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Invited lectures

ART OF RHINOPLASTY

Siniša Glumičić

Glumičić Medical Group

Surgical correction of the nose is one of the most demanding and challenging operations in the field of facial plastic surgery.

During 30 years of work and with over 7 thousand performed septorhinoplasty procedures, the author will present in detail his approach to this problem, anatomical analysis, surgical technique, as well as numerous pre- and post-operative results.

Considering that the nose with its specific anatomical architectonics occupies a central place on the human face, and very often represents the most important structure when defining the appearance of the face, surgical correction of the nose, in addition to the functional aspect, demands from the surgeon an exceptional sense of aesthetics and tissue balance, while at the same time taking into account the patient's wishes and fitting the structure of the nose into the overall appearance of the face.

DERMAL FILLERS IN AESTHETIC LIPS TREATMENTS

Željko Rotim

Owner of the "Rotim Medical Center", assistant professor at the Faculty of Medicine in Rijeka

Beautiful lips are one of the most visible features of woman's face. Lip treatments make up more than 50% of all facial injection procedures. Beautiful lips give a woman's face an im-

age of attractiveness which radiates beauty, youth and gives fullness and completeness to the face. Lips play an important role as an emotional attribute, because small movements of the lips can show many emotions on the face, such as happiness, sadness, fear, contempt, surprise, disgust. Lips also have a role as a sexual attribute because have a large number of nerve endings. They give the face an erotic and passionate look. There is an increasing demand for aesthetic lip treatments, especially among millennials (18-35 years old). The rise in popularity of lip injections is due to the influence of social media and desires for an attractive appearance. Millennials want beautiful lip definition and volume, but they want it to look natural. There are dual expectations from aesthetic lip treatments in women. Some women want soft volume and some want full volume of their lips. The lecture gives two possible options for aesthetic correction of the lips. The first option shows how to get subtly contoured, defined and refreshed lips. Second options show how to get voluminous, plump, bouncy and pouted lips. Both options are often requested by patients and aesthetically very acceptable. Injectors must know the anatomy of the lips in detail, understand facial assessment, must use safe techniques and superior products in order to achieve superior results. The lecture also describes the most important anatomical formations in the context of complications such as hematomas, asymmetries, swellings, nodules and vascular occlusions.

AESTHETIC ASPECTS OF ORTHOGNATHIC SURGERY

Nataša Ihan Hren

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Attractive faces tend to be rated higher, which can influence our psychosocial wellbeing.

Contemporary orthognathic surgery has become more involved in aesthetic parameters, but achieving a good occlusion is the basic functional condition of these surgical procedures. It is known that symmetry and averageness play an important role in determining attractiveness of a face. Traditional Hellenistic -renaissance parameters of facial beauty have been overcome not only by ethnically conditioned averageness but also global changes of aesthetic standards.

Traditional orthognathic procedures as LeFort I osteotomy and bilateral sagittal split osteotomy of mandible (BSSO) are basic procedures for occlusal functional reconstruction. Preoperative orthodontics should consider the decompensation of teeth beside the transversal discrepancies for ideal surgical correction. The planning of BSSO and LeFort I osteotomies are not only thinking about the stability and soft tissue reactions on bone movement, but also about the facial harmony in view of facial proportions. The vertical dimensions in anterior face should consider smile aesthetics and the vertical dimensions in posterior maxilla are mainly connected by facial shape and vertical dimensions in general. The surgical handling of soft tissues also influences lip vermilion aesthetics. Occlusal plane determination should consider not only postoperative stability but also gonial angle changes. Maxilla repositioning can change aesthetics of the nose with minor procedures. Planning nose changes with or without rhinoplasty is necessary in all maxillary orthognathic surgical changes. Mandibular repositioning is the final correction of the lower facial third's vertical dimensions and it determines the final facial profile correction. In the planning of repositioning, the genioplasty reduction or augmentation of prominence, deviation changes and vertical repositioning are necessary. Malar prominences can be a problem in dentofacial deformities as skeletal Class III and asymmetries and they need augmentation. Pronounced facial soft tissue discrepancies can be corrected by lipofilling and botulinum toxin applications.

FACIAL AESTHETICS IN PATIENTS WITH CONGENITAL ANOMALIES BEFORE AND AFTER ORTHODONTIC SURGICAL THERAPY

Marija Magdalenčić-Mestrovic

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The most common dentofacial anomalies that require orthodontic – orthognathic surgery treatment are dentofacial deformities such as orofacial cleft, maxillary anteroposterior excess or deficiency, mandibular anteroposterior excess or deficiency, anterior open bite malocclusion and dentofacial asymmetry. They are easily recognizable due to the aesthetic component that can significantly affect the psychological well-being of a person, which is especially important in adolescence, determining social contacts of the individual. In the past ten years an increasing number of patients have elected to undergo orthodontic-surgical treatment to correct severe malocclusion not responsive solely to orthodontic therapy. After the clinical evaluation, analysis of diagnostic records, treatment planning and cephalometric analysis the orthodontist makes a diagnosis which determines the beginning of the treatment, the type of orthodontic appliances, and possible preoperative orthodontic treatment as a preparation for orthognathic surgery.

If surgery is indicated, treatment begins immediately before the completion of growth and development using fixed orthodontic appliances. When optimal intermaxillary relationship is achieved, the patient is sent to the surgeon who surgically repositions the jaw or jaws into their most favorable relationship to establish a stable occlusion and balanced facial aesthetics. After surgery, postoperative orthodontic treatment continues to achieve optimal occlusal relationship and a harmonious facial appearance.

If necessary, after completed orthodontic - surgical rehabilitation and removal of fixed orthodontic appliances, the patient is referred to prosthetic rehabilitation or aesthetic teeth correction.

This presentation shows four case reports with different congenital dentofacial anomalies where interdisciplinary cooperation between the orthodontist and the maxillofacial surgeon is essential, with emphasis on function and aesthetics, to achieve the best results to the patient's satisfaction.

Surgery in all presented cases was performed at the Department of Oral and Maxillofacial Surgery, University Hospital Dubrava, Zagreb.

FULL FACE APPROACH IN DERMAL FILLERS TREATMENT

Tomica Bagatin, Dinko Bagatin

Poliklinika Bagatin

Introduction: Dermal filler treatments are one of the most common nonsurgical treatments of the face and they are in constant rise. Consultation and treatment plan are key of success in every dermal filler treatment.

Material and methods: In this lecture authors will show contemporary techniques in facial analysis with face in rest and in animation. Positive and negative emotions can help in analysis of the face and more successful treatment of the face. Authors will show which fillers they use and for what reason. We will show different techniques in treatment depending on different problems and regions treated. Authors will show why sometimes will be

used needle and canula and in which layer product will be injected. Every injector needs to be familiar with anatomy of the face. First treatment will be in middle face – cheek bone et preartoid region after which we will continue with lower face - chin and lower jaw after which treatment of periorbital and perioral region will be injected.

Results: Patients treated in this way will have more consistent result with less downtime.

Conclusion: Facial analysis and treatment plan is the first step after which treatment starts with lifting points which give foundation to the face, later contouring most critical regions will ensure good result in our patients.

Keywords: dermal fillers, facial shaping, facial analysis

USE OF ANTIBIOTICS IN ORAL SURGERY

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The discovery of antibiotics is still considered one of the greatest discoveries in medicine, which changed not only course of numerous infectious diseases but also improved all areas of medicine as well as dental medicine. We witness their importance and benefit every day. However, nowadays there is more and more talk about the resistance of bacteria to antibiotics, which has reached alarming proportions. This is supported by the fact that the World Health Organization has included the fight against resistance in its priorities, and that the Council of Europe has adopted a resolution that aims to control the development and spread of resistance to antibiotics. Precisely for these reasons, it is very important to recognize which conditions require antibiotic therapy and which do not. Also, knowing the most common causes of inflammation of the orofacial area, as well as the clinical signs of this inflammation, we can choose the most suitable antibiotic in the appropriate dose and duration of therapy, and in this way, on the one hand, treat the inflammation, while on the other hand we can prevent the development of resistance. We must be aware of the fact that the resistance of bacteria to antibiotics does not result from the antibiotics themselves, but from their excessive and unjustified use as well as inadequate choice, dose and duration of antibiotic therapy.

BENEFITS OF FAT AND STROMAL VASCULAR FRACTION FOR FACE REJUVENATION

Vladena Averina

Founder and Head of polyclinic for Dermatology, Dermatoneurology, Gynecology, Aesthetic medicine "Averina clinic"

Trend of nowadays is positive pro-aging. Natural and fresh look attracts more than artificial beauty. It's not necessary to look younger but to feel younger and healthier.

Which procedures give us so desirable result?

Autologous filler and rejuvenator is our fat. Hypodermis contains not only adipocytes but also macrophages, fibroblasts, lymphocytes, mesenchymal stem cells. Which means that with lipofilling we work either with quantity or with quality.

No one HA filler will give us such a natural volume and glowing skin in one procedure with stable result.

This lecture will highlight some scientific data and practical information about face fat grafting.

GRAFTING PROCEDURES IN IMPLANT DENTISTRY: AUTOGRAFTS, ALTERNATIVES AND CREATIVE INNOVATIONS

Daniel Rothamel

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One of the most challenging procedures in implantology is the predictable and safe regeneration of lateral and vertical larger bone defects. Besides autogenous bone as the golden standard for jaw augmentation procedures, different biomaterials such as bone substitutes and membranes have shown predictable results. Hereby, quality of the recipient site, the osteogenic potential of the graft, graft immobilization and transmembrane angiogenesis of the barrier and the selected healing time are affecting the predictability of the regeneration outcome.

In contrast to the patient's own bone, the use of biomaterials is not accompanied by donor site morbidity, leading to high patient acceptance. On the other hand, the use of bone substitutes is accompanied by the risk of volume loss, soft tissue ingrowth and incomplete graft regeneration. Bovine bone substitutes have shown excellent volume maintenance and osseointegrative support of bone formation. The use of pericardium-based collagen membranes allows for long barrier function but still maintaining advantages of the native collagen structure such as biocompatibility, tissue integration, nutrition transfer and graft stabilization. Newer techniques are focussing particularly on graft immobilization and ease of clinical application. They might be interesting additional tools to fulfil the increasing expectations of the modern patient.

MAXILLOFACIAL SURGEONS IN IMPLANT THERAPY

Robert Cerović

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Implantology is the branch of dentistry that replaces missing teeth with dental implants. The surgical phase consists of the placement of dental implants into the alveolar bone. In everyday dental surgery, there are mostly less extensive operations in the area of the alveolar ridge. Implants have certain dimensions and for their placement is required a sufficient bone volume. Due to atrophy, pathological process and/or trauma, the volume loss of the alveolar ridge can be regenerated with minor surgical interventions. When the bone deficit is large, implant placement without a more extensive surgical intervention is not possible, and the role of maxillofacial surgeons in implant therapy becomes unquestionable.

NON-DEMINERALIZED AND PARTIALLY DEMINERALIZED DENTIN AUTOGRAFT

Snježana Polh

Polyclinics Ridet, Croatia

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Autogenous particulate dentin has gained attention as an alternative grafting material to autologous bone and bone substitutes. Despite dentin being acellular matrix, bone and dentin are very similar in their biochemical structure. They comprise mainly type I collagen with growth factors like bone morphogenetic protein (BMP-2) and fibroblast growth factors. Non-demineralized and partially demineralized dentin autograft is a suitable grafting material for socket preservation, sinus lift grafting, and horizontal and vertical ridge augmentation.

Post-extraction sockets with dentin autograft grafting do not require a primary wound closure and membranes. Prevention of particle exfoliation by covering the autogenous dentin graft with platelet-rich fibrin membranes, collagen sponge, or occlusive provisional restoration is sufficient. The average horizontal ridge reduction four months after socket grafting with dentin autograft one millimeter below the ridge crest amounts to 1,38 mm. Presented clinical cases and histological findings after ridge preservation with autologous dentin align with insights from clinical studies, revealing new bone formation, good wound healing, and good dimensional stability.

Ideal grafting material is biocompatible, biodegradable, easy to handle, cost-effective, minimizes inflammation and foreign body reaction, does not transmit diseases and assures long-term restoration and preservation of the alveolar ridge. Dentin autograft fulfills all of these requirements. It is the only autogenous material that does not require an additional donor site. Consequently, postoperative morbidity is minimal.

Oral presentations

TREATMENT OF VASCULAR LESIONS IN HEAD AND NECK REGION

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Vascular lesions have a variety of clinical presentations and are most often located in the head and neck area. Most of them are congenital, with benign characteristics and located in the area of soft tissues, although some may occur later in life and may also have malignant characteristics. Vascular lesions in the head and neck area have important clinical implications with regard to the anatomical localization and involvement of vital structures in terms of swallowing difficulties, pressure on the respiratory tract and impact on other organ systems. In 2018, the International Society for the Study of Vascular Anomalies (ISSVA) presented the classification of vascular lesions that are used today. In clinical work at the Department of Maxillofacial and Oral Surgery of UH Osijek, patients with vascular lesions from infancy to mature adulthood are presented. After adequate diagnostic processing, an individual treatment modality is determined for each patient, which includes a wide spectrum of therapy, from conservative treatment (propranolol, corticosteroids), embolization of vascular lesions to extensive surgical resection. With this lecture, we would like to point out the clinical practice of our institution.

Keywords: vascular malformations, vascular tumors, embolisations, propranolol

CHALLENGES IN THE DIAGNOSIS OF MANDIBLE METASTASIS: A CASE REPORT

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Introduction: Metastatic tumors of the oral cavity are rare and account for only 1% of oral tumors. They are more often presented in the jaw bones than in the oral mucosa, and represent a diagnostic problem due to the variable clinical picture.

Case report: A 61-year-old female patient comes to the Clinic for Maxillofacial Surgery due to pain in the area of the left temporomandibular joint that spreads to the upper and lower jaw, a feeling of changed occlusion of the distal jaw and difficulty in chewing. An extraoral examination revealed pain in the preauricular area on the left side, deviation of the mandible to the left when opening the mouth, and pain in the left masticatory muscles. Panoramic images revealed impacted tooth 38, and an alveotomy was performed. Due to persistent complaints, she was referred for further tests, and MR imaging confirmed the protrusion of the disc forward, with degenerative signs on the left side. Indicated arthrocentesis resulted in clinical improvement lasting 1.6 years. Due to persistent complaints, a new panoramic and CT scan was taken, which indicated a non-specific formation of the left angulus of the mandible, so a bone biopsy was indicated on two occasions. IgG4 mono-clonality, other rheumatological and hematological diseases, as well as tumor, were excluded. Due to the unclear diagnosis, a PET/CT scan was taken which showed accumulation of radiopharmaceuticals in the left and right upper lobes of the lungs, affected regional lymph nodes and accumulation inside the mandible. Scintigraphy of somatostatin receptors confirmed the presence of distant metastases in the area of the mandible. A wedge resection of the lung formation was performed, which was defined as large cell neuroendocrine carcinoma by pathohistological analysis. After the diagnostic treatment, chemotherapy was applied. The patient died 5 months after the cancer diagnosis, and 6 years after the first symptoms appeared.

Keywords: lung cancer, metastases, mandible, neuroendocrine tumors

SURGICAL RESECTION OF MAXILLARY AMELOBLASTOMA WITH RADIAL FOREARM FREE FLAP RECONSTRUCTION – A CASE REPORT

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Introduction: Ameloblastoma is a benign, epithelial odontogenic tumor of ectodermal origin. Although it only accounts for 1% of the tumors of the jaw, it is the most frequent odontogenic tumor. More than 80% of ameloblastoma affect the mandible, predominantly the mandible angulus. Despite its affiliation with benign tumors, it is locally invasive with a tendency of destroying surrounding tissues, recurrence and malignant transformation. It usually occurs between 30 and 50 years of age and affects both sexes equally. There are several types of ameloblastoma, divided into: conventional, unicystic, peripheral and metastatic. The clinical picture of ameloblastoma is not specific and there are no pathognomonic signs. The most common presence is painless, slow-growing swelling, and the disease is often discovered as a random finding during routine radiological examination. Ameloblastoma therapy is primarily surgical, and there are two approaches: conservative and radical. Radical resection with a wide surgical margin is considered a method of choice with low recurrence rate. The conservative approach includes enucleation and curettage with the aim of minimal invasiveness and preservation of adjacent structures. The case of surgical resection of maxillary ameloblastoma and reconstruction of the defect with radial forearm free flap will be presented.

Case report: A patient aged 62 years comes to the Department of Otorhinolaryngology and Maxillofacial Surgery of the Clinical Hospital Centre Zagreb for the planned surgery of the remnants of maxillary ameloblastoma resected 8 months ago. The post-operative CT showed the remnant in dorsal part of the alveolar process and maxillary tuberosity, and anteriorly along the edge of the surgical field. The surgical field is accessed by elevating upper cheek flap with Weber-Ferguson incision and tumor resection by partial maxillectomy is performed. The defect in the maxilla is immediately reconstructed by radial forearm free flap.

Conclusion: It is concluded that radical resection with adequate healthy margin is a gold-standard in the treatment of ameloblastoma. The radial forearm free flap is considered aesthetic and functionally ideal tissue in the reconstruction of intraoral defects.

Keywords: ameloblastoma, resection, free tissue flap, reconstructive surgical procedures

USE OF MSAP FLAP IN RECONSTRUCTION OF HEAD AND NECK DEFECTS

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Flaps based on the medial sural artery have been used as locoregional flaps in reconstructions of lower leg defects since the 1970s. Although Tylor and Daniel described a perforator flap based on the gastrocnemius musculocutaneous perforator, more than twenty years had to pass before its wider clinical application. In 2001, Hallock was the first who published a detailed anatomical study on amputated lower legs with descriptions of musculocutaneous perforators of the medial sural artery, while in the same year Cavadas was the first who published a series of patients and was the first who named it the perforator flap of the medial sural artery (MSAP), which is why most authors consider him its originator. According to the quality of the tissue, the possibilities of lifting and the morbidity of the donor side, most of the literature classifies it alongside the forearm flap. With this lecture, we would like to draw attention to the MSAP flap as a useful alternative to other more commonly used flaps and show our experiences in using it.

Keywords: MSAP, perforator flap, head and neck reconstruction

PALPEBRAL AVULSION – A CASE REPORT OF PALPEBRAL RECONSTRUCTION

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Introduction: Traffic accidents often cause soft tissue injuries in facial region. Due to the increasing speeds achieved by modern vehicles and the lack of use of protective equipment, injuries resulting from traffic accidents have become a significant medical problem. In addition to large-scale laceration wounds, we often encounter avulsions of the skin and subcutaneous tissues. Rehabilitation and primary treatment of such injuries is done inadequately in some cases, mainly because priority is given to vitally threatening comorbidities caused by a traffic accident.

Case report: We present a case of secondary reconstruction of the upper eyelid and scars in the frontal region in a 19-year-old female patient who participated in a traffic accident. After the injury itself, the avulsion of the upper eyelid was sutured with primary sutures, which ultimately caused the ectropion of the eyelid. The reconstruction was made by cutting out the scar on the skin of the eyelid, freeing the orbicularis muscle from the scar tissue; a full-thickness skin graft (Wolfe technique) taken from the ipsilateral retroauricular region was placed at the defect site. After placing the graft, the eyelids were fixed with sutures to ensure the connection of the graft to the base.

Conclusion: Scar caused ectropion of the upper eyelid can be successfully corrected with a skin graft if proper preparation of the graft and the receiving region and complete removal of the scar tissue is done.

Keywords: facial injuries, scar caused ectropion, skin graft, Wolfe technique.

DOG BITES - RECONSTRUCTION OF THE SUPRAORBITAL REGION OF THE FACE, CASE REPORT

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Bite wounds are one of the most common wounds occurring in humans. The most common bite victims are children, especially those under six years of age. The most average are dog bites, followed by other bites by animals and humans. The highest percentage of bite injuries are those in the head and neck region, which are being treated by maxillofacial and oral surgeons in emergency services, and later by plastic and reconstructive surgeons, naturally depending on the size of the defect itself. Most bite wounds occurring in the face region, due to good blood supply, are treated with primary sutures. In the case of larger defects, there is a more complex reconstruction and plastics required, while respecting the aesthetic units. This paper presents a case of plastic surgery and the reconstruction of a larger defect in the supraorbital region of the face.

Keywords: bite wound, reconstruction, face

USE OF 'OPEN-SOURCE' COMPUTER PROGRAM FOR 3D VIRTUAL PLANNING IN OPERATIVE HEAD AND NECK RECONSTRUCTIONS

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With advances in computer and imaging technology, clinicians are increasingly turning to a personalized approach to treating patients. Three-dimensional (3D) virtual planning comes as a logical evolution in the personalized treatment approach. Although there are already approved and licensed programs for 3D virtual planning, their main limitation is the high cost, which limits their availability to most clinicians. Alternative methods using free "open-source" computer programs are readily available, but sometimes require knowledge of advanced 3D, computer-aided design (CAD) concepts. The aim of this lecture is to familiarize colleagues with our experience in using an "open-source" computer program and a developed plug-in for a computer program used in 3D virtual planning and production of personalized surgical material.

Key words: 3D planning, personalized medicine, mandibular reconstruction

LEGAL AND MEDICAL ASPECTS IN AESTHETIC SURGERY OF THE HEAD AND NECK

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Medical malpractice lawsuits against doctors have been continuously on the rise. Some of these lawsuits refer to the results of aesthetic head and neck surgery, mostly performed in private practices. In such cases the problem sometimes lies in a clear delineation of complications and possible errors, as well as in an insufficient medical documentation. The importance of proper medical documentation cannot be emphasized enough, both regarding an informed consent for the intended procedure as well as pre-operative and post-operative findings, which should always contain photographs in addition to the textual part. In aesthetic surgery of the head and neck the result of the procedure is often a subjective perception, and therefore it is very important, especially in private practice where the patient pays for the procedure, to eliminate possible ambiguities regarding the procedure and its results as much as possible before the procedure performance. Given that aesthetic surgery of the head and neck is performed by other medical professionals besides maxillofacial surgeons, there is also a kind of market competition wherein the rules of fair play do not always prevail. In the case of a lawsuit over the result of aesthetic procedures in the head and neck area, the dispute may end in a settlement or litigation in which the opinion of a medical expert witness appointed by the court is always sought. The examples from medical and legal practice will be presented, with an emphasis on aesthetic surgery of the head and neck. In addition to the medical aspect, the economic aspect is increasingly coming into the foreground. However, we will have to even more take account of the legal aspect of our work in the future.

Keywords: legal, medical, aesthetic, surgery, head, neck

HEALTH RELATED QUALITY OF LIFE IN PATIENTS AFTER SURGICALLY TREATED MIDFACE FRACTURE: A COMPARISON WITH THE CROATIAN POPULATION NORM

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Background: Assessment of health-related quality of life in a group of male patients surgically treated for midface fractures.

Materials and methods: SF-36 (Short Form 36) is a simple and well-known general health questionnaire consisting of 36 questions. The subjects were 42 male patients who were surgically treated for a midface fracture. In this cohort retrospective study, the results of this questionnaire were compared between the respondents and the reference population, i.e. the Croatian population norm adjusted for gender, age and region.

Results: The results of this study showed that the health-related quality of life in patients with surgically treated midface fractures was comparable to the Croatian population norm adjusted for age, gender and regional demographics. However, the study also showed a significant decrease in the results of the "Emotional well-being" component of the questionnaire in younger patients ($P = 0.03$) and a severely affected domain of "Physical functioning" in older patients ($P = 0.049$).

Conclusion: This study showed that in the group of younger patients there is a significant unrecognized negative psychological impact after suffering facial trauma. On the contrary, the older age group of patients is more prone to physical complaints. Control examinations of such patients represent an opportunity to screen for such difficulties and to possibly refer patients to appropriate therapy at an early stage.

Keywords: quality of life, upper jaw fracture, zygomatic bone fracture, surgery

PREVALENCE OF OBSTRUCTIVE SLEEP APNEA IN MALE PATIENTS WITH SURGICALLY TREATED MAXILLARY AND ZYGOMATIC FRACTURES

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Background: Fractures of the midface that required surgical treatment in terms of rigid fixation by osteosynthesis may be the cause of the changed structure and function of the midface. The aforementioned structural and functional changes in the midface can cause airway obstruction and consequently breathing disorders during sleep. The aim of the present study was to determine the prevalence of undiagnosed obstructive sleep apnea (OSA) among patients with surgically treated maxillary and zygomatic fractures. Also, we wanted to determine whether clinical data and the results of different questionnaires can be used to identify those at increased risk for OSA in this specific population.

Material and Methods: The medical data of 44 male patients over the age of 18 who were surgically treated for fractures of the upper jaw or zygomatic bone in a defined time period were retrospectively analyzed. During the study, all subjects were subjected to all-night polygraphy and, were asked to complete the STOP questionnaire (snoring, tiredness, obstructive apnea and high blood pressure), the NOSE questionnaire (Nasal Obstruction Symptom Evaluation) and the Epworth Sleepiness Scale.

Results: 27 subjects (61%) had a fracture of the upper jaw and 17 subjects (39%) had a fracture of the zygomatic bone. Obstructive sleep apnea was diagnosed in 24 (54%) of 44 subjects, of whom 15 (62%) had a fracture of the upper jaw and 9 (38%) had a fracture of the zygomatic bone. Subjects with OSA had a mean Apnea Hypopnea Index (AHI) of 15.5 compared to those without OSA who had a mean AHI of 2.4. 30 subjects had nasal obstruction and 18 out of 30 (60%) had an AHI of 5 or more.

Conclusion: The results of this study indicate that the frequency of OSA was higher in surgically treated patients with midface fractures than in the general population, regardless of the type of fracture. The results of the NOSE questionnaire indicate a significant correlation with the existence of OSA in this specific group of patients, so it is recommended in everyday practice.

Keywords: obstructive sleep apnea, upper jaw fracture, zygomatic bone fracture, surgery

BIOMECHANICAL ANALYSIS OF THE NEW SCREW AND LOCKING SYSTEM IN THE TREATMENT OF UNFAVOURABLE MANDIBLE ANGLE FRACTURES WITH FINITE ELEMENT ANALYSIS

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Introduction: Mandible angle fractures make up about a third of all fractures in the lower jaw. Considering the direction of the fractured line, the force vector of the chewing musculature and the consequent dislocation of fractured fragments, fractures of the angle are divided into favorable and unfavorable ones. The aim of this study was to compare the biomechanical characteristics and stability of the conventional screw and locking plate system and the new locking screw in the treatment of unfavorable fractures.

Materials and methods: Calculations and comparison of the control and new locking system was made in the Abaqus 6-14-5 software package with previously designed screw, plate and mandible models in SolidWorks (Dassault Systemes, France). The systems were compared in conditions of static and dynamic load with measurement of displacement, axial load and rigidity. Forces of 700 N were used on the molar and 400 N to the incisor region.

Results: In static load conditions, the control (conventional) locking system shows a smaller screw displacement and less axial load, while in cyclic load conditions, the new, tested locking system shows greater rigidity at different angles of screw placement.

Conclusion: In cyclical load conditions, the new locking system, with the implementation of a new, patented screw, shows an advantage in the treatment of mandible angle fractures over a conventional locking system. Cyclical loads in the chewing system represent a more realistic picture of everyday cyclical loads. The advantage of the new screw over the conventional one is the stronger rigidity of the screw at different angles of placement.

Keywords: unfavorable fractures, new locking system, biomechanical analysis

NON-AESTHETIC INDICATIONS FOR BOTULINUM TOXIN APPLICATION IN HEAD AND NECK REGION

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Introduction: In the era of ubiquity of injectable products for aesthetic corrections in the facial area, botulinum toxin plays one of the leading roles. It is a reliable muscle relaxant with prolonged but reversible effect. It also acts peripherally and centrally on nociception, as well as exocrine glands function. Consequently, botulinum toxin is being increasingly used in a number of non-aesthetic indications, most often TMD, pain, dystonia, blepharospasm, hemifacial spasm, sialorrhea and Frey's syndrome.

Materials and methods: We will present the most common non-aesthetic indications for botulinum toxin application and analysis of our series of patients treated with botulinum toxin in the period of 4.5 years consisting of more than 60 patients with temporomandibular disorder, 3 patients with blepharospasm/hemifacial spasm and 3 patients with dystonia. For all patients with TMD, clinical evaluation including parameters of the masticatory apparatus function (maximal interincisal opening, jaw deviation, clicking) and pain intensity based on the VA scale were recorded. First application of the drug was standardized to 80 IU (25 IU in the masseters and 15 IU in the temporal muscles). The assessment was repeated after 2-3 weeks and then after 3 months.

Results: Indications for therapeutic application of botulinum toxin in the head and neck area will be presented. For our cohort of patients, treatment results including indications, locations and doses of botulinum toxin application will be presented.

Conclusion: Botulinum toxin provides a wide range of therapeutic options in the head and neck area. In our practice, it has proven to be one of the key therapeutic modalities for treatment of myofascial pain in temporomandibular dysfunction. It is also a reliable choice for dystonia and blepharospasm treatment. More extensive research is needed to determine more standardized patient selection and treatment algorithms.

Keywords: botulinum toxin, temporomandibular disorder, pain, dystonia, blepharospasm

FROM MAXILLOFACIAL TRAUMA TO FACIAL FUNCTION AND AESTHETICS THROUGH VARIOUS SPECIALISTS PROCEDURES

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Introduction: The incidence of maxillofacial trauma varies depending on a specific geographic area, gender, age, and the etiology is multifactorial. During a direct blunt-hard impact with a stronger force, injuries to hard tissues and the formation of lacerocutaneous wounds occur. Often, treatment of such injuries involves various therapeutic procedures of different dental specialists for the purpose of restoring function and aesthetic reconstruction.

Case report: After losing consciousness and falling, with a diagnosis of superficial head injury, pain in the mental region, abrasions and a lacerocutaneous wound of the lower lip were diagnosed. A diagnosis of complicated fracture of the crown of tooth 12 and subluxation of tooth 11 was made. Radiologically, a fracture line was established in the area of the alveolar ridge of the maxilla in the region 11-13, with mild mobility of the region clinically present. After the one-visit endodontic treatment of tooth 12, an immobilization wire-composite splint (13 – 22) was placed. Due to the pain and mobility, after 14 days a one-visit endodontic treatment was performed on tooth 11. One month after the injury, the immobilization splint was removed. Orthodontic therapy was performed in order to prepare tooth 12 for post-endodontic prosthetic restoration.

One month after the injury, the soft tissues have completely regenerated. Three months after the injury, no mobility of the region 11-13 or the fracture line of the alveolar ridge was clinically detected. The result of orthodontic therapy is a sufficient dental structure for adequate prosthetic therapy.

Conclusion: Tooth injury (luxation, fracture) is a frequent finding in dentoalveolar fractures caused by impact. The application of multidisciplinary diagnostic and therapeutic procedures for the purpose of patient rehabilitation enables the restoration of function and aesthetics of traumatized structures and tissues.

Keywords: dentoalveolar trauma, tooth crown fracture, tooth subluxation, alveolar crest fracture

MYSTERIOUS CAUSE OF TRACHEAL DAMAGE IN PATIENTS WITH COVID-19 ON MECHANICAL VENTILATION

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Introduction: Tracheomegaly (TM) is a very rare and often unrecognized phenomenon defined radiologically as an abnormal enlargement of the diameter of the trachea exceeding 21 mm in women and 25 mm in men. In most cases it is congenital, while possible causes of acquired TM include diseases of the connective tissue (Mounier-Kuhn and Ehlers-Danlos syndrome), various inflammatory conditions (chronic bronchitis, pulmonary and cystic fibrosis), smoking, and prolonged mechanical ventilation with increased cuff pressure. There are few papers in the literature addressing TM, mainly case reports and some case series.

Materials and methods: We retrospectively analyzed chest x-rays of all patients who were mechanically ventilated from April 1, 2020, to January 31, 2021. The occurrence of TM was determined by measuring the diameter of the trachea before intubation and by continuously measuring the diameter of the trachea in the cuff area after intubation, from which we calculated the cuff-to-trachea diameter ratio (C/T ratio).

Results: The study included 1015 patients divided into three groups: 383 patients treated in the intensive care unit with mechanical ventilation, 132 patients treated with high-flow oxygen ventilation, and 500 randomly selected patients treated with nasal catheter oxygen therapy. Among the patients studied, we observed radiologically visible TM in the cuff area in 18.54% of patients, whereas the percentage of TM in patients with prolonged MV was 90.6%. A C/T ratio >1.5 was observed in 12.53% of patients. Respiratory complications, a total of 16.71% of them (pneumomediastinum, pneumothorax, tracheoesophageal fistula, subcutaneous emphysema, tracheomalacia) showed a significant association with C/T ratio. Using ROC analysis, C/T ratio is considered a reliable potential prognostic factor for respiratory complications.

Conclusion: The results of our study demonstrate the importance of early detection and prevention of TM in MV patients with COVID-19 by chest X-ray and measurement of C/T ratio and promote understanding of the development of this rare phenomenon.

Keywords: tracheomegaly, COVID-19, mechanical ventilation, tracheostomy

GRISSEL'S SYNDROME AND COVID INFECTION IN CHILDREN: REPORT OF TWO CASES

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Introduction: Grisel syndrome is a rare condition of rotator subluxation of the atlantoaxial joint that is not associated with trauma or bone lesion. It is characterized by acute and painful torticollis with fever, which is a consequence of complicated pharyngitis and tonsillitis.

Materials and methods: We present two girls, aged 5 and 6 years, who developed atlantoaxial subluxation and torticollis during or after infection with COVID. As part of this, a pararetrapharyngeal abscess developed. Based on clinical signs, radiological findings, and the course of the disease, Grisel's syndrome was confirmed. One patient had an asymptomatic COVID infection, before the development of Grisel's syndrome, and the other patient had an active COVID infection, during which Grisel's syndrome developed.

Results: Both patients were treated multidisciplinary: conservatively with antibiotics and surgically, and then physical therapy was introduced along with the Philadelphia orthosis. Both were in constant clinical improvement and did not develop further complications. According to the literature, the Fielding-Hawkins classification describes 4 degrees of this subluxation, and our patients had type 3 at the time of diagnosis.

Conclusion: Grisel's syndrome is a rare condition and should be suspected in children with painful torticollis after infections or head and neck surgery. The importance of this syndrome for maxillofacial surgeons is in early differential diagnosis, to avoid early and late consequences of undiagnosed pararetrapharyngeal abscess and atlantoaxial subluxation and compression of vital structures. Grisel's syndrome needs to be treated multidisciplinary and immediately.

Keywords: Grisel's syndrome, COVID infection, torticollis, parapharyngeal abscess

UPPER BLEPHAROPLASTY-ANATOMY, PLANNING, SURGICAL PROCEDURE AND CASE REPORT

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Introduction: Surgical correction of the eyelids, or blepharoplasty, is one of the most frequently performed procedures in plastic surgery with more than 1.3 million procedures per year. Successful performance requires an excellent knowledge of periorbital anatomy, particularly the anatomical changes that occur during aging. Anatomically, the upper eyelid is often divided into two compartments separated by the orbital septum. The anterior compartment consists of the skin and the orbicularis oculi muscle. The skin of the eyelids is very thin and contains a small number of sebaceous and adnexal structures. The orbicularis oculi lies immediately next to the skin without subcutaneous fat and is divided into the orbital, preseptal and pretarsal part. The orbital septum is a thin layer of adventitia that serves to retain fat tissue and is an important surgical landmark. The posterior compartment consists of the levator palpebrae superioris muscle, levator aponeurosis, tarsus, Muller's muscle and conjunctiva. Planning the operation is just as important as knowing the anatomy. A careful evaluation of the periorbital region is necessary, including the position of the eyebrows, eyelids and their symmetry.

Case report: A 40-year-old patient came to the private practice due to difficulty opening both eyelids during the morning hours and states that the excess skin on the eyelids is aesthetically disturbing. After the signed consent, we started the surgical procedure. The evaluation of the operative field is always performed while the patient is in an elevated position with a mandatory eyebrow lift to identify the most pronounced skin fold, which is usually 8-10 mm for women and 6-8 mm for men away from the eyelashes. The upper limit of the incision depends on the excess skin that is removed, following the shape of the eyebrow. Fat pads are accessed through the orbital septum, and unlike previous techniques, today the emphasis is on conservative excision of fat pads to avoid the appearance of sunken eyes.

Keywords: blepharoplasty, orbital septum, tarsus

THE ROLE OF THE ORBICULAR OCULI MUSCLE AND THE EYELID CREASE IN AESTHETIC UPPER BLEPHAROPLASTY: PRESERVE OR REDUCE THE ORBICULAR OCULI MUSCLE?

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Introduction: One of the most common aesthetic procedures on the face is upper blepharoplasty. The traditional approach to the procedure is the reduction of "excess" tissue, in order to improve the visibility of the pretarsal region, and to correct irregularities acquired over the years. The aim of the paper is to present several of the author's own cases and from the literature, and to compare in which situations is better to preserve or reduce the orbicularis oculi muscle and when to correct the crease of the upper eyelid.

Materials and methods: Presentations of cases with preservation and improvement of volume in upper blepharoplasty, aesthetic evaluation in the optimization of results, and presentations of cases with preservation and reduction of the orbicularis muscle.

Results: Preservation of the orbicularis oculi muscle and preaponeurotic fat tissue in selected individuals has been shown to greatly improve aesthetic outcomes and patient satisfaction. In situations where patients have had a low-lying upper eyelid crease throughout their lives or in those who have present brow ptosis, this approach has been shown to optimize outcomes with much less stigma than surgery alone. In patients who have irregularities between the eyelids, eyelid ptosis, uneven eye creases, better results are achieved with an alternative approach, muscle reduction, and the creation of a new crease.

Conclusion: Aesthetic upper blepharoplasty can be raised to a higher level than just simple soft tissue excision. An individual approach opens up the possibility to optimally maintain or restore the voluminous appearance of youth, change the appearance of the upper eyelid in order to achieve the desired effect in the patient, with the correction of the most subtle asymmetry between the eyelids with selective preservation/reduction of the orbicularis muscle, and the formation of the eye crease, improving the aesthetic outcome for the patient.

Keywords: blepharoplasty, orbicular oculi muscle, aesthetic surgery

LOWER EYELID BLEPHAROPLASTY: WHAT TO DO WITH FAT PADS?

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Blepharoplasty of the lower eyelids is one of the most common and among the most challenging aesthetic facial procedures. Eminent world experts have divided opinions on the choice of surgical access method as well as the management of intraorbital fat pads. The aim of this presentation is to convey the latest opinions of experts based on a set of scien-

tific papers from the literature.

The term lower blepharoplasty implies excision or transposition of intraorbital fat pads and, if necessary, excision of excess skin. The goals of lower eyelid blepharoplasty are to correct the characteristic signs of aging that occur in the periorbital region. There are 2 surgical approaches, transconjunctival and transcutaneous. The transconjunctival approach is the most common method of choice with fewer complications. The need for skin resection is a factor that makes the transcutaneous approach the method of choice in that case. Both approaches can have potentially unwanted complications. They can be early complications such as retrobulbar hemorrhage, iatrogenic corneal damage, and postoperative infections. Later complications refer to ectropion, lagophthalmos, epiphora, strabismus, and in the case of a transcutaneous approach, pronounced scars and hyperpigmentation of the skin. In manipulation of the lower eyelid fat pads, surgeon has many options including excision, repositioning, or augmentation with autologous fat grafts. More recently, a more conservative excision of intraorbital fat pads is preferred. Optimum preservation of orbital fat tissue and its transposition is better alternative than complete removal of prolapsed orbital fat tissue.

So, there is no best or most correct surgical approach in lower eyelid blepharoplasty surgery. In choosing the correct technique, surgeon must individually look at the patient's problems and listen to his requests, and based on that, decide on the right approach and technique for performing this procedure.

Keywords: lower eyelid blepharoplasty, fat pad transposition, fat pad excision, transconjunctival approach, transcutaneous approach

OTOPLASTY – PEDIATRIC AESTHETIC SURGERY

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Introduction: Protruding ears or prominauris is the most common congenital deformity of the external ear. The incidence of this deformity is 5% in the population. This anatomical abnormality in general does not cause functional disturbances, but it can have a negative psychological impact in children. It is associated with the development of anxiety in children and reduced social integration due to teasing by peers. As a result, otoplasty is one of the most common aesthetic corrections in childhood.

Materials and methods: A review of the literature with a presentation of the most commonly used techniques in otoplasty and their specificities. Aesthetic outcomes and the importance of correction of protruding ears in children.

Results: About two hundred different otoplasty techniques are described in the literature, which suggests that no single technique is ideal, without complications and limitations. Modern techniques combine several methods and an individual approach to achieve optimal long-term results.

Conclusion: Otoplasty is a seemingly simple surgical procedure that requires excellent knowledge of anatomy, anthropometric norms and surgical techniques in order to achieve an optimal aesthetic outcome. Correction of protruding ears in children has an important psychological impact on child development and social integration.

Keywords: otoplasty, prominauris, aesthetic, pediatric, protruding ears

CLEFT LIP (AND PALATE) RHINOPLASTY

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Introduction: All patients with cleft lip and palate have a more or less pronounced typical nasal deformity. Partial or complete absence of fusion of the facial processes in the embryonic period leading to cleft lip and palate formation is accompanied by a deformity and malformation of the nose, which depends on the severity and type of cleft. The nasal anomaly can be subtle, but in the case of a cleft lip it is always present to some extent, and the wrong insertion of the circular muscle of the lip contributes to it.

Case report: The most common opinion is that nose correction should be divided into two, possibly three phases: primary, intermediate and secondary. Primary rhinoplasty is performed during cheiloplasty and enables early improvement of aesthetics and function without jeopardizing the growth and development of the nose and face. Secondary rhinoplasty is performed at skeletal maturity, with the aim of achieving final symmetry, definition of all aesthetic subunits of the nose, and correction of septal deviation. In the case of greater asymmetry of the nostrils or pronounced vestibular webbing, intermediate rhinoplasty can be performed in preschool age. Secondary rhinoplasty, or septorhinoplasty, most often includes septum deviation surgery, correction of the appearance and position of the columella, and improvement of the symmetry and projection of the nasal tip. Nasal deformity is the most common cleft stigma that remains visible despite surgical treatment. It is present at birth, but also evolves during growth and development – some com-

ponents can be corrected early on, but some develop further with facial growth. Relatively conservative approach during primary rhinoplasty will leave behind a minimally scarred operative field and contribute to a good result of secondary rhinoplasty.

Keywords: cleft lip, nose, rhinoplasty

DERMAL FILLERS AND COVID – DELAYED INFLAMMATORY REACTION

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Introduction: Dermal hyaluronic fillers are considered one of the most common minimally invasive procedures in aesthetic surgery. In the last three years, the human population has been significantly affected by the viral disease COVID-19, from which 559 million people have fallen ill and 6.36 million have died worldwide. A new, rare but significant side effect of the COVID-19 disease or a consequence of vaccination against COVID is a delayed inflammatory reaction in the area where dermal fillers were applied.

Materials and methods: We present the case of two patients who developed a delayed inflammatory reaction in the area of the applied filler two and four months after the application of hyaluronic fillers for lip augmentation, and after recovering from COVID and receiving the vaccine against COVID. In both patients, the reaction was manifested by localized edema. Localized infection and the possibility of an allergic reaction to the preparation are excluded.

Results: After the oral therapy was applied (antihistamines and pulse therapy with corticosteroids) within 24 hours, there was an improvement in the findings and a local regression of the inflammatory reaction.

Conclusion: A literature review revealed several described cases of delayed inflammatory reaction after a COVID-19 infection or vaccination against COVID, and this side effect is still not often seen in clinical practice. The reaction between the hyaluronic acid filler and the SarsCoV-2 virus is believed to be immune-mediated. Since patients often initially contact the doctor who applied the filler, it is necessary to take into account information about past infection or vaccination in the anamnestic before administering the filler, and to take the delayed inflammatory reaction into account in the differential diagnosis. It is important to recognize this complication in time, to prevent more severe complications in time.

Keywords: dermal fillers, hyaluronic fillers, COVID, complications

ALVEOLAR BONE REMODELING WITH MAGNETIC MALLETT

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Magnetic mallet is an electromagnetic instrument assembled into a handpiece energized by a power control device, delivering forces by timing of application. Osteotomes are coupled to the handpiece, which pushes a shock wave through their tip. This device exploits an electromagnetic, electronically operated collision between two masses, allowing application of high intensity impact applied in a very short time period. Magnetic mallet impacts that go from 65 to 260 daN applied in 120 microseconds will affect only the bone mass on which the osteotome operates and not the whole craniofacial mass. When hitting an osteotome using a manual surgical hammer, the force range that can be obtained is 60 to 80 daN, applied in 300 microseconds and this is the main reason why these forces affect the whole craniofacial mass. With magnetic mallet much higher force can be delivered in shorter time. This guarantees that during the surgery no otolith detachment can occur preventing problems of patient dizziness, vertigo, and nausea (benign paroxysmal vertigo – BPPV). Advantage of this device is to give the surgeon the ability to use just one hand in carrying out the surgery, thus gaining higher control and visibility. It reduces surgical procedure time and it simplifies bone remodeling procedure. This device has many different applications like atraumatic teeth extraction, bone condensing, sinus floor elevation, horizontal and vertical bone expansion.

We will present cases of vertical and horizontal bone expansion, internal sinus elevation and alveolar bone condensing which was preserved with Cerabone biomaterial and with PRF.

Keywords: magnetic mallet, vertical expansion, horizontal expansion, bone condensing

HORIZONTAL AUGMENTATION OF THE ALVEOLAR RIDGE – CASE REPORT

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Introduction: Two cases of horizontal bone augmentation of the alveolar ridge of the lower jaw after tooth loss and resulting atrophy will be presented. The goal of the procedure was to obtain an adequate width of the alveolar ridge in order to place dental implants and to gain a functional and aesthetic solution. The materials used were titanium pins, resorbable collagen membranes, xenograft, disposable bone scrapers, autogenous bone chips, membranes made of plasma enriched with growth factors, and non-resorbable polypropylene suture.

Case report: In both cases, the so-called „sandwich technique” was used. After mobilizing the flap, cortical bone chips are collected with a disposable bone scraper. The preparation of the bed (decortication) is done with a round bur, the collagen membrane is fixed on one side of the alveolar ridge with titanium pins, and the space between the membrane and the alveolar ridge is filled with a mixture of autologous bone chips and xenograft. In one of the two cases presented, dentin graft was added as an additional component. After the extraction and processing of the tooth according to the given protocol, the dentin graft is obtained in the form of granules, which is mixed with the original two components. Six months later, a control CBCT (cone beam computed tomography) is performed, on which an adequate width of the alveolar ridge can be seen. The working field is reopened, all accessible pins are removed, and the dental implants are successfully placed. The obtained results are in favor of the fact that by using the mentioned technique, predictable results can be obtained during the treatment of atrophic narrow alveolar ridges.

Keywords: augmentation, implantology, atrophy, dentin graft, autologous

ALVEOLAR RIDGE AUGMENTATION BY “KHOURY BLOCK” GRAFT IN CASE OF PREMOLAR HYPODONTIA

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Introduction: Hypodontia of mandibular second premolars, along with maxillary lateral incisors, are most often congenital missing tooth. In that part the alveolar ridge is often reduced in horizontal dimensions due to the absence of growth impulses of tooth germ. Implant-prosthetic rehabilitation is one option for treating agenesis of permanent teeth in case of declining of orthodontic treatment to close the gap.

Case report: We present the horizontal augmentation of the alveolar ridge on the side of congenital missing mandibular second premolar using the autologous graft technique by Fouad Khoury. The „Khoury block” technique is a combination of autogenous bone chips and blocks that are divided into the two thin laminae. Fixing two thin laminae to the alveolar ridge, the created gap is filled with autogenous bone chips obtained by scraping or grinding. The bone chips provide ideal contact between the existing alveolar ridge, which is crucial for the vascularization, while the thin laminae ensure volume stability to the soft tissue. Intraoral donor sites for taking autologous bone grafts can be different. In this case report, the autologous bone grafts are obtained from the mandibular ramus, adapted and stabilized by screws in the site of congenital missing mandibular second premolar. After the healing period, dental implants were placed and loaded with permanent prosthetic work following osseointegration.

Keywords: hypodontia, horizontal augmentation, Khoury technique

COMPLICATION OF ALVEOLAR RIDGE RECONSTRUCTION WITH TITANIUM MESH – A CASE REPORT

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Introduction: Guided bone regeneration (GBR) is considered a safe and predictable method for the reconstruction of alveolar ridge defects. Prevention of soft tissue migration into the regenerated bone defect and mechanical stabilization of grafting material are considered essential in the process of GBR. Various membrane types have been designed to meet these criteria. Despite the extensive use of conventional membranes, three-dimensional bone defects require adequate retention and stabilization of the replacement mate-

rial. The use of a titanium mesh provides mechanical conditions necessary for successful healing. The advantages of titanium are its good mechanical properties and biocompatibility. Titanium meshes can be individualized preoperatively by 3D printing or intraoperatively due to the plasticity of the material. Complications are to a lesser extent present in the surgical phase of treatment, with predominantly emphasis on complications in the healing phase. The wound dehiscence and consequential exposure of the titanium mesh are the most frequent complications.

Case report: The case of exposed titanium mesh in the mandible in a 34 year old patient will be presented. The patient comes to the Department of oral surgery at the School of Dental Medicine University of Zagreb due to the pain and exposure of the titanium mesh placed 8 years ago in the right distal region of the mandibular alveolar ridge. A comparison of the post-operative orthopantomogram and present CBCT shows the spread of the inflammatory process to the anterior tooth adjacent to the augmented region. The removal of the titanium mesh was performed in general anesthesia with finding of inadequate fixation of the mesh to the alveolar ridge, which was the primary cause of insufficient stabilization of the grafting material. Suturing of the mucoperiosteal flap under tension had also contributed to the membrane exposure. After removal of the mesh, the bone defect was cleaned and the adjacent tooth was extracted.

Conclusion: A proper surgical technique in the reconstruction of the alveolar ridge is essential for avoiding surgical complications, but also at later stages of healing.

Keywords: bone regeneration, titanium, alveolar ridge augmentation

DISORDER OF THE TEMPOROMANDIBULAR JOINT CAUSED BY THE APPLICATION OF DERMAL FILLERS IN THE BONE AREA - CASE REPORT

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Introduction: Presentation of a case of a female patient being treated at the Department of Oral and Maxillofacial Surgery, Clinical Hospital Dubrava. Two weeks after getting dermal filler injections in the left and right cheekbones in an external institution, the patient developed complications in the form of swelling, pain and deviation to the r when opening the mouth, as well as crepitation of the left temporomandibular joint (TMJ).

Case report: The patient was primarily treated in the institution where the procedure was done, where due to swelling in the area of application in the left cheekbone Klavocin BID was prescribed and after the symptoms persisted hyaluronidase was applied. Due to unsuccessful treatment, the patient was further referred to an otolaryngology (ENT) specialist and later on to a specialist in dental prosthetics who made a stabilization splint for her. In order to establish complete diagnosis and therapy, the patient came to Clinical Hospital Dubrava for consultation regarding possible surgical therapy. A thorough examination of the face, masticatory muscles and TMJ revealed no indication for surgical treatment, thus nonsteroidal anti-inflammatory drugs (NSAIDs) and exercises to stabilize the TMJ were prescribed. The patient was also referred to a specialist in dental prosthetics for correction of the stabilization splint since it was not designed to guide her into a centric relation. After 5 months of observation, the symptoms still intermittently appear, but the patient feels an improvement of the mentioned complaints.

Keywords: temporomandibular joint, dermal fillers, oral surgery, dental prosthetics

GUMMY SMILE – SURGICAL AND PROSTHODONTIC SMILE CORRECTION

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Introduction: Gummy smile, also known as a gingival smile, is a smile that many want to correct. It's a smile where gingiva covers a significant part of the tooth crown, or the lip drags itself too far up and reveals the gums, and the teeth look apparently shorter. If the gingiva is visible more than 2 mm in a smile, we are talking about gummy smile, which in many cases aesthetically disturbs the smile and therefore the patients are extremely dissatisfied, and the gingiva of the upper jaw is to a large extent seen. Gummy smile can occur as a result of multiple factors. This is influenced by the size and shape of teeth and their position and position of the upper jaw, as well as the movement of the upper lip. It can also be caused by too small teeth, but also by excessive growth of the upper jaw. Gummy smile correction can be done in several ways depending on the cause. For every procedure, including the correction of such a smile, it would be good to plan in detail the complete procedure from start to an end of the rehabilitation of teeth and the surrounding tissues

and present the planned results to the patient in advance.

Case report: This paper will present the obtained new smiles of two patients created after a precise therapy plan by taking impressions for the design of the study model, as well as photographs for planning necessary interventions. The smile design was made considering the personality of the patient and respecting the anatomical structures of the face and lips that include the smile. Surgical procedures in both cases were based on frenulectomy and gingivoplasty, followed by prosthodontics, and in one case on lip filling.

Conclusion: A systematic and multidisciplinary approach to gummy smile correction provides better and more predictable results bringing together: prosthodontics, periodontology, oral surgery and even aesthetic medicine, which also provides better patient satisfaction.

Keywords: gingivoplasty, labial frenulum, prosthodontics

CLOSURE OF THE OROANTRAL COMMUNICATION USING THE BUCCAL FAT PAD

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Oroantral communication is a pathological communication between the maxillary sinus and the oral cavity. Most often it occurs as a complication due to the extraction of maxillary premolars and molars. Also, pathological processes at the periapical area or the maxillary sinus that act destructively to the base of the maxillary sinus and perforate the mucous membrane of the maxillary sinus can cause the formation of oroantral communication. Apically directed forces applied during extraction can lead to insertion of part or entire tooth into the sinus cavity also can cause formation of communication. Long-term communication turns into an oroantral fistula. The simplest diagnostic method is the blowing test on a blocked nose, and anamnestic info that patients complain of the passage of liquid and food from the mouth to the nose. Smaller OA communications can be closed primarily, and larger and persistent ones require a more complex surgical procedure. One of these methods is closure using a flap of the buccal fat pad. We will present the surgical approach and technique, as well as the patient's experience and status after surgery.

Keywords: oroantral communication, buccal fat pad

BILATERAL MAXILLAR TUBEROPLASTY AS PART OF PRE-PROSTHETIC PREPARATION

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Introduction: Nowadays, when planning prosthetic works, implant prosthetics predominates as the possibility of anchoring mobile or fixed prosthetic works. Such planning does not exclude all other pre-prosthetic works such as frenulectomy, sulcoplasty, modeling of the alveolar ridge, excision of hyperplastic or hypertrophic mucosa, tuberooplasty, expansion of the attachment mucosa belt and others. On the contrary, failure to recognize the pre-prosthetic problem and its inadequate treatment greatly compromises the success and longevity of implant-prosthetic works and is one of the leading problems of complications and failures in this type of prosthetic planning. On the other hand, there are still patients who, due to general or local factors, cannot be treated with implant prosthetics, so surgical pre-prosthetic preparation is an indispensable part.

Case report: This summary presents a case of preprosthetic planning in a patient with an edentulous lateral part of the maxilla where exostoses predominate, along with soft tissue hypertrophy and a lowered sulcus and grips of the mobile mucosa and a periodontologically compromised front. In the prosthetic planning, it was concluded that the remaining teeth cannot be quality supports for either mobile or fixed prosthetic work. The condition found in the patient's mouth seriously affects the quality of life, and the primary motive and goal of her visit is to make a functionally acceptable tooth replacement. Although this is a middle-aged patient with a healthy, orderly medical history, the patient decides to make a total prosthesis. After that, the patient underwent bilateral maxillary tuberooplasty with PRF preservation, which is used as a biomaterial due to better quality and quantity of soft tissue healing. After adequate bone and soft tissue healing, optimal relationships are obtained for the creation of a functionally adequate mobile prosthesis, which implies a sufficiently wide and high alveolar ridge with a mucosa of normal resilience in order to create a satisfied patient's smile.

Keywords: hypertrophic mucosa, tuberooplasty, mucosa, prosthetic planning

REMODULATION OF THE EMERGENCE PROFILE AFTER IMMEDIATE IMPLANT PLACEMENT

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Introduction: The loss of tooth in the aesthetic zone of the upper jaw is one of the most challenging therapeutic procedures in implant-prosthetic rehabilitation. A key factor in achieving optimal aesthetic outcome is stability and harmony of soft and hard tissues. The emergence profile created by the temporary and permanent crown also has a significant importance on the soft tissues appearance. The tooth extraction technique, the position of the implant, the choice of material for the prosthetic supply also affect the final result. For this reason, the material of choice for the abutment is zirconium oxide and lithium disilicate for the final crown.

Case report: A 30-year-old female patient presented with pain in maxillary right central incisor. After evaluation of the several prosthetic treatment options, atraumatic tooth extraction was performed with immediate implant placement and temporary crown. Digital planning and surgical guide for immediate placement was made with a temporary crown for remodulation of soft tissues to achieve optimal aesthetic appearance. Three months later, the permanent lithium-disilicate crown was placed.

Keywords: dental implant, emergence profile, immediate loading

COMPLICATIONS OF ODONTOGENIC INFLAMMATION - FROM ODONTOGENIC INFLAMMATION TO NECROTIZING FASCITIS

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Introduction: In the lecture, it is planned to introduce necrotizing fasciitis and present two patients treated in University hospital Dubrava.

Case report: Both patients developed necrotizing neck fasciitis from odontogenic inflammation, and one patient developed mediastinitis. One patient suffers from diabetes and he was admitted to the hospital with a clinical picture of diabetic ketoacidosis while the other was admitted to the hospital as a previously healthy person. They were treated surgically - both patients had tracheotomies, multiple extraoral incisions, drainage, and tooth extractions. Thoracic surgeons also participated in the treatment of the patient with mediastinitis. Patients were treated during their stay in the hospital with supportive drug therapy (antibiotics and other drugs) and were regularly bandaged and their recovery was monitored diagnostically until complete recovery. The course of treatment for each patient will be presented as part of an oral presentation.

Keywords: tooth, inflammation, necrotizing fasciitis, mediastinitis

ODONTOGENIC OSTEOMYELITIS IN HEALTHY INDIVIDUALS - COMPLICATIONS IN THE SARS-COV-2 PANDEMIC

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Introduction: Osteomyelitis is an infection of the bone that usually affects immunocompromised individuals with multiple comorbidities. Maxilla and the mandible are at risk because of close contact with primarily contaminated spaces of the oral cavity and maxillary sinus that can harbor subclinical infection and a thin mucosal layer that adheres to the periosteum. Recently, odontogenic osteomyelitis has become rare due to better oral hygiene, stomatological care, and the widespread use of antibiotics. During the pandemic of the SARS-CoV-2 virus, the availability of medical care was limited, and the number of complicated infections rose.

Case report: We present two cases of odontogenic osteomyelitis of the mandible in healthy individuals that were complicated with relapses and SARS CoV-2 coinfection. The first patient was a 30-year-old otherwise healthy female who developed localized osteomyelitis after extraction of the tooth 38. She was asymptomatic but tested positive for SARS-CoV-2. The second patient was a COVID-19-positive 29-year-old male with no previous illnesses, whose odontogenic abscess and neck edema compromised the airway, requiring urgent tracheotomy. After two weeks he developed a relapse of the infection and osteomyelitis of mandibular ramus with the formation of sequestrum. Coinfection with SARS CoV-2 virus could aggravate osteomyelitis by causing immune dysfunction and depletion of CD-4 and CD-8 lymphocytes. The osteomyelitic site is hypoperfused because of tissue edema and the inability of intraseal spaces to expand. Endothelial le-

sions and increased coagulation in COVID infection could contribute to hypoperfusion and the spread of the infection. Currently, it is impossible to claim that SARS CoV-2 infection aggravated the clinical status of our patients, but further studies are needed about the impact of SARS CoV-2 infection on other organs and illnesses, especially in mild and asymptomatic cases.

Keywords: odontogenic osteomyelitis, osteomyelitis, COVID-19, complication

THE ROLE OF EXTRACORPOREAL BLOOD PURIFICATION IN THE TREATMENT OF A PATIENT WITH LEMIERRE'S SYNDROME

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Introduction: The aim is to present a case of Lemierre's syndrome in a previously young and healthy girl, as well as to present an innovative way of its supportive treatment with extracorporeal blood purification. Lemierre's syndrome is characterized by septic thrombophlebitis of the internal jugular vein, anaerobic bacteremia, primarily caused by the bacterium *Fusobacterium necrophorum*, and the existence of a septic embolus. The syndrome typically initially manifests with oropharyngeal inflammation in previously healthy individuals.

Case report: This paper presents the case of a young female patient who was treated at KBC Osijek at the Department of Maxillofacial Surgery. The patient presented with the anaerobic sepsis, thrombosis of the right jugular vein, presence of septic emboli in the lungs, and a right-sided parapharyngeal abscess, all of which manifested after her previous ambulatory treatment for tonsillopharyngitis. The patient underwent a complete open exploration of the retropharyngeal, parapharyngeal and retroesophageal space up to the aortic arch on the first day of hospitalization. Adequate drainage of purulent exudate was achieved. Intravenous antibiotic treatment with meropenem, linezolid and metronidazole as well as anticoagulant therapy with enoxaparin were started upon admission. On the second day of the hospitalization the patient was started with the extracorporeal blood purification method, which is not a common treatment modality for Lemierre's syndrome, as it is usually used for the treatment of Gram-negative sepsis. Microbiological analysis of the intraoperative sample isolated *Fusobacterium necrophorum*. The purpose of the extracorporeal blood purification is to use a special filtration membrane to eliminate pro-inflammatory cytokines and endotoxins from the blood and thus suppress the systemic inflammatory response and consequent multiorgan failure, which often leads to a fatal outcome. After complete antibiotic, anticoagulant and surgical therapy, with the help of extracorporeal blood purification, the patient was completely cured, and the thrombosed jugular vein was recanalized.

Keywords: Lemierre's syndrome, extracorporeal blood purification, sepsis

SUPRACLAVICULAR AXIAL FLAP AS A RECONSTRUCTION METHOD OF INTRAORAL DEFECTS

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Introduction: Malignant tumors of the oral cavity most often require surgical treatment. Depending on the localization, size, depth of invasion and type of tumor, the excision itself leaves a certain postoperative defect. By reconstructing the defect, it is necessary to ensure the best functioning of the organs of the oral cavity while making sure that important anatomical structures are preserved and that the aesthetic appearance is not significantly disturbed. One of the reconstruction methods is the supraclavicular axial flap.

Case report: A patient with pathohistologically proven squamous cell carcinoma of the buccal mucosa was decided to be treated surgically. Under endotracheal anesthesia, the cancer is approached using the "lip split" and "mandibular swing", and platysma skin flap for neck dissection. After excision of the cancer and neck dissection, the ipsilateral supraclavicular axial flap is prepared, which we previously measured - the edges of the flap were drawn on the neck and the direction of the vascular structures was marked. A certain part of the flap is de-epithelialized and after modeling the defect is reconstructed. Wounds are sutured in layers and drainage suction is placed. The flap completely covered the postoperative defect and thus approximately preserved the anatomical shape of the oral cavity. The cheek muscles remained functional and the patient has complete oral competence. After removal of the nasogastric tube feeding is the same as before surgery. Considering that the supraclavicular flap can be long enough with modeling and proper preparation, there are indications when it can be used for the reconstruction of certain defects of the oral cavity as an alternative to microvascular and local flaps.

Keywords: reconstruction, flap, axial, supraclavicular

ENDOSCOPIC, ENDOSCOPIC-ASSISTED AND OPEN APPROACHES IN THE TREATMENT OF JUVENILE ANGIOFIBROMA: WHAT HAS BEEN NEW IN THE PAST DECADE?

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Introduction: Juvenile angiofibroma (JA) is a benign, but locally invasive tumor of the nasopharynx. Surgical resection of JA is performed through endoscopic (EA), endoscopic-assisted (EAA), or open approaches (OA). The management of these tumors is constantly evolving. We aimed to compare the surgical efficiency and morbidity of EA, EAA, and OA in JA treatment by conducting a systematic review of the literature published over the last 10 years.

Materials and methods: A systematic review of the English literature (PubMed database) on surgical cases of JA published between 2012 and 2022 was performed. Eligible articles were analyzed for individual patient data (IPD) and aggregate patient data (APD). The primary predictor variable was the surgical approach. The primary and secondary outcome variables were recurrence rate, and intraoperative blood loss, respectively.

Results: The search retrieved 75 articles reporting 1,586 JA surgical cases; 159 in IPD, and 1,457 in APD datasets. Within the IPD dataset, recurrence rates were significantly lower in cases completed by EA than that by OA ($p < 0.05$). There was no significant difference in recurrence rates between the EA and EAA groups ($p > 0.05$). EAA had a lower recurrence rate than that of OA ($p < 0.05$). For the APD dataset, the recurrence rate following EA was significantly lower than that following OA ($p < 0.05$). There was no significant difference in recurrence between the EA and EAA groups ($p > 0.05$), and between the EAA and OA groups ($p > 0.05$).

Conclusion: EA represents the method of choice for mild and moderately advanced JA. EAA and OA still play important roles in the treatment of advanced-stage JA. In our institutional experience, the use of harmonic scalpel in endoscopic surgery aids to the control of bleeding and facilitates surgical procedure.

Keywords: juvenile angiofibroma, endoscopic surgery, endoscopic-assisted surgery, open surgery, recurrence, harmonic scalpel

IS THERE CORRELATION BETWEEN METEOROLOGICAL PARAMETERS AND OCCURRENCE OF ODONTOGENIC ABSCESSSES?

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Introduction: The aim of this retrospective longitudinal research was to determine if there is correlation between meteorological parameters and occurrence of odontogenic abscesses requiring hospitalization.

Materials and methods: In our research we collected data from patients that were admitted to the Department of Oral and Maxillofacial Surgery at Dubrava University Hospital in Zagreb from 1.1.2015. to 1.6.2021. Total of 292 patients' records were analysed. There was 168 male and 124 female patients. Patients were divided into adult and pediatric groups. We investigated following parameters: gender, seasonality, infected tooth, antibiogram, antibiotic therapy, antibiotic prophylaxis, bacterial group, comorbidities, complications, localization of abscess, laboratory results, period between symptoms onset and hospitalization, duration of hospital stay, period between dental procedure and hospitalization. Meteorological parameters were obtained from the Croatian Meteorological and Hydrological Service (<https://meteo.hr/>). Meteorological parameters on the day of acute symptoms of odontogenic abscess onset and two, five and seven days prior to onset of symptoms and hospitalization in each patient were recorded: daily mean temperatures, daily mean relative humidity, daily mean atmospheric pressure and precipitation. Data analysis was performed using the MedCalc Statistical Software version 12.5.0 (MedCalc Software, Ostend, Belgium; <https://www.medcalc.org>).

Results: In adult group daily mean atmospheric pressure five days before hospitalization present a moderate positive association with odontogenic abscess incidence ($r=0.48$, $p=0.05$). Interestingly, changes more than 12 hPa five days prior hospitalization shows strong positive association with odontogenic abscess incidence ($r=0.52$, $p=0.05$). In 26.3% of cases clindamycin resistance was observed. Regarding the localization, perimandibular abscess (35.7%) was most common. Previous dental procedure was performed in 70.7% of patients.

Conclusion: There is moderate correlation between daily mean pressure change five days prior to hospitalization and odontogenic abscess occurrence. Threshold value was 12 hPa. **Keywords:** odontogenic abscess, hospitalization, atmospheric pressure, meteorological parameters

HYBRID LESION OF CENTRAL ODONTOGENIC FIBROMA AND CENTRAL GIGANTOCYLLULAR GRANULOMA OF THE UPPER JAW - REPORT OF THE 3RD CASE IN THE WORLD

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Introduction: Central odontogenic fibroma (COF) is a neoplasm of the jaw consisting of fibrous connective tissue, with or without calcification, and variable amounts of inactive odontogenic epithelium. Central gigantocellular granuloma (CGCG) is a locally destructive, benign lesion of the jaw that contains osteoclast-like giant cells in a fibrovascular stroma. Hybrid lesions with histological features of COF and CGCG have been described in less than 50 cases worldwide. This lesion shows a higher recurrence rate compared to COF, thus suggesting that CGCG may be the driving force behind recurrence. Like CGCG, this neoplasm has a high preference for the lower jaw (95%). The aim of this case report is to show the therapy of hybrid lesion, which, according to the currently available literature, has been described in the upper jaw in only 2 cases.

Case report: A 30-year-old female patient was administered to the Clinic for oral and maxillofacial surgery at KBC Split due to bulging of the left side of the upper jaw. A clinical examination revealed a palpable hard, painless swelling. Radiographic evaluation showed the presence of a well-defined unilocular radiolucent area around the roots of the maxillary first and second premolars. The tumor was surgically removed by enucleation and bone curettage in endotracheal anesthesia, as well as the dental implants located near the tumor affected by peri-implantitis at the location of teeth 26/27. Pathohistological verification confirmed the hybrid lesion of COF and CGCG. The patient showed no clinical or radiographic signs of recurrence one year after surgery. The nature of this lesion and its unpredictable behavior is dictated by a unique pathohistological picture with a CGCG component that leads to a higher recurrence rate, and it is successfully treated by surgical enucleation with local bone curettage. Further studies with long-term follow-up are needed to understand the pathogenesis of combined COF and CGCG lesions.

Keywords: central odontogenic fibroma, central gigantocellular granuloma, upper jaw, oral and maxillofacial surgery

ADENOCARCINOMA-IMPORTANCE OF CORRECT DIAGNOSIS

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Introduction: According to the classification of the World Health Organization, primary tumors of the oral cavity can be divided into odontogenic and non-odontogenic, which can be benign or malignant. They arise from mucosal tissue, neurovascular structures and muscles. The most common sites in the oral cavity are the jaws, sublingual area, retromolar area, and hard palate. In 90% of cases, malignant tumors of the oral space are squamous cell carcinomas, which make up 3% of all cancers affecting the body. Other malignant tumors in order of frequency are salivary gland tumors, primary bone tumors and metastatic tumors. According to the available literature, primary adenocarcinomas of the mandible that are not classified elsewhere are extremely rare.

Case report: A middle-aged patient presents to the Clinical Department of Oral Surgery, due to non-specific pain on the right side of the neck radiating towards the ear and the inability to open the mouth fully. A clinical examination does not reveal any clear cause of the complaints, but a radiolucent area in the area of the right corner of the mandible is observed by radiological diagnostics. An incisional biopsy showed that it was a clearly differentiated adenocarcinoma of partly salivary and partly papillary morphology. Additional radiological examinations ruled out other organs as potential primary foci and confirmed that it was a primary tumor. The patient underwent a resective procedure with selective neck dissection, partial resection of the lower jaw and reconstructive procedure with a free osteomyocutaneous lower leg flap. The patient is being monitored with no signs of recurrence or subsequent metastatic spread of the tumor.

Conclusion: This case emphasizes the importance of correct and timely diagnosis through various procedures and features of interdisciplinary cooperation of different specialists in the treatment of rare pathohistological diagnoses.

Key words: primary tumor, oral cavity, salivary gland, dissection

DIFFERENTIAL DIAGNOSIS OF CYSTIC LESIONS ON THE HARD PALATE

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Introduction: Cystic changes in the oral cavity are a relatively common pathology. However, the differential diagnosis should take into account the occurrence of other benign and malignant changes that can also be found in the same location. Therefore, in addition to a detailed history, clinical and radiological examination, a pathohistological analysis of each change that is surgically removed is also necessary. The presentation will show a case from the "working" diagnosis of a cyst to the final pathohistological confirmation of mucoepidermoid carcinoma.

Case report: The patient states that she has had swelling on the left side of the palate for the past 6 months. A clinical examination of the palate in the projection of the tuber reveals a swelling of approximately 2 cm. An analysis of the orthopantomogram revealed an illumination in the tuber on the left side of the maxilla, which made an impression of the cyst, and the patient was referred for a CT scan. CT radiological analysis showed a 15 mm round formation in the mucosal space of the posterior part of the hard palate on the left side, partially imbibed with contrast. On the basis of the clinical and radiological examination, a working diagnosis of maxillary cyst is made, differential diagnosis, epidermoid or other non-odontogenic cyst or cystic degenerated pleomorphic adenoma. Before surgery under general anesthesia, a puncture was made and sent for cytological analysis. Cytological analysis confirmed the elements of cystic formation. During the operation, the change is completely excised and sent for PHD analysis. The pathohistological finding of the change points to low-grade mucoepidermoid carcinoma, and excision is also the therapy. The patient is given instructions on the importance of regular control. One year after the procedure, the locoregional findings were normal with no signs of disease recurrence.

Keywords: mucoepidermoid carcinoma, palate, pathohistological findings

INCORRECT OR DELAYED DIAGNOSIS - CASE REPORT

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Introduction: Tumors of the oral cavity are the 6th most common tumors in humans, including 2%-6% of all tumors and 30% of tumors of head and neck. The male population in underdeveloped countries is more often affected with a ratio of women to men of 1:9. In developed countries the ratio is 1:1.5. The world annual incidence is 4:100,000, with average mortality rate 1.9:100,000. Proven hereditary predisposition, the consumption of strong alcohol and tobacco is associated with the development of cancer of the oral cavity and oropharynx. More than 300 carcinogens in cigarette smoke lead to malignant transformation of epithelial cells. The synergistic effect of alcohol and tobacco increases the risk to over 38%. More than 90% of all oral cavity tumors are squamous cell carcinomas.

Case report: A 56-year-old patient comes to the Department of Oral Surgery. He was previously treated 3 times due to exophytic formation in regio 13 in another institution by a periodontologist for past 7 months without success. The patient presents with swelling and occasional pain that has intensified over the past month. Clinical and radiological work-up and biopsy resulted in a PHD finding of squamous cell carcinoma of the gingiva. The patient underwent segmental resection of the maxilla, with selective neck dissection and reconstruction with a free fibula flap and adjuvant radiotherapy (66 Gy/30x). Post-operative recovery went smoothly, and 2 years follow-up is without signs of recurrence or deterioration of carcinoma.

This case aims to show the importance of good diagnostics and the consequences that arise if mistakes are made. It should be emphasized that every clinician will make a mistake in their work at least once, luckily with consequences. Most clinicians are not aware of the mistake they have made due to a number of reasons, so the feedback on diagnostic performance is extremely important.

Keywords: squamous cell carcinoma, gingiva, maxilla, radiotherapy

HYPERPLASIA OF THE MANDIBULAR CORONOID PROCESSES – A CASE REPORT

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Introduction: Patients often come to the oral surgery office with mouth opening difficulties, that is, trismus, which has numerous causes. The most common causes include inflammation around the masticatory muscles, fibrous changes in the masticatory muscles after radiotherapy, dislocation of the temporomandibular joints, trauma to the jaw and facial bones. One of the rare causes of difficult mouth opening is hyperplasia of the coronoid process of the mandible. It is a congenital, benign enlargement of the mandibular coronoid processes, of unknown etiology. It statistically affects men more often than women, at the average age of 22.

Case report: In this lecture, we present the case of a 17-year-old male patient who was referred to the oral surgery clinic for limited mouth opening that had been progressing for 2 years. Following the analysis of the panoramic radiograph, an odontogenic cause of the complaints was ruled out, but long coronoid processes on both sides were observed. The patient underwent an MSCT scan of the jaws and face with which we were able to construct a 3D image showing the elongated coronoid processes, especially on the left. The proposed therapy was bilateral coronoidectomy, to which both the patient and his parents agreed. We present the course of the operation at the Clinic for Oral and Maxillofacial Surgery at Dubrava University Hospital as well as a comparison between the preoperative and postoperative status.

In conclusion, along with the common, almost everyday diagnoses that include limited mouth opening, we should always keep in mind the ones that are not so frequent.

Keywords: limited mouth opening, coronoid process, hyperplasia, coronoidectomy

CASE REPORT: DISTANCE IS(NOT) IMPORTANT?! 35 CM LONG PEDICLED FLAP FOR RECONSTRUCTION OF ORAL CAVITY DEFECT

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Introduction: Reconstructive surgery after intraoral carcinoma resection is technically highly demanding because of vital and sensitive anatomical structures. Quality reconstruction implies restoration of swallowing and speech and is expected acceptable cosmetic result. Reconstruction methods primarily depend on size and localization of the defect area and kind of tissue that is ought to be replaced. Nowadays, standard in oral reconstructive surgery is use of microvascular free flaps. Radial forearm free flap, for its reprehensible easiness of harvesting, thinness and long vascular pedicle is the most often used.

Case report: A 55-year old female patient with sublingual carcinoma and palpable lymphadenopathy of right side of the neck was admitted to our department. Tumor biopsy was performed, fine needle aspiration cytology of suspicious lymph node and radiological imaging which confirmed diagnosis of oral SCC and regional metastatic disease. She was treated with „en bloc“ resection of sublingual SCC, marginal mandible resection, right-sided radical neck dissection, selective neck dissection on the left side and postablative defect reconstruction. Initially reconstruction was planned with RFFF. However, intraoperatively microvascular free flap was converted to axial distant pedicled flap due to unreliable vascular pedicle of very small diameter, lack of technical requirements and anatomical vascular variations which allowed conversion. During surgery was noticed variation of radial artery with branching high in proximal segment of brachial artery which was then followed parallel with brachial artery along forearm at its typical place. Variation allowed harvesting the flap like axial fasciocutaneous flap without jeopardy of vascular supply of fist and forearm. Flap and pedicle were tunneled in upper third of upper arm in subdermal-supraclavicular plane, then through the neck on defect place.

One year after, flap is vital, donor site without significant comorbidity and patient without signs of disease relapse.

Keywords: oral SCC, reconstructive surgery, forearm flap

AESTHETIC CORRECTION OF EYELIDS

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Introduction: Blepharoplasty or aesthetic correction of the eyelids is a surgical procedure to correct defects or deformations of the eyelids. In addition to functional disorders, blepharoplasty can also be performed for aesthetic modification of the eye and face area.

Case report: Aesthetic correction of the eyelids removes excess tissue (skin and fatty tissue), strengthens the corresponding periorcular muscles and tendons, and solves the functional and aesthetic problems of the periorbit, which encompasses the area from the eye-

brow to the upper part of the cheek. The most common indication for blepharoplasty is laxity of the skin of the upper eyelids, which is transferred over the eyelashes and causes loss of peripheral vision and “tired eyes” and causes difficulties in performing daily activities such as watching television, reading or driving a car, and is most pronounced towards the end of the day in the evening hours. In addition to correction of the upper eyelids, correction of the lower eyelids can also be done. The operation itself lasts from 30 to 60 minutes per eye, can be performed under local or general anesthesia, and the patient is hospitalized one day after the operation. Stitches are removed seven days after surgery. The role of the nurse during surgery is the mental and physical preparation of the patient, assisting during surgery and post-operative care, which includes the use of antibiotic and analgesic therapy, dressings and application of cold compresses.

Conclusion: Patients after blepharoplasty look more rested, fresher and younger, because the correction of the eyelids is an extremely effective procedure that brings noticeable and quick results in people of all ages and both sexes.

Keywords: blepharoplasty, eyelid deformation, aesthetics

THE ROLE OF THE NURSE IN THE PREPARATION OF PLASMA RICH IN GROWTH FACTORS

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Introduction: With the advancement of technology in dental medicine, nurses must constantly improve. Thus, with the advent of new technology, plasma enriched with growth factors is also used at the Department of Oral Surgery. Plasma is obtained from the patient's blood, which is performed using the venipuncture technique just before the procedure in the oral cavity.

Growth factors are 100% autologous material obtained from the patient's blood, to which the patient is not allergic. It can also be mixed with artificial bone and is used to regenerate soft and hard dental tissues. It is also used after tooth extraction, alveotomy, cystectomy, lifting the bottom of the maxillary sinus, implantation of dental implants. The nurse must possess knowledge and skills, must undergo additional training to successfully prepare plasma enriched with growth factors.

Case report: After venipuncture, the blood is centrifuged, then pipetted, activated, and placed in plasmatherm. The obtained material is transferred to a sterile table under aseptic conditions and implanted in a defect in the patient's mouth. It serves for faster creation of soft and hard dental tissues, and for the patient to have the best possible post-operative recovery.

The protocol involves the extraction of venous blood from the patient and centrifugation, which achieves the separation of erythrocytes and leukocytes and produces plasma rich in growth factors.

Conclusion: It is crucial that the dental assistant is familiar with the venipuncture technique, which is presented in more detail in the paper.

Keywords: venipuncture, growth factors, regeneration, teeth, oral cavity

THE NURSE'S ROLE IN PREPARING THE INFUSION FOR REJUVENATING AND BOOSTING THE PATIENT'S IMMUNITY

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Introduction: Modern medicine has progressed in a short time. But it wasn't until the early to mid-nineteenth century that injections and transfusions began to be used to improve a patient's health. In 1960, John Myers began injecting patients with what we now call a “cocktail” of vitamins and minerals. Intravenous therapy is a novelty both in the world of beauty and in the health of our patients. The utilization of all minerals and vitamins is 100%. The most important thing is to feed the cells from the inside and enrich them with nutrients, while not burdening the digestive system. The infusion can definitely raise the energy in the body in a few minutes, and the patient feels stronger and better after just one treatment. Communication between doctor and patient is extremely important. Access must be exclusively individual. The doctor determines the therapy in conversation with the patient, and the nurse carries it out.

Case report: The doctor and the nurse have an equally important role to make the patient feel as calm and relaxed as possible during the treatment. The nurse observes the patient during therapy. In our polyclinic, we offer infusions for rejuvenation and boosting immunity. We use Q10, B complexes, amino acids, vitamin C. However, all these vitamins and coenzymes are not only for beauty, but are used to maintain the patient's health. Q10 works great on the skin, and is the Q10 molecule soluble in fat, which is found in most of our cells. L-arginine is amino acid that plays an important role in cell division, wound

healing, and ammonia excretion. B complexes are extremely useful in reducing fatigue and exhaustion, regenerating the nervous system, maintaining erythrocytes, skin regeneration, helping with depression and anxiety. Vitamin C or ascorbic acid is the most precious vitamin, it participates in the synthesis of collagen, helps the function of the defense system, leukocytes, iron absorption, it is also used in cancer patients.

Keywords: infusion, vitamins, minerals, amino acids, patient

USAGE OF ELASTIN- COLLAGEN MATRIX IN RECONSTRUCTION SURGERY WITH SKIN AUTOTRANSPLANTS

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Introduction: The skin is our largest and most visible organ that makes up to 18 % of our body weight. It protects us from the harmful environmental effects and the penetration of bacteria and fungi. Other important skin roles are thermoregulation, secretion and sensitive function. It consists of three main layers: epidermis, dermis and hypodermis and the damage to any layer leads to destruction and decreases its protective function which results in a higher probability of an infection.

Skin grafts are autotransplants completely removed from the donor site and transferred to another site. They are used for the reconstruction of skin and soft tissue injuries, on surfaces which can provide plasmatic imbibition, i.e., absorption of transudate from the recipient site. With regard to their thickness, skin grafts are classified as: split-thickness skin grafts (Ollier-Thiersch, Blair) and full-thickness skin grafts (Wolfe-Krause).

Skin grafts are usually taken from thigh, gluteus, forearm, back or abdomen. Due to the greater need for taking care of various wounds, there is a development in production of modern dermal substitutes so that the healing could be faster and more successful

Case report: We will present patients who underwent surgery at the Department of Maxillofacial Surgery, University Hospital of Split during the period from 2020 to 2022, whose post- operational conditions were excellent due to the use of MatriDerm®.

Conclusion: A new generation of artificial biological dermal substitute is MatriDerm® which use in reconstructive surgery is gradually increasing. MatriDerm® is a three-dimensional matrix consisting of natural collagen and elastin for support of dermal regeneration. Collagen is derived from bovine dermis and is composed of dermal collagen (Type I, III and V) while elastin is derived from bovine nuchal ligament by hydrolysis. It serves as a base for skin regeneration, it modulates the production of scar tissue and possesses a hemostatic feature.

Keywords: skin, autotransplants, MatriDerm®

ORTHOGNATHIC SURGERY – THE ROLE OF A NURSE

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Introduction: Orthognathic surgery involves adjusting one or both jaws in order to align them and correct any irregularities. Jaw growth is gradual, but in some cases the upper and lower jaw may grow at different rates. The difference in the development of the upper and lower jaw can be present at birth, but it can also develop due to genetics, the result of facial trauma in childhood, or because of tissue loss (tumour).

Case report: Subjective problems that patients report most often are related to aesthetic appearance, difficulties with biting and chewing food, difficulties with swallowing, pain in the jaw joint, chronic mouth breathing and severe snoring and suffocation during sleep (Sleep apnea). Surgeries are performed on healthy people to improve their appearance and function. For this reason, surgical procedures are bound to be safe with the lowest possible percentage of complications. In addition to the maxillofacial surgeon, doctors from other specialties also participate in the preparation for orthognathic surgery (orthodontist, dentist, radiologist, anaesthesiologist, oral surgeon, internist). In this poster, the role and importance of the nurse in orthognathic surgery will be clearly described and supported by images.

Conclusion: The nurse is the coordinator within the multidisciplinary team and her role here is invaluable. Good preoperative physical and mental preparation of the patient directly affects the outcome of the operation.

Keywords: nurse, multidisciplinary team, orthognathic surgery

ENTERAL NUTRITION IN PATIENTS WITH THE ORAL CAVITY AND PHARYNX TUMOR

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Introduction: Malignant diseases of the oral cavity and pharynx cause serious problems, threatening vital functions: breathing, swallowing, chewing and speaking. Surgical treatment is most often followed by radiotherapy and chemotherapy, which additionally cause damage to the mucous membrane of the oral cavity, resulting in even more pronounced

dysphagic difficulties. Difficulty chewing and swallowing food makes it impossible to put a sufficient amount of food in the mouth, which can lead to malnutrition, slower and more difficult healing of the wound, and an increase in morbidity and mortality.

Case report: The goal of timely recognition of difficulties with chewing and swallowing is to protect the respiratory system, prevent malnutrition, dehydration and complications. Depending on the general condition of the patient, the most acceptable way of feeding and supplementation is replacement enteral nutrition. If the intake of food by mouth is completely impossible, a nasogastric tube (NGS) is inserted into the patient or a percutaneous endoscopic gastrostomy (PEG) is placed. If enteral nutrition is not possible or is contraindicated, parenteral nutrition is applied - a form of nutrition in which basic nutrients are given to the patient directly into the venous system.

Conclusion: Problems with chewing and swallowing, or problems with food consumption in general, can significantly affect the quality of patient's life. Timely recognition of problems with chewing and swallowing implies the action of a multidisciplinary team, starting with nurses/technicians, speech therapists, pharmacists, nutritionists and specialised doctors.

Keywords: oral cavity tumor, pharyngeal tumour, dysphagia, enteral nutrition

USAGE OF MEDICAL HONEY IN THE TREATMENT OF CHRONIC SCALP WOUND- CASE REPORT

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Introduction: The usage of honey for treatment has been known since ancient Egyptians who applied honey on wounds and in doing so quickened the wound healing process. Due to its properties it is often used in modern medicine for infected surgical and chronic wounds. Chronic wounds have become a global healthcare burden, especially the ones which decrease the quality of life. These wounds require a longterm local therapy and are often accompanied by pain. Honey used for medical purposes is a certain type of honey with strong antimicrobial properties due to vitamins, minerals, enzymes, peptides and phenol components that not only prevent infection but also quicken the wound healing process. Only the purified and gamma sterilized honey can be registered as a medical product. During the healing process, the wound has to be given certain conditions such as high osmotic process, acidic pH and an adequate mechanic wound protection, all of which are achieved by applying medical honey.

Case report: A 50-year-old patient has undergone surgery for verrucous planocellular carcinoma in the parieto-occipital region. Wide excision of the tumor and periosteum has been conducted as well as osteotomy of the tabulae externae bone together with the reconstruction of defect using a rotational flap. Postsurgical course is complicated by the partial epidermal necrosis in the area of 10x15 cm, which is, following necrectomy, solely treated by the medical honey. In a month's application of honey there is a complete epithelialization of the wound. In a relatively short time from the surgery, hair starts growing in one part of the epithelialized area.

Conclusion: The positive effect of medical honey is undoubted although extensive studies are required to make a final judgement. Taking healing speed and quality into account, medical honey can go hand in hand with today's medical bandages. What used to be an alternative, now has its place in contemporary medical practice.

Keywords: medical honey, scalp tumor, chronic wound

IMPLANT-PROSTHETIC REHABILITATION OF PATIENTS WITH FREE FIBULA GRAFT

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Introduction: Implant-prosthetic rehabilitation of patients with a free fibula graft is today more the rule than the exception, as it was 20 years ago. Today, the reconstruction of the entire masticatory and stomatognathic system, after mutilating operations of patients in the orofacial region, is considered standard. Placing dental implants in the fibula osteofasciocutaneous flap (OSCF) represents a special clinical challenge in implantology because, due to the structural diversity, drilling in OSCF can be demanding, and it is often difficult to achieve the primary stability of the implant. Since patients requiring OSCF represent a therapeutically demanding group of patients, even when osseointegration of the implant is achieved, long-term satisfactory oral rehabilitation is not easy to achieve.

Material and methods: The aim of this presentation is to show the advantages and im-

portance of pre-surgical planning in patients who need medium facial reconstruction using OSCFFF. We present patients with OSCFFF in follow-up from 4 to 21 years with a presentation of the importance of interdisciplinary cooperation between maxillofacial surgeons, oral surgeons and prosthetists.

Results: In all patients after 4 - 21 years, satisfactory functionality and aesthetics of the implant reconstruction in the OSCFFF graft were observed.

Conclusion: OSCFFF represents a valuable technique for large facial reconstructions. After placement of dental implants in a jaw reconstructed with OSCFFF, the period of osseointegration sometimes needs to be extended to nine to twelve months. Vestibuloplasty is recommended before placing prostheses. Placing dental implants in OSCFFF represents a valuable solution for this group of patients.

Keywords: implants, osteofasciocutaneous fibula flap (OSCFFF), implant-prosthetic rehabilitation

APPLICATION OF NEW DENTAL BIOMATERIALS IN HORIZONTAL AUGMENTATION OF THE ALVEOLAR RIDGE IN THE POST-TRAUMATIC REGION

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Introduction: For the surgical technique of guided bone regeneration, the choice of available membranes until recently did not include an option that is mechanically strong, durable, synthetic and resorbable. The most commonly used resorbable membranes are made of collagen, with relatively low mechanical strength. In order to control better the degradation and improve the mechanical and chemical properties of collagen, new synthetic procedures have appeared that improve the properties of the collagen membrane.

To solve these problems, a new pure magnesium barrier membrane was developed for the GBR technique. The membrane is intended to function similarly to other degradable membranes, however due to its metallic structure, it provides better mechanical properties (than collagen) and has an initial shape stability. During decomposition, its metal structure turns into magnesium salts, which are then resorbed by the body.

Case report: A 25-year-old patient comes to the Department of Oral Surgery with the desire to repair partial toothlessness in the region 21-22. Clinical examination and CBCT analysis of the mentioned region showed horizontal atrophy of the alveolar ridge with insufficient width for implant placement. In the first phase, the patient underwent guided bone regeneration in a combination of autologous and xenogenic bone covered with a NOVAMag membrane and fixation screws (Botiss dental GbmH, Berlin, Germany). Patient is being monitored and no complications have been recorded.

Conclusion: After installation, the magnesium membrane separates the regenerating bone from the soft tissue, and the gradual decomposition and generation of gases prolongs the effect of the membrane. By presenting this clinical case with the application of a new generation of biomaterials for GBR, a series of clinical research in the Croatia begins, which aims to prove all the advantages of the magnesium membrane and magnesium fixation screws.

Keywords: alveolar ridge augmentation, membrane, magnesium, dentoalveolar trauma, biomaterials

ZYGOMATIC, PTERYGOID AND SUBPERIOSTAL IMPLANTS IN REHABILITATION OF EXTREMELY ATROPHIC MAXILLARY AND MANDIBULAR ALVEOLAR RIDGE

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Introduction: In cases when alveolar ridge is extremely atrophic, our only options are alternative augmentation and implantation techniques.

Case report: Sixty-year-old female patient, who has been wearing total lower and upper prosthesis for many years, has come to us wanting a fixed prosthetic solution for upper and lower jaw. She also said that she feels pain while wearing lower prosthesis. Our conclusion was that pain is caused by the pressure on n.alveolaris inferior. After clinical examination and CBCT scan, the conclusion was that the available bone volume of upper and lower alveolar ridge is not enough for implantation of conventional endosseous implants. Two zygoma implants (NORIS Medical, Israel) and three standard implants: incisal, tilted

and pterygoid (K3 Pro, Germany) were placed in upper jaw. PRF and bone augmentation with Bio-Oss (Geistlich Pharma, Switzerland) were also done. Implants were immediately loaded with titanium composite screw retained bridge that was made based on a digital impression (Medit, South Korea). Final titanium composite bridge was made after a year. Surgical procedure in lower jaw was done with 3D printed custom made subperiosteal implants (AB Dental, Israel) divided in three parts. Computer software (AB Dental, Israel) was used in planning a therapy and making a surgical guide based on the digital impression, preoperative CBCT with lower prosthesis and gutta-percha as markers and CBCT of lower prosthesis. Implants were fixed to bone with 16 monocortical screws and immediately loaded with titanium composite bridge that was made based on an analog impression due to impossibility of taking digital impression because of movable gingiva. PRF and bone augmentation with putty demineralized bone matrix (BIOFILL-H, AB Dental, Israel), were done. Final titanium composite bridge was made 10 months after the surgery.

Keywords: implants, pterygoid, zygoma, subperiosteal, titanium composite

SPLIT-CREST AUGMENTATION TECHNIQUE OF THE ALVEOLAR RIDGE IN FAVOR OF ORTHODONTIC TOOTH MOVEMENT

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Introduction: Although alveolar ridge augmentation techniques have been intensively developed primarily for implant-prosthetic rehabilitation, they can also be used in other fields of dental medicine, especially in orthodontics.

Case report: We will present a case of split-crest technique for bone augmentation of the alveolar ridge in a patient who wanted to compensate the extracted first permanent molar several years ago without placing a dental implant. It was suggested orthodontic movement of the second and third molars into the edentulous space of the first molar. Due to the long period of toothlessness, the alveolar ridge at the location of the first molar is narrowed, and in the case of forced orthodontic movement, buccal dehiscence of the bone and consequent recession would occur. The tooth movement without surgery would be questionable and slow, and the edentulous space would probably be closed only by the crown inclination of the tooth, and not by the desired bodily tooth movement. It was decided to use the split-crest technique for horizontal augmentation of the alveolar ridge and to achieve controlled molar movement, the placement an orthodontic mini-implant for a stable orthodontic anchorage. A review of the literature described Cases of successful tooth movement after split-crest osteotomy and horizontal augmentation with the autologous bone are described in the literature. The use of split-crest technique in such cases is specific because an autologous bone block taken with a trephine is used to maintain the width of the alveolar ridge between the previously separated and expanded parts of the alveolar ridge. With the autologous augmentation, the width of the alveolar ridge can be preserved long enough until achieve the desired orthodontic tooth movement is achieved.

Keywords: split-crest technique, horizontal bone augmentation, alveolar ridge, orthodontics

COMPLETE IMPLANTOPROSTHETIC REHABILITATION OF THE JAWS WITH "SHORT" IMPLANTS

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Introduction: Rehabilitation of edentulous patients with atrophy of the alveolar ridge represents surgical and prosthetic challenge for clinicians. As a result of parafunctions and tooth loose the metabolism in the bone decreases activation of osteoclasts, prostaglandins and human resorption stimulating factors leads to resorption of the alveolar ridge in the vertical and horizontal dimensions which gradually progresses to atrophy. This form of adaptation response depends on local and systemic individual factors. Quality, quantity and shape of residual ridge are local factors, while systemic factors are age, gender, etc. The causes can be mechanical, inflammatory, systemic and metabolic.

Case report: The loss of alveolar bone differs in the maxilla and mandible in a quantitative, qualitative sense indicates our approach. Due to the vertical atrophy of the bone, there is also a high insertion of the grip of the muscle in relation to the surface of the ridge, and the surface of the attached mucosa is reduced, while the mobile mucosa is hypertrophied. We correct such an unfavorable situation with vestibuloplasty in order to ensure the possibility of implantoprosthetic therapy. Numerous complex surgical techniques have been developed to increase bone volume and place dental implants. Given that the

minimally invasive approach is a postulate that should not be deviated from dental medicine, even in augmentative and resective procedures, in conditions where the alveolar ridge is atrophic and there are anatomical limitations, the use of "short implants" such as of prosthetic wearers becomes a subject of clinical interest. "Short implants" have a length of ≤ 8 mm and are primarily used in posterior edentulous areas with an atrophic alveolar ridge when the width of the alveolar ridge is sufficient for their installation. In the aforementioned presentation, we present a case of complete implant-prosthetic rehabilitation with "short" implants of the all-on-four type.

Keywords: atrophy of the jaw, short implants, vestibuloplasty

COMPUTER ASSESSMENT OF CHANGES IN THE VESTIBULAR BONE PLATE IN THE FRONTAL MAXILLA DURING IMMEDIATE IMPLANTATION WITH AND WITHOUT GRAFT MATERIALS

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Introduction: Planning and placing dental implants in the aesthetic zone is a great therapeutic challenge, especially due to the fact that patients often evaluate the overall therapeutic success based on the aesthetic result and have high aesthetic criteria and expectations. The buccal bone plate is especially prone to post-extraction changes. Immediate implantation is the preferred choice of treatment for replacing a lost tooth, and preserving the bone in the anterior maxilla and it's often combined with bone augmentation techniques. The aim was to analysis the vestibular bone plate changes via CBCT images and computer software that occur in all dimensions, in different time periods in patients in whom implants are placed immediately with, and without, bone augmentation techniques.

Materials and method: Bone changes in the vestibular bone plate were analyzed in 40 patients divided into two groups:

GROUP 1 (I1) - 20 patients who underwent immediate implantation in the anterior maxilla without augmentation

GROUP 2 (I2) - 20 patients who underwent immediate implantation with augmentation.

The following parameters are analyzed on the day of implantation, 6 and 12 months after. Horizontal dimension - The distance from the surface of the implant to the vestibular bone plate. Measured from the implant platform, starting at position 1 apically with positions of 3, 6, 9, 12 and 15 millimeters.

Vertical dimension - The dimension measured from the implant platform (position 0) to the most coronal part of the alveolar bone by measuring the loss or resorption of bone tissue from the buccally and palatally.

Bone density - measured in three positions, at the level of the platform of the implant in the middle third and apically.

Results: The analysis of changes in the vestibular bone plate showed that the greatest changes exist in patients who underwent immediate implantation without the use of augmentation techniques.

Keywords: vestibular bone plate, immediate implantation, CBCT, bone augmentation

RECONSTRUCTION OF ATROPHIC ALVEOLAR RIDGE BY ORTHOGNATHIC SURGERY, AUGMENTATION AND IMPLANTATION IN A PATIENT WITH PSEUDOPROGENIA

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Introduction: The aim of this clinical case report was to demonstrate the rehabilitation of the function and aesthetics of a patient with pseudoprognathia due to partial edentulism and an atrophic alveolar ridge by orthognathic surgery and a fixed restoration on dental implants with the use of contemporary 3D technologies.

Case report: A clinical examination of a 56-year-old female patient revealed a worn-out fixed prosthetic restoration in the area of the frontal upper teeth. Facial analysis shows a low smile line, poor visibility of the upper teeth and concave profile with fan-shaped protruding upper teeth. Analysis of a standard X-rays and CBCT showed an atrophic upper alveolar process in the anterior segment and insufficient space for the placement of dental implants. Three-dimensional cephalometric analysis defines pseudoprognathia due to retrognathism of the maxilla. The displacement plan and the preparation of surgical guides

were made by virtual 3D planning using Dolphin Imaging software and a 3D printer. Orthognathic surgery Le Fort 1 moves the maxilla forward by 4 mm and clockwise rotation downwards by 3 mm. The areas of displacement of the jaws and cracks was filled with bio-bone granules. After 4 months, three dental implants were placed, and after 7 months of osseointegration, a metal-ceramic fixed prosthesis was placed. Orthognathic surgery corrected the retrognathic position of the maxilla and create enough space for insertion of biobone to improve the volume of the maxilla in all direction for dental implants. With the new fixed prosthesis, the patient gets better stability and function. The combined treatment improved the appearance of the face and teeth in profile and emphasized the visibility of the teeth during the speech and smile, which increased the patient's self-confidence. In conclusion, well-planned orthognathic surgery can greatly contribute to the reconstruction of the atrophic alveolar ridge in retrognathic maxilla and provide enough space for the placement of dental implants, which achieves a better harmony of the position of the teeth and face.

Keywords: alveolar ridge atrophy, orthognathic surgery, pseudoprognathia, 3D virtual planning for the orthognathic surgery

PROSTHETIC REHABILITATION OF PATIENTS WITH SEVERE BONE LOSS

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Introduction: Large jaw defects can be caused by large cysts, various tumors, and trauma to the maxillofacial region. Patients with large jaw defects often remain partially or completely toothless and need prosthetic rehabilitation. Prosthetic rehabilitation with conventional partial and total prostheses is not adequate due to lack of bone tissue and poor prosthesis retention. For this reason, dental prosthetics specialists must consider alternative methods of prosthetic rehabilitation such as implant prosthetic therapy, cover and obturator prostheses. The retention of the prosthesis itself is also important, so different retention systems are used, such as: clasp systems, bars and telescopic crowns.

Case report: A 52-year-old patient comes to the office for prosthetic reconstruction of the oroantral communication, which occurred as a result of a malignant disease in the area of the hard palate. The temporary restoration included a palatal acrylate plate that separated oral from the nasal cavity. Due to the fact that the patient has completely toothed jaws, as a prosthetic solution we chose to make two telescopic crowns on teeth 16 and 26, because only those two teeth were repaired with fillings. As a mobile part of the work that is retained on teeth 16 and 26, an obturator prosthesis with a metal base was made for maximum reduction.

Keywords: dental implants, overdenture, palatal obturator

MRONJ CALCULATOR — TOOL FOR MRONJ RISK ASSESSMENT DURING DENTAL PROCEDURES

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Introduction: Use of antiresorptive drugs (ARD) and dental procedures are directly connected with development of MRONJ. Fear from MRONJ among dentists and patients avoiding dental procedures or decline taking ARD place the patients in higher risk for MRONJ and skeletally related events. The aim of the presentation is to present easy to use tool that can help general dentists and dental specialists to assess the risk of MRONJ during dental procedures, execute dental treatment in most predictable manner or to refer the patient in order to minimize the risk for MRONJ treating patients on antiresorptive drugs (ARD).

Material and methods: Reliability of MRONJ calculator was evaluated by comparing the extent of MRONJ in patients in which dental procedures were performed without using the MRONJ calculator, group 1 (G1) and patients in which dental procedures were performed with the use of MRONJ calculator, group 2 (G2). Patients were followed up for the period of one year with examinations on 14 days, one month, three months, six months and one year after treatment completion. Presence or absence of MRONJ was evaluated during follow up examinations. The results were statistically analyzed by logistic regression.

Results: Eighty three patients were included in G1 and 55 in G2 group. Extent of

MRONJ was 19 in G1 and 8 in G2 group. Statistical analysis showed positive correlation between use of MRONJ calculator and lower number of MRONJ in G2 during dental treatment in patients taking ARD.

Conclusion: Use of MRONJ calculator can be easy to use tool in the hands of general dentists and dental specialist for assessing the risk of developing MRONJ during performing dental procedures. At the same time, it gives useful recommendations how to perform particular dental treatment in order to minimize local factors for MRONJ and improve quality of life of patients on ARD.

Keywords: MRONJ, dental procedures, calculator

LONG TERM FOLLOW UP OF BONE REGENERATION PERFORMED WITH KHOURY TECHNIQUE – CASE PRESENTATION

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Aim: The aim is case presentation with a long term follow up after implant prosthetic therapy aimed to replace a missing tooth with a previous bone regeneration performed with the Khoury technique.

Materials and methods: Patient, female, smoker, presented with a bone defect which developed as a consequence of a vertical root fracture. A staged approach was chosen because of extensive bone defect. The therapy was initiated with bone regeneration treatment, six months after implant was placed in the region of a missing tooth. The implant-prosthetic rehabilitation was completed with a fabrication of a screw retained ceramic-fused to metal crown. Regular control examination and maintenance therapy was scheduled every six months afterwards.

Results: During the 8 year follow up period, the regenerated bone volume, level of marginal bone and peri-implant mucosa remained stable.

Conclusion: The Khoury technique was used to perform a predictable bone regeneration of an extensive bone defect. Regular maintenance therapy resulted in a stable and unchanged treatment outcome over the follow up period of 8 years.

Keywords: bone regeneration, Khoury technique, implant-prosthetic rehabilitation

Poster presentations

CASE REPORT OF A PATIENT WITH A PENETRATING NECK INJURY CAUSED BY THE APPLICATION OF AN ORTHODONTIC MINI SCREW

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Introduction: Orthodontic mini-screws are essential in the implementation of orthodontic therapy. According to the available literature, it is a fast and effective therapeutic procedure that nevertheless carries certain complications. The goal of orthodontic treatment is to achieve proper and high-quality anchorage using orthodontic mini screws. The concept of skeletal anchorage in orthodontic therapy dates back to the eighties of the last century. Due to various limitations of external anchorage devices, their popularity is decreasing compared to mini screws, which are now more and more common in various orthodontic indications. The literature describes the insertion and removal of miniscrews as simpler procedures. The success of their execution ranges from 80 to 95%. The most common complication of mini screw insertion is damage to the tooth root. Among other non-life-threatening complications, the literature mentions screw fractures as well as inflammatory processes of soft tissue, while life-threatening complications include accidental ingestion or inhalation of a mini-screw as well as penetrating injury to the soft tissue of the pharynx or neck.

Case report: In this presentation, we present the case of a patient who was attempted to insert an orthodontic miniscrew into the retromolar area. During the insertion procedure, a penetrating neck injury occurred in such a way that the screw perforated the mucous membrane of the retromolar area and “slipped”, i.e. penetrated down the lingual wall of the lower jaw into the deep structures of the neck. The prescribing orthodontist then re-

ferred the patient to a maxillofacial surgeon who, after a clinical examination and MSCT diagnosis, set an indication for extraoral extraction of the miniscrew under general endotracheal anesthesia. After the successful extraction, the postoperative course was without any surgical complications. In conclusion, we emphasize that the use of orthodontic miniscrews can cause life-threatening complications that, in our opinion, are insufficiently emphasized in today's literature.

Keywords: orthodontic mini screw, insertion, complications

EPIDEMIOLOGY OF OROFACIAL CLEFTS AND NEW PERSPECTIVES ON ETIOLOGIC FACTORS

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Introduction: Cleft lip and palate are the most common maxillofacial malformations. Despite advances in science and medicine, research on the etiology of cleft lip and palate has not fully elucidated all possible risk factors. Today, most orofacial clefts are thought to be caused by the interaction of hereditary and external factors (medications, smoking, harmful habits). Few studies have investigated the effects of complications during pregnancy on the development of orofacial clefts and related anomalies.

Materials and methods: This is a prospective and retrospective study that included children with cleft lip and/or palate treated at the National Center of the Ministry of Health of the Republic of Croatia for Surgical Treatment of Maxillofacial Malformations from January 2020 to July 2022. The control group consisted of children with cleft lip and/or palate whose mothers had no complications during their pregnancy. Epidemiological and clinical data on the type, extent, and form of cleft formation and the occurrence of additional anomalies were collected in the clinical database and in questionnaires for parents.

Results: Based on the data collected and analyzed so far, we found a significant difference between the studied groups.

Conclusion: Various complications during pregnancy may influence the severity of orofacial cleft formation and the occurrence of additional malformations.

Keywords: orofacial clefts, etiology, additional anomalies, pregnancy complications

DOES THE PRESENCE OF PERIAPICAL INFECTION INFLUENCE THE OUTCOME OF IMPLANTS PLACED WITH THE SOCKET SHIELD TECHNIQUE?

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Purpose: Alveolar ridge resorption following tooth extraction in the aesthetic zone influences the outcome of implant-prosthetic treatment. Several techniques were introduced to overcome the resorption of the buccal lamina, but none is entirely reliable. The socket shield technique (SST) is a natural way to prevent buccal lamina resorption and can be used with or without immediate implant placement. The presence of periapical infection compromises the successful outcome of implants placed by SST. This study aimed to compare the outcome of implants placed with SST to healthy sockets and sockets with periapical lesions.

Materials and methods: A total of 21 systemically healthy patients with at least one Ankylos Dentsply Sirona Implant placed with SST were enrolled in this study. Patients were divided into two groups (G), in G1 the implants were placed into a healthy socket (N=10), whereas in G2 they were placed into sockets with periapical lesions (N=11). Implant success rate and implant survival in the short term were evaluated. Additionally, achievement of primary stability, osteointegration after three months, early and late complications, resorption of the buccal bone, and papilla index were assessed.

Results: The overall success rate was high in both groups, 90%, and 100% respectively. The survival rate was high, and no implant loss was observed during the 3-year follow-up. Primary stability was achieved in all 28 implants in both groups; moreover, there were no early complications. Late complications were observed in 30% of G1 and 27% of G2. Resorption of the mesial and distal portion of the buccal bone was recorded in 10% of the cases in G1 as opposed to 18% in G2. Papilla index was normal in 90% of cases across both groups.

Conclusion: Our findings suggest a comparable outcome and clinical survival of implants even in the presence of periapical lesions. Moreover, similar rates of osteointegration and primary stability were observed. Therefore, we believe a periapical lesion should not be a

direct contraindication for placing implants with SST.

Keywords: implantology, socket shield technique, esthetic dentistry

INTRAORAL MARGINAL ZONE LYMPHOMA

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Introduction: Marginal zone lymphomas are a diverse group of indolent non-Hodgkin's lymphomas that share a similar immunophenotype, but have specific diagnostic criteria and different genetic features, clinical behavior, and therapeutic implications.

Case report: A 56-year-old patient comes for an examination due to an intraoral change in the region 35 of the left side of the mandible which appeared a year ago when she had a toothache, and the oral surgeon made an incision through the vestibule of the oral cavity. After the procedure, she noticed a palpable thickening of the submandibular left, which would occasionally swell, and she had difficulty opening her mouth and chewing food. On clinical examination, intraoral swelling and left vestibular edema are visible; palpation painless, soft tissue change at the level of the submandibular gland, the rest of the mucous membrane looks normal. The MSCT findings show a well-limited submandibular left, soft tissue formation in the ventral part and is followed along the inner and lower edge of the mandible to the angulus, in regions I, II and III slightly enlarged lymph nodes. Hyperplasia of atypical lymphocytes is determined by cytopuncture, and immunophenotyping of the punctate is done. The patient undergoes an incisional biopsy through the buccal mucosa. Histologic section of tumor tissues showed fragmented lymph node with lymphoid proliferation of pale cytoplasm, centocyte-like lymphocytes surrounding the reactive follicles and expanding into interfollicular areas is present although they mainly build nodular pattern. Immunohistochemistry staining with CD23 maker revealed follicle remains in areas with diffuse appearance.

Conclusion: The occurrence of non-Hodgkin's lymphoma of the oral region is very rare, but the first signs of intraoral lymphoma can appear as an infection in 50% of cases, and oral manifestations of the disease can be the first and only sign of the disease.

Keywords: oral cavity, non-Hodgkin's lymphoma, marginal zone lymphoma, oral manifestations

CENTRAL RETINAL VEIN OCCLUSION AS A COMPLICATION OF INFLAMMATED RADICULAR MAXILLAR CYST - CASE REPORT

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A 47-year-old patient reported to the Eye clinic because of right eye visual problems. She was diagnosed with central retinal vein occlusion, and was referred for further diagnostic treatment, which revealed the existence of an inflamed cystic formation in the right maxillary sinus. The patient was admitted to the Department of Maxillofacial and Oral Surgery of University Hospital Centre Osijek for surgical treatment, extirpation of the cystic formation, radical exploration of the maxillary sinus and reconstruction of soft tissues with the use of PRGF fibrin membrane, which was performed under general anesthesia. After the procedure she was diagnosed with an oroantral fistula in the retromolar region, and plastic surgery of the fistula was performed in the second act. After both operations and healing of the inflammation, the symptoms of central retinal vein occlusion disappeared, and her visual acuity returned. Chronic sinus infections are relatively rare, and it is estimated that a significant number of them are of odontogenic origin. Due to the progression of an odontogenic infection of the maxillary sinus in the localized close orbital region, the occurrence of central retinal vein occlusion is also possible as a complication.

Keywords: central retinal vein occlusion, radicular cyst, maxillary sinus, Caldwell-Luc antrostomy

COMPARISON OF COMPUTERIZED TOMOGRAPHY AND ULTRASOUND IN THE ASSESSMENT OF TUMOR INVASION OF ARTERIES IN PATIENTS WITH MALIGNANT TUMORS OF THE HEAD AND NECK

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Introduction: Malignant tumors of the head and neck are heterogeneous group of tumors. Determining the degree of invasion and the extent of the disease is necessary for further treatment. The spread of metastases beyond the metastatic lymph nodes represents a significant prognostic factor. Invasion of an altered lymph node in the wall of an artery is rare.

The radiological methods for assessing tumor invasion of artery walls are CT and MRI. Ultrasound assessment of invasion of the artery wall was used previously, but the method was abandoned. CT assessment is insufficiently reliable. Vessel wall invasion is considered if the tumor has invaded more than 50 % of the artery circumference or when they are in near contact within more than 30 mm. Other parameters are reduction of fatty tissue between the artery and the metastatic lymph node or compression of the artery. Ultrasound monitoring of wall mobility has not been investigated yet. Aims of this study is to determine the mobility of the artery wall close to metastatic lymph node using ultrasound and to determine the correlation of CT and US in the assessment of artery invasion.

Materials and methods: The study included 16 patients with malignant disease of head and neck who underwent a CT scan on which metastatic lymph nodes and infiltration of the artery wall were described. Metastatic lymph nodes were confirmed cytologically and also using ultrasound which monitored the mobility of the wall of the infiltrated artery.

Results: The infiltrated part of the artery wall described by CT has shown decreased mobility using US compared to the non-infiltrated part of the wall. Comparison of CT and US assessment of vessel wall invasion showed strong correlation.

Conclusion: US assessment of motility is as valuable in the assessment of vessel wall invasion as CT standardized parameters.

Keywords: ultrasound, carotid artery, wall mobility, tumor invasion

LONG-TERM DENOSUMAB THERAPY AS TREATMENT OPTION OF PRIMARY CHRONIC OSTEOMYELITIS OF THE JAW

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Introduction: Primary chronic osteomyelitis of the jaw is a rare chronic disease of unknown etiology. It is characterized by recurrent swelling of the cheek, trismus, and severe jaw pain with the absence of fistula formation, suppuration and sequestration. Due to the lack of treatment options, it represents a challenge for clinicians. Surgical approach has been suggested as well as conservative methods but with no significant long-term effect. Although recent studies with bisphosphonates have shown promising results in treatment, due to the unfavorable pharmacodynamic characteristics, an alternative therapy with denosumab was attempted.

Case report: 59-year-old and 66-year-old patient with diagnosed primary chronic osteomyelitis after unsuccessful conservative therapy (antibiotics, NSAIDs, corticosteroids, hyperbaric oxygenation) started denosumab therapy. Through 18 months 60 mg of denosumab (Prolia[®] 60 mg, Amgen Europe B. V., Breda, Netherlands) was administered three times. Although the patients had a reduction in the intensity of pain with each subsequent application of denosumab but with less success than the first administration of denosumab. This case report shows the benefits of denosumab in pain treatment with patients suffering from primary chronic osteomyelitis and the significant lack of long-term use due to poorer action after repeated use.

Keywords: primary chronic osteomyelitis, jaw, denosumab

OBJECTIVE ASSESSMENT OF SKIN QUALITY AFTER RECONSTRUCTION OF FACIAL SKIN DEFECTS WITH SKIN AUTOGRAFTS

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Introduction: Although the clinical advantages and disadvantages of skin autografts are well established, there are still uncertainties regarding their skin quality after the completion of the remodeling phase. Therefore, the aim of this study was to objectively evaluate skin quality after reconstruction with full-thickness skin autografts (FTSG) and split-thickness skin autografts (STSG) at least one year after the procedure.

Materials and methods: The study included 20 patients reconstructed with STSGs and 20 patients reconstructed with FTSGs. The donor site of all FTSGs was the supraclavicular region, while the donor site of STSGs was the upper leg. Objective assessment of skin quality was performed using MP6 (Courage+Khazaka) non-invasive probes that measure the amount of melanin, erythema, hydration, sebum, friction and transepidermal water loss (TEWL). The parameters obtained at the reconstructed site were compared with the same site on the healthy contralateral side of the face.

Results: Compared to the healthy side, FTSGs didn't show significant differences in the amount of melanin (76.6 ± 27.3 vs 72.7 ± 28.9 AU; $p=0.659$), hydration (27.9 ± 13.1 vs 34.1 ± 13.6 AU; $p=0.157$) and friction ($82.0(75.0-132.0)$ vs $122.0(91.0-179.0)$ AU; $p=0.069$). However, FTSGs showed a significantly higher amount of erythema ($362(285-404)$ vs $250(187-291)$ AU; $p<0.001$) and TEWL ($13.0(12.0-15.2)$ vs $10.7(9.8-13.0)$ g/m²/h; $p=0.004$), and significantly lower amounts of sebum ($18.0(13.0-27.5)$ vs $27.0(24.0-35.0)$ AU; $p=0.002$). Furthermore, compared to the healthy side, STSGs showed significantly higher levels of melanin (121.1 ± 27.4 vs 89.1 ± 27.4 AU; $p<0.001$), erythema ($455(271-398)$ vs $369(181-291)$ AU; $p<0.001$) and TEWL ($13.0(11.5-14.0)$ vs $10.8(10.0-11.6)$ g/m²/h; $p<0.001$), while hydration (20.3 ± 6.8 vs 36.9 ± 8.7 AU; $p<0.001$), sebum ($16.0(7.0-26.0)$ vs $49.0(41.0-72.0)$ AU; $p<0.001$) and friction ($73.0(58.0-118.0)$ vs $121.0(110.0-204.5)$ AU; $p<0.001$) were significantly lower.

Conclusion: The results of this study showed that after the remodeling phase, FTSGs have objectively better skin quality than STSGs. Also, these results imply that FTSGs should, whenever possible, be preferred over STSGs in the reconstruction of facial skin defects.

Keywords: facial skin defects, full-thickness skin graft, split-thickness skin graft, transepidermal water loss

TREATMENT OF DENTIGEROUS CYST BY DECOMPRESSION METHOD USING A MODIFIED HEPATOBILIARY T-DRAIN

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Introduction: Decompression is one of the already known treatment modalities for odontogenic cystic changes. Many types of decompression tubes have been described in the literature, the common goal of which is to reduce the size of the cystic lesion by lowering the intraluminal pressure. However, complications such as insertion or loss of the tube, irritation, and hypertrophy of the oral mucosa are common.

Case report: We present our modification of the T-drain, commonly used for hepatobiliary drainage, into a decompression tube to treat a mandibular follicular cyst in a nine-year-old girl. In addition to achieving a complete regression of the change, the applied device was comfortable to wear, practical for irrigation of the cystic cavity, did not cause inflammation or irritation of the mucosa, and had adequate retention.

Keywords: dentigerous cyst, decompression, T-drain, children, oral surgery

REGENERATIVE TREATMENT OF LATERAL RADICAL CYST OF THE UPPER PREMOLAR WITH BIPHASIC CALCIUM PHOSPHATE

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Introduction: The objective was to perform a regenerative periodontal surgery on teeth 24 and 25 with enucleation of the radicular cyst in order to achieve healing of the tooth supporting tissues.

Case report: A 39-year-old patient was referred to the Department of Periodontology by a specialist in Endodontics and Restorative Dentistry for teeth 24 and 25, which had pre-

viously been adequately treated endodontically. Since revision was excluded, we decided to do a regenerative surgery on teeth 24 and 25 with enucleation of the radicular cyst. Prior to surgery, the patient underwent non-surgical periodontal therapy for generalized periodontitis, stage II, grade B, which included a detailed medical history, measurement of periodontal indices, as well as proper oral hygiene instructions. After 6 weeks, regenerative surgery was performed in the region of the upper premolars in the second quadrant. The flap design included a vertical incision mesial to the operative field to facilitate access to cyst enucleation. There was no indication of a vertical fracture of the tooth and thus the reason for the extraction. Given the significant volume of the bone defect, we decided on to use biphasic calcium phosphate as a bone substitute material. The surgical area is closed with 5-0 and 6-0 monofilament polypropylene suture. After 2 weeks, healing was as expected, and sutures were removed. The recall appointment after 3 and 6 months demonstrated normal postoperative course without any complications, which we confirmed by clinical examination, re-measurement of periodontal indices and radiographic control. With interdisciplinary collaboration and a properly established diagnosis and appropriate treatment modality, it is possible to save teeth from unnecessary extraction and achieve healing of the tooth supporting tissues. In order to monitor and control the outcome of the therapy, it is necessary to enroll the patient in supportive periodontal therapy.

Keywords: lateral radicular cyst, biphasic calcium phosphate, regenerative periodontal surgery, non-surgical periodontal therapy, supportive periodontal therapy

COMPUTER-GENERATED IMPLANT PLACEMENT IN THE AESTHETIC ZONE THREE MONTHS AFTER "STICKY BONE" AUGMENTATION

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Introduction: Guided bone and tissue regeneration is one of the most demanding surgical procedures in the aesthetic zone. Today the possibilities are various and depend on the preferences of a surgeon. They also depend on the patient's demands regarding the time, invasiveness, the price of the procedure and the given aesthetic results. With the development of artificial materials to compensate the bone in combination with biological preparations which are obtained from blood plasma, the process of guided bone regeneration has been significantly accelerated and has shown considerable quality of the given bone.

Case report: The study shows a case of an implant-prosthetic procedure of a female patient who lost tooth number 11 due to a recurrence of radicular cyst. Since the patient was of a younger age and the tooth was lost in the aesthetic area, the patient wished to replace the lost tooth exclusively by a dental implant.

Compensation of a bone defect after enucleation of a cyst and extraction of a tooth was done by xenogenic bone implant (PURGO®) in the combination with centrifugal autologous blood (S-PRF®) and the so-called 'sticky bone' was done. Three months after the augmentation procedure, clinical and radiological bone and soft tissue assessment was done (CBCT) as well as planning and the protocol for computer-guided M-guide® insertion of the dental implant. The implant 3.3 × 11.5 (V3 MIS B+) was inserted. Intraoperatively, due to the thickening of soft tissue it was augmented in vestibular position by A-PRF i Mucograft®. Also, it was decided to postpone burdening the implant. Temporary prosthetic supply was done by acrylic Maryland bridge.

Conclusion: The combination of xenogenic PURGO® material with the so-called 'sticky bone', a preparation made from centrifugal autologous blood (S-PRF®) had been done only three months after the augmentative procedure and an extraordinary quality and quantity of a tooth was obtained.

Keywords: guided tissue regeneration, xenogenic material, computer-guided insertion of the implant