oseointegraciju ugrađenog implantata i nedostatak iritirajućih faktora relevantnih za alergijsku etiologiju. *Zaključak.* Epikutano testiranje i suvremene metode mapiranja kemijskih elemenata baziranih na SEM tehnologiji su učinkovite i značajne metode u dijagnostičkom stupu prilikom isključivanja ili potvrde suspektne alergije na titan.

negative. SEM showed on different magnifications that there were no irregularities on the implant surface that could possibly induce aforementioned sensations. Chemical analysis of the tissue found on the surface of the extracted implants showed normal osseous structure in between individual implant threads. This indicates normal and interrupted process of osseointegration. Organic material found coincides morphologically and chemically to osteoblast cells. Given results confirm proper osseointegration of the implant and nonexistence of irritating factors relevant for allergic etiology. *Conclusion.* Epicutaneous tests and modern chemical element mapping methods based on SEM technology are effective and significant methods in diagnostic procedure of exclusion or confirmation of titanium allergy.