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Front page contains a photo of St.Apolonija, the patroness of dentists (statue is located in Vilnius, St.Peter and Povilas Church).

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**“BALTIC COMPASS”
OULU – KAUNAS**

**2nd INTERNATIONAL CONGRESS OF ODONTOLOGY AND MAXILLOFACIAL SURGERY
KAUNAS, LITHUANIA, 9–10 JUNE 2006**

**2-ASIS ODONTOLOGŲ IR VEIDO BEI ŽANDIKAULIŲ CHIRURGŲ TARPTAUTINIS KONGRESAS
2006 BIRŽELIO 9–10, KAUNAS, LIETUVA**

International Project “Baltic Compass” Oulu - Kaunas was created to develop practical, theoretical and scientific fields in Oral and Maxillofacial rehabilitation. The idea of this project came through successful collaboration between scientists of Kaunas and Oulu Universities. This project was called “Compass”, expecting that it will show the way for fruitful communication and better understanding in between the specialist of Baltic region. Congresses, Conferences and smaller specialized meetings are organized periodically.

Tarptautinis projektas “Baltic Compass” Oulu - Kaunas buvo įkurtas, siekiant vystyti praktinius, teorinius ir mokslinius darbus, susijusius su burnos ir veido - žandikaulių sričių rekonstrukcijomis. Projekto idėja atsirado dėka sėkmingo tarpusavio bendradarbiavimo tarp Kauno ir Oulu universitetų mokslininkų. Projektas pavadintas “Baltic Compass”, tikintis naudingo bendradarbiavimo ir geresnio tarpusavio supratimo tarp Baltijos regiono specialistų. Suvažiavimai, konferencijos ir specializuoti susitikimai organizuojami nuolat.

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PROGRAMA PROGRAMME

PENKTADIENIS, BIRŽELIO 9, Pagrindinė salė
FRIDAY, JUNE 9 Main hall

- 9.00 – 9.30 Atidarymo ceremonija**
Opening ceremony
- Ortodontija**
Orthodontics
- Chairman A. Šidlauskas*
Co-chairman P. Pirttiniemi
- 1# 9.30 – 9.45 Apatinių trečiųjų krūminių dantų įtaka apatinių kandžių susigrūdimui**
The influence of lower third molars on the crowding of lower incisors
G. Trakinienė, A. Šidlauskas, R. Damušienė (Lithuania)
- 2# 9.45 – 10.00 Retinuotų iltinių dantų chirurginio – ortodontinio gydymo problemos**
Problems related to surgical – orthodontic treatment of impacted canines
D. Smailienė, A. Šidlauskas, E. Zasčiurinskienė (Lithuania)
- 3# 10.00 – 10.15 Pirmos eilės linkių ortodontinės vielos lanke panaudojimas koreguojant netaisyklingą horizontalią moliarų padėtį**
First Order Bends for Correcting Horizontal Molar Malposition
N. E. Strobl, A. G. Crismani, A. G. Celar, H. P. Bantleon (Austria)
- 4# 10.15 – 10.30 Ortodontinių anomalijų paplitimas Lietuvoje**
Prevalence of malocclusion in Lithuania
K. Lopatienė (Lithuania)
- 10.30 – 10.45 Pertrauka**
Break
- 5# 10.45 – 11.00 Implantų panaudojimas ortodontiniais tikslais**
Application of implants for orthodontic purposes
G. Jankauskas, B. Labanauskaitė, A. Vasiliauskas, N. Haffar (Lithuania)
- 6# 11.00 – 11.15 Pagalbinis ortodontinis gydymas**
Adjunctive orthodontic treatment in interdisciplinary therapy
A. Gaidytė (Lithuania)
- 7# 11.15 – 11.30 Atokieji ankstyvo gydymo distaliniu išorinio tempimo aparatu rezultatai**
Long-term effects of early orthopedic headgear
P. Pirttiniemi (Finland)
- 8# 11.30 – 11.45 Gomurinių implantų apkrovimas praėjus 1 savaitei po įsodinimo. Klinikinis įvertinimas naudojant rezonansinio dažnio analizę**
Palatal implants loaded one week after placement. A clinical evaluation by resonance frequency analysis
A. G. Crismani, T. Bernhart, K. Schwarz, A. G. Celar, H. P. Bantleon, G. Watzek (Austria)

- 9# 11.45 – 12.45 **Tarpcentrinis lūpos ir gomurio nesuaugimų gydymo rezultatų palyginimas**
Intercentre comparison of treatment results of cleft lip and palate
J. Lilja (Sweden)
- Implantologija**
Implantology
- Chairman** G. Juodžbalys
Co-chairman L. Huys
- 10# 12.45 – 13.30 **Alveolinės distrakcijos efektyvumo įvertinimas**
Evaluation of effectiveness of Alveolar Distraction
N. Saulačių (Switzerland)
- 13.30 – 14.30 **Pietūs**
Lunch
- 11# 14.30 – 15.00 **Implantų estetikos planavimas, išsaugant kietuosius ir minkštuosius audinius**
Predictable Implant Aesthetics through Preservation of Hard and Soft Tissues
L. Vahtra (Estija)
- 12# 15.00 – 15.15 **Dalinai bedančių sergančių periodontitu implantavimo ypatumai ir rizika**
Implant surgery and risks for partially edentulous patients with periodontal disease
A. Puišys, I. Pacauskienė (Lithuania)
- 13# 15.15 – 15.30 **Sinuso dugno pakėlimo operacija naudojant kalcio sulfato granules: histologinis ir histomorfometrinis įvertinimas**
Sinus elevation grafted with calcium sulfate beads: histologic and histomorphometric evaluation
G. Pecora, M. Bonelli, R. Ceccarelli, R. Grassi (Italy)
- 14# 15.30 – 15.45 **Vainikėlio ant implanto ir atitinkamo danties simetrija: nuo implantacijos planavimo iki estetinio rezultato įvertinimo**
Implant supported restoration and reference tooth symmetry: from planning to esthetic result evaluation
G. Juodžbalys (Lithuania)
- 15# 15.45 – 16.05 **Implantai priekinių dantų srityje**
Implants in anterior maxilla
A. Gheorghiu, (Germany)
- 16.05 – 16.20 **Pertrauka**
Break
- 16# 16.20 – 16.35 **Prisukamos-cementuojamos konstrukcijos ant implantų**
Screw-cemented retained fixed prostheses on implants
T. Linkevičius (Lithuania)
- 17# 16.35 – 16.55 **Ką rinktis: progresuojančio generalizuoto periodontito gydymą ar dantų implantaciją?**
What to choose: treatment of progressive generalized periodontitis or dental implants?
G. Juodžbalys (Lithuania)
- 18# 16.55 – 17.15 **Vienmomentiniai implantai ar transplantai: ar reikalinga papildoma pagalba?**
Immediate Implants or Transplants: Any Extra Help Necessary?
L. Huys (Belgium)
- 19# 17.15 – 17.30 **Bikortikalinė implantacija apatinio žandikaulio krūminių dantų srityje**
Bicortical implantation in the mandibular molar area
D. Karpavičius (Lithuania)

- 20# 17.30 – 17.45 **Alveolinės ataugos vertikali ir horizontali rekonstrukcija prieš implantaciją**
Vertical and horizontal ridge reconstruction before implant surgery
S. Grybauskas (Lithuania)
- 21# 17.45 – 18.00 **Sinuso apatinės sienos pakėlimas, naudojant osteotomus, esant vertikaliems viršutinio žandikaulio distalinės dalies alveolinio kaulo defektams. Rezultatai**
Sinus lifting technique in vertical bone defects in the posterior maxilla with osteotomes
D. Razukevičius, R. Kubilius (Lithuania)

19.00 **ŠVENTINIS BANKETAS RESTORANE “BAJORKIEMIS”**

“Bajorkiemis” yra įžymus restoranas nuostabioje Kauno marių pakrantėje. Pateikiami geriausi lietuviški tradiciniai patiekalai. Programoje - gera muzika, linksmybės ir šokiai, saulėlydis prie Kauno marių bei šventinis fejerverkas. Rekomenduojama laisvalaikio apranga.

GALA BANQUET AT RESTAURANT “BAJORKIEMIS”

“Bajorkiemis” is the famous restaurant in the marvelous place on the shore of Kaunas Sea. It cherish the very best of traditional Lithuanian cuisine. This event will offer you a great opportunity to enjoy musical entertainment, nice food and relaxing atmosphere. Casual clouthing recommended.

ŠEŠTADIENIS, BIRŽELIO 10, Pagrindinė salė
SATURDAY, JUNE 10 Main hall

Kariesologija, Endodontija, Periodontologija
Cariology, Endodontics, Periodontology

Chairman V. Mačiulskienė
Co-chairmans T. Tervonen
N. Basevičienė

- 22# 9.00- 9.45 **Restauracijų pasirinkimas, siekiant optimalios estetikos**
Restorative options for optimal esthetics
W. Remington (USA)
- 23# 9.45 - 10.15 **Nauja kompozicinių restauracijų spalvos parinkimo ir sluoksniavimo koncepcija**
New concept of shade selection and layering technique of direct composite restorations
V. Vilkinis (Lithuania)
- 24# 10.15 – 10.30 **Veiksniai, įtakoiantys vaikų, sergančių I tipo cukriniu diabetu, dantų karieso aktyvumą**
Impact of different factors on caries activity in children with Type I diabetes mellitus
J. Siudikienė, V. Mačiulskienė (Lithuania)
- 25# 10.30 – 10.45 **Pacientų, sergančių cukriniu diabetu, periodonto susirgimai**
Periodontal disease in diabetic patients
T. Tervonen (Finland)
- 10.45 – 11.15 **Pertrauka**
Break
- 26# 11.15 – 11.45 **Pastų, su įvairia fluoridų koncentracija, efektyvumas apsaugant dantis nuo karieso**
The anti-caries efficacy of different fluoride compounds in dentifrices
J. Iracki (Poland)
- 27# 11.45 – 12.00 **Diagnostiniai dantų karieso ir dantų fluorozės ypatumai**
Diagnostic aspects of dental caries and dental fluorosis
V. Mačiulskienė (Lithuania)

- 28# 12.00 – 12.15 **Nekariozinės kilmės emalio dėmių paplitimas ir galimi rizikos veiksniai tarp jaunų Minsko gyventojų**
Diffuse enamel opacities and their possible risk factors in young people in Minsk
O. A. Kozel (Belarus)
- 29# 12.15 – 13.00 **Antibakterinės adhezyvų ir ertmės dezinfektantų savybės**
Antibacterial properties on adhesives and cavity disinfectants
G. Schmalz (Germany)
- 30# 13.00 – 13.15 **Viršūninis periodontitas su išorine fistule**
Apical periodontitis with the extraoral sinus tract
R. Rastėnienė, J. Rimkuvienė, V. Pečiulienė (Lithuania)
- 31# 13.15 – 13.30 **Dantų šaknų rezorbcijos**
Dental root resorptions
E. Kelbauskas, G. Lodienė, N. Kelbauskienė (Lithuania)
- 13.30 – 14.30 **Pietūs**
Lunch
- 32# 14.30 – 14.45 **Klinikinis vienpakopės ir dviejų pakopų savaiminio išdėtinimo sistemų įvertinimas per 18 mėnesių**
Clinical evaluation of one- and two-step self-etching adhesive systems at 18 months
S. Khrumchenko (Belarus)
- 33# 14.45 – 15.00 **Baltarusijos gyventojų periodonto būklė ir gydymo poreikis**
Periodontal status and treatment needs among population in Republic of Belarus
L. Kazeko (Belarus)
- 34# 15.00 – 15.15 **Homotoksikologija odontologijoje. Moderni homeopatinė terapija**
Homotoxicology in odontology. Modern homeopathic therapy
J. Žilinskas (Lithuania)
- 35# 15.15 – 15.30 **Xerostomija ir jos įtaka burnos ertmės sveikatai**
Xerostomy and its impact on oral health
Ž. Guobis, N. Basevičienė (Lithuania)

Vaikų odontologija
Pediatric dentistry

Chairman J. Narbutaitė
Co-chairman E. Slabšinskienė

- 36# 15.30 – 15.45 **Apydančio ligos paauglystėje**
Periodontal diseases in adolescence
E. Bendoraitienė, S. Milčiuvienė, V. Vaitkevičienė, J. Narbutaitė, I. Vasiliauskienė, E. Slabšinskienė, M. Žemaitienė (Lithuania)
- 37# 15.45 – 16.00 **Nėščių moterų burnos būklė ir dantų išduonies profilaktikos galimybės**
Oral health status and possibilities of dental caries prevention among pregnant woman
I. Vasiliauskienė, S. Milčiuvienė, E. Slabšinskienė, J. Narbutaitė, E. Bendoraitienė, V. Vaitkevičienė, (Lithuania)

16.00 – 16.30 **Pertrauka**
Break

- 38# 16.30 – 16.45 **Ankstyvojo dantų ėduonies etiopatogenetinių veiksnių paplitimo ir intensyvumo analizė**
Early childhood caries: analysis of risk factors, prevalence and severity
 E. Slabšinskienė, S. Milčiuvienė (Lithuania)

Dantų ir žandikaulių ortopedija
Prosthetics

Chairman A. Gleiznys
Co-chairman G. Žekonis

- 39# 16.45 – 17.00 **Aerolio formavimosi ir plitimo charakteristika odontologinių procedūrų metu**
Aerosol formation and spreading characteristics during odontological procedures
 J. Junevičius, A. Šurna (Lithuania)

- 40# 17.00 – 17.15 **Bedančių žmonių medikobiologinių, psichosocialinių ir ekonominių reabilitavimo argumentų optimizavimas**
Optimization of medico-biological, psycho-social, and economical rehabilitation arguments of toothless person
 D. Dambrauskienė, A. Gleiznys (Lithuania)

- 41# 17.15 – 17.30 **Burnos ertmės kognityvinės funkcijos samprata**
The conception of the cognitive function of the oral cavity
 P. Uginčius, A. Šurna (Lithuania)

ŠEŠTADIENIS, BIRŽELIO 10, A salė
SATURDAY, JUNE 10, A hall

Veido ir žandikaulių chirurgija
Maxillofacial and oral surgery

Chairman A. Raustia
Co-chairman R. Kubilius

- 42# 9.00 - 9.30 **Smilkinio apatinio žandikaulio sąryšis ir sąkandis**
Temporomandibular joint (TMJ) and occlusion
 A. Raustia (Finland)

- 43# 9.30 - 9.45 **Dalinės eminektomijos taikymo smilkininio apatinio žandikaulio sąnario artrotomijų metu atokieji rezultatai**
Long – term results of partial eminectomy in temporomandibular joint arthrotomies
 S. Bojarskas, G. Sabalys (Lithuania)

- 44# 9.45 – 10.00 **Odontogeninių uždegimų komplikacijos: nekrotizuojantys kaklo fasciitai ir tarpuplaučio uždegimai**
Complications of odontogenic inflammation: necrotizing cervical fasciitis and mediastinitis
 J. Povilaitytė, J. Narbutas (Lithuania)

- 45# 10.00 – 10.15 **Apatinio žandikaulio sąnarinės ataugos lūžimų chirurginis gydymas**
Surgical treatment of condyle fractures
 D. Sakavičius, A. Lukošius, S. Bojarskas, R. Kubilius (Lithuania)

- 46# 10.15 – 10.30 **Veido miofascijinis skausmas**
Myofascial pain in the face
 M. Ablingis, L. Ketvirtis, V. Guzevičienė (Lithuania)

- 47# 10.30 – 10.45 **Kompiuterinė diagnostika ir programos ortognatnės chirurgijos planavime**
Computer diagnostics and software in treatment planning of orthognatic surgery
S. Grybauskas (Lithuania)
- 48# 10.45 – 11.00 **Pakitusios osteogeninės osteoblastų savybės sergant periodontitu: TRAIL jautrumas**
Altered osteogenic properties of osteoblasts isolated from Periodontitis Patients: sensibility to Tumor Necrosis Factor - Related Apoptosis-inducing Ligand (TRAIL).
F. Ciccolella, G. Brunetti, P. Pignataro, M. Coricciati, A. Oranger, G. Mori, S. Colucci, M. Grano, F.R. Grassi (Italy)
- 11.00 – 11.30 **Pertrauka**
Break
- 49# 11.30 – 11.45 **Haimoritų neurologinės komplikacijos**
Neurologic complications of maxillary sinus inflammations
V. Guzevičienė, G. Sabalys (Lithuania)
- 50# 11.45 – 12.00 **Praktinė veido simetrijos parametrų skirtumų įvertinimo analizė**
Practice analysis of face simetry parameter difference
G. Janužis, A. Vaičiūnas (Lithuania)
- 51# 12.00 – 12.15 **Goldenhar'o sindromo išraiška veido ir žandikaulių srityje**
Manifestation of Goldenhar syndrome in maxillofacial region
D. Gruodienė, P. Tercijonas, S. Bojarskas (Lithuania)
- 52# 12.15 – 12.30 **Smilkininio raumens transpozicijos atokieji rezultatai**
Remote results of temporal muscle transposition
G. Janužis (Lithuania)
- 53# 12.30 – 12.45 **Ylinio paliežuvio sindromo aktualijos**
Relevance of stylohyoid syndrome
A. Gervickas, S. Dulksnytė (Lithuania)
- 54# 12.45 – 13.00 **Svarelių implantacijos į viršutinį voką komplikacijų apžvalga**
Overview of complications of weight implantation into the upper eye lid.
G. Janužis, V. Guzevičienė (Lithuania)
- 55# 13.00 – 13.15 **Apatinio žandikaulio potrauminių defektų plastika alo- ir autotransplantantais**
Plastic of posttraumatic mandible defects using alo- and autografts
A. Lukošius, D. Sakavičius, R. Kubilius, G. Sabalys (Lithuania)
- 56# 13.15 – 13.30 **Apatinio žandikaulio kampo lūžimų gydymo metodų palyginimas**
Comparison of treatment methods for mandible angle fractures
D. Razukevičius, R. Kubilius, G. Sabalys, S. Puolis (Lithuania)
- 57# 13.30 – 13.45 **Lazerinės stereolitografijos naudojimas veido ir žandikaulių chirurgijoje, planuojant operacijas ir gaminant individualius protezus**
Application of Laserstereolitography to Oral and Maxillofacial Surgery for operation planning and fabrication of custom made prosthesis
H. Pernu (Finland)
- 58# 13.45 – 14.00 **Apiešakinio kaulo pažeidimų viršutiniame žandikaulyje chirurginio gydymo planavimas po radiologinio ištyrimo**
The planning of the surgical treatment of the periapical lesion in the maxilla according radiographic examination
R. Tulaitė, D. Ivanauskaitė, J. Rimkuvienė (Lithuania)

- 14.00 – 15.00** **Pietūs**
Lunch
- Chairman** G. Janužis
Co-chairman H. Pernu
- 59# 15.00 – 15.15** **Kaulinių transplantantų naudojimas gydant žandikaulių cistas**
Application of bone grafts treating jaw cysts
O. Kavoliūnienė, A. Gervickas, S. Bojarskas (Lithuania)
- 60# 15.15 – 15.30** **Kraujavimo ir tromboembolijų profilaktika veido ir žandikaulių srities chirurgijoje**
Prevention of bleeding and thromboembolism in maxillofacial surgery
A. Budreikienė, S. Bojarskas (Lithuania)
- 61# 15.30 – 15.45** **Paausinių seilių liaukų limfoepitelinė – mioepitelinė proliferacija Sjögroen'o sindromo atveju. Klinikinis atvejis**
Lymphoepithelial – myoepithelial proliferation of parotid glands in case of Sjögroen syndrome
S. Bojarskas, I. Navakauskienė, S. Puolis (Lithuania)
- 62# 15.45 – 16.00** **Apatinio žandikaulio ir jo tankiosios kaulinės medžiagos morfometrinių charakteristika**
Morphometric characteristic of the human mandible and mandibular cortical layer
E. Jagelavičienė, R. Kubilius, V. Gedrimas, E. Monastyreckienė, A. Vaitkus (Lithuania)
- 63# 16.00 – 16.15** **Kraujagysliniai pakenkimai veido ir žandikaulių srityje: hemangiomas ir kraujagyslinės anomalijos**
Vascular lesions in the maxillofacial area: hemangiomas and vascular malformations
L. Zaleckas (Lithuania)
- 64# 16.15 – 16.30** **Galvos ir kaklo srities lipomos**
Lipomas of the head and neck regions
S. Puolis, R. Kubilius, D. Razukevičius (Lithuania)
- 65# 16.30 – 16.45** **Hiperbarinė oksigenacija veido ir žandikaulių chirurgijoje**
Hyperbaric oxygenation in maxillofacial surgery
D. Kučiauskienė, A. Lukošūnas, G. Sabalys, R. Kubilius (Lithuania)
- 66# 16.45 – 17.00** **Diodinis lazeris odontologijoje. Praktinis pritaikymas minkštųjų audinių chirurgijoje**
The use of the diode Laser in dentistry. Practical use in soft tissue surgery.
B. Iversen (Norway)
- 67# 17.00 – 17.15** **Skirtingo amžiaus Lietuvos gyventojų dantų netekimo priežasčių analizė**
The analysis of the teeth loss causes in different age groups of Lithuanian population
G. Janužis, A. Šertvytytė, A. Vaičiūnas (Lithuania)
- 68# 17.15 – 17.30** **Retinuotų protinių dantų chirurginio gydymo komplikacijos**
Complications of impacted wisdom teeth surgical treatment
K. Liorančienė, D. Sakavičius, R. Kubilius (Lithuania)
- 69# 17.30 – 17.45** **Nervų ir kraujagyslių pluoštų dekompresijos reikšmė žandikaulių operacijose**
Importance of nerve and vessel bundles decompression during jaw operations
S. Bojarskas, R. Kubilius, G. Sabalys (Lithuania)

SANTRAUKOS ABSTRACTS

1# *The influence of lower third molars on the crowding of lower incisors*

G. Trakinienė, A. Šidlauskas, R. Damušienė

Clinic of Orthodontics, Kaunas University of Medicine, Lithuania

Purpose. The purpose of our study is to find out any correlation between lower third molars and lower incisor crowding.

Method. Our study is based on the literature review and original study. The study group consisted of 91 subjects with an average age 21 ± 4.13 years. Dental casts and ortopantomograms were used to assess crowding in the lower dental arch and presence of third molars. All half's of lower dental arches were divided into 3 groups according to the position of third molars: first group consisted of subjects with erupted, second group – with unerupted and third group - with agenesis of third molars. The mesiodistal width of teeth crowns and dental arch length was measured on the study models. The lower dental arch length was measured in the anterior, buccal segments and in the all-over half of the dental arch.

Results. The biggest lack of space (about 1 mm) was found in the buccal segment in all three groups. In the anterior segment the biggest lack of space was found in the group with erupted third molar (-0.57 ± 1.11) and there was no lack of space in the group with agenesis of third molar (0.03 ± 0.96). But differences of lack of space in different groups were not statistically significant ($p > 0.05$).

Conclusion. The results demonstrated that there are no direct influence of the lower third molars on the lower incisor crowding. The crowding in this region can occur because of the growth pattern of the jaws, mesial migration of the erupting teeth, habits of the nutrition in the modern society, periodontium breakdown and etc.

2# *Problems related to surgical – orthodontic treatment of impacted canines*

D. Smailienė, A. Šidlauskas, E. Zasčiurinskienė

Clinic of Orthodontics, Kaunas University of Medicine, Lithuania

Purpose. The aim of the present study was to evaluate the influence of initial vertical and mesio–distal position of impacted maxillary canines on their periodontal health and the health of adjacent teeth after orthodontic-surgical treatment.

Other possible problems of treatment (repeated surgical intervention, periodontal problems, ankylosis, damage of adjacent teeth, treatment time, surgical complications, relapse) will be discussed as well.

Method. The study group consisted of 32 patients with unilaterally impacted maxillary canines (mean age - 18.19 ± 5.12 years). The closed eruption surgical–orthodontic approach was used for the treatment. 32 contra-

lateral canines were used as controls. Probing depths of periodontal pockets were examined in 6 points of the upper lateral incisor, canine and first premolar on the test side and compared with those on the control side. The initial mesio–distal and vertical location of the impacted canine was assessed on the panoramic image. Oral hygiene index was assessed for every patient. “Extrusion time” - time measured from the surgical procedure to the date at which braces can be properly placed on the labial surface of the extruded canine and overall treatment time were recorded.

Results. Mean pocket depth at the mesial palatal (MPP) point of the canine (3.06 ± 1.01 mm) was greater in the group treated by applying the surgical-orthodontic approach compared to mean pocket depth at the same point of the control canines (2.40 ± 0.61 mm, $p < 0.01$).

We found correlation between the initial mesio-distal and vertical localization of the impacted canine and pocket depth after surgical – orthodontic treatment.

Mean duration of tooth extrusion was 8.64 ± 6.25 months (range from 2 to 27 months), and treatment time - 17.06 ± 6.26 (range from 6 to 30 months). Periodontal status did not depend on the duration of canine extrusion. Results also demonstrated a correlation between oral hygiene status during the surgical-orthodontic extrusion of impacted canines and its periodontal pocket depth after the completion of the treatment.

Conclusion. A combined surgical-orthodontic approach as a treatment method for impacted maxillary canines produces a clinically acceptable result in the periodontal status. The depth of periodontal pockets of the impacted canine and adjacent teeth after surgical-orthodontic treatment depends on the initial localization of the impacted canine and the oral hygiene status.

3# *First Order Bends for Correcting Horizontal Molar Malposition*

N. E. Strobl, A. G. Crismani, A. G. Celar, H.P. Bantleon

Medical University of Vienna, Department: Orthodontics, Austria

Purpose. To analyse the forces and moments at the active and reactive units when first-order bends are used for correcting molar dislocation in the horizontal plane.

Method. According to Mulligan (1982) 8 molar positions (rotated and/or buccally or lingually dislocated first molars) were reproduced on a mandibular fully dentate resin model. Six brackets (0.018” system, 0° angulation and 0° torque) were fixed onto the front teeth (from canine to canine) and two tubes (0.018” system, 0° angulation and 0° torque) onto the first molars. The front teeth were considered as the reactive unit while the first molars were considered as the active unit. For correcting the molar dislocations 10 archwires of 0.018” stainless steel

were used and the corresponding recommended first-order bends (in-bend, out bend, toe-in bend, toe-out bend, step-bends and center-bends) were bent with an activation of 45°. The 8 different clinical situations were then sequentially transferred into a 3D-measuring device and the activated wires were fixed by means of elastic modules into the brackets mounted onto the device's sensors. A total of 80 measurements was carried out. The forces and moments in the sagittal as well as in the horizontal planes were analysed.

Results. The essential results of this study at the reactive unit are summarized as follow. In-bend: moment = 3172,3±238,5 cNmm; out-bend: moment = -5014,9±1426 cNmm; step-bend (out-in): horizontal force = 325,2±48,2 cN; step-bend (in-out): horizontal force = -226,1±34,8 cN.

Conclusion. The concept of Mulligan is an effective method for correcting molar dislocations in the horizontal plane. Nevertheless it is important to point out that wires activated with first-order bends also produce unwanted and clinically not negligible forces and moments at the reactive unit.

4# Prevalence of malocclusion in Lithuania

K.Lopatiene

Clinic of Orthodontics, Kaunas University of Medicine, Lithuania

Purpose. To evaluate prevalence of various malocclusion characteristics among 7-15 years old children.

Methods. According to the compiled study protocol and a questionnaire all 7-15 years old pupils (1521 children) in three randomly selected Kaunas city schools were studied. Methods of the study were interview, questionnaire-based interview and clinical examination. The characteristics of malocclusion evaluated in the study included prevalence of the malposition of the incisors, canines and premolars, crowding, size of overjet and overbite/openbite, prevalence of posterior cross-bite, prevalence of Angle's Class I, II and III molar relationship. Statistical analysis was performed using the software package Statistica 5.0.

Results. During the study one or more characteristic of malocclusion was diagnosed to 80 % of examined children. The study showed that the following malocclusions were most common among studied children: malposition of upper incisors (40%), malposition of lower incisors (39%), crowding in (44 the upper dental arch %), crowding in the lower dental arch (40%). While analysing other characteristics of malocclusion increased overjet, greater than 3.5 mm, was measured in 21% of subjects, posterior cross-bite was detected in 9.5% of children, open bite was found in 4% of pupils. The distribution of the first permanent molars relationship according to Angle's classification was following: Angle Class II – 27%, Angle Class III – 1.6% of the children.

Conclusion. Prevalence of malocclusion among 7-15 years old children is 80 %, most common malocclusion is malposition of incisors.

5# Application of implants for orthodontic purposes

G.Jankauskas, B.Labanauskaitė, A.Vasiliauskas, N.Haffar

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Purpose. Review and update current data of the use of implants for orthodontic anchorage and classify them in order to make the orientation within the great variety of implants easier.

Method. In order to ascertain the possibilities of implant usage in orthodontics, a meta-analysis was carried out, using the online database of Pub Med. The search was conducted using the keyword orthodontic implant. To minimize inclusion of poor-quality studies, only refereed journals were examined. Having reviewed the articles or their abstracts/summaries the data were analysed. The articles were categorised according to the journal and the year of publication, the type of the article and the type of the implant.

Results. Having completed the search with the keyword orthodontic implant, 198 articles were selected. The research on the subject is on the increase at this time. The implant treatment is shorter and more effective. There is a tendency that the small implants are used more and more widely replacing the bigger ones, due to simpler biomechanics, small size, non-invasive surgery they have become increasingly popular. In order to facilitate the understanding of the wide range of implants, we suggested the classification of the implants for orthodontic anchorage according to the shape and size, the implant bone contact and the application of the implant. We systemized the information about types of implants and their advantages in respect of traditional orthodontic treatment.

Conclusion.

1. The orthodontic treatment using implants is a new method, doctors are not enough acquainted with it and implant systems are not standardized.

2. Orthodontic treatment using implants is almost 100% successful, if the right type of implant selected and the clinical situation properly evaluated.

3. Implants are an excellent alternative to traditional anchorage methods in orthodontic treatment.

6# Adjunctive orthodontic treatment in interdisciplinary therapy

A.Gaidytė (Lithuania)

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An increased understanding of the physiology associated with hard and soft tissues during tooth movement, in conjunction with many sweeping advances in orthodontic appliances, has changed orthodontics from a specialty which deals with adolescent patients to one that can help improve the dental health and overall well-being of dentulous patients in any age group. Adjunctive orthodontic treatment is limited in scope and deals with a particular portion of occlusion. Procedures are aimed at improving specific occlusal relationships as part of an

overall treatment plan usually involving major components of periodontal and restorative therapy. Tooth movement may be an excellent method for periodontal tissue regeneration (i.e. increase) of gingival tissue and alveolar bone levels in implant sites in vertical and horizontal planes. Mesial or distal movement over apparently too thin labio-lingually alveolar bone areas could create solid areas of new bone. Slow "orthodontic extraction" regenerate new periodontal tissues following forced eruption of tooth with more or less "hopeless" long term prognosis. Enhanced aesthetics and increased levels of osseointegration for the single tooth implants could be created by adjunctive orthodontic treatment.

7# *Long-term effects of early orthopedic headgear*

P. Pirrtiniemi

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The views of the effects of cervical headgear (HG) are to some extent conflicting, at least when the long-term effects are concerned. Most reports that are based on a short-term follow-up, describe a restricted maxillary anterior growth. When the study designs of these reports are concerned, it can be concluded that clinical data, based on randomised, prospective settings, have been available only during the last decade.

We conducted a randomised study using an expanding headgear during the early mixed dentition. The aim of our study was to determine the long-term effects of early headgear treatment on craniofacial structures and dental arches.

Our results confirm the earlier findings that the posterior and inferior movement of the maxilla during the headgear treatment is recovered by an opposite growth during the follow-up. The results also support the view of McNamara (2002) that the early expansion of the maxilla is very stable. Thus the largest skeletal effects of a cervical headgear treatment can be expected in transversal dimension, but the favourable dental changes in all dimensions and in both dental arches underline the high dentoalveolar effect of the early headgear treatment.

8# *Palatal implants loaded one week after placement. A clinical evaluation by resonance frequency analysis*

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Purpose. To investigate the behaviour of early loaded palatal implants when observed with resonance frequency analysis (RFA).

Method. Twenty patients (7 male and 13 female, mean age 26.4 years) received one palatal implant each (length: 4 mm, diameter: 3.3 mm; Orthosystem®, Institut Straumann, Switzerland) for maximum orthodontic anchorage. The implants' stability was observed by RFA. Measurements were carried out at the time of surgery, after

first orthodontic loading, and subsequently once a week over a period of 12 weeks.

Results. Two palatal implants were lost. The other 18 remained stable. The average period from insertion to first loading was 6.7 ± 0.8 days. The mean orthodontic force applied was 272.2 ± 73.2 cN. The ISQ-value at the time of surgery averaged 69.4 ± 3.9 . The mean ISQ-value 6.7 days after insertion was 69.8 ± 3.6 . Twelve weeks post surgery the mean ISQ-value was 69.8 ± 3.5 . A statistically significant decrease in stability was observed after 2 and 3 weeks post surgery ($P=0.005$ and $P=0.04$).

Conclusion. The behaviour of early loaded palatal implants showed an initial decrease of the ISQ-values. From 6 weeks post surgery onward the ISQ-values increased. Within the limitations of this study, the results suggest that the healing time of palatal implants reported in literature (12 weeks) should be discussed. An orthodontic loading of palatal implants 6 weeks post surgery with a force up to 400 cN seems to be justified. Yet further investigations are necessary to evaluate the behaviour of early loaded palatal implants considering observation periods of over 12 weeks.

9# *Intercentre comparison of treatment results of cleft lip and palate*

J. Lilja

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The cleft team in Göteborg has now been active for 50 years. During this period, the surgical treatment has changed from a very active approach using early bone grafting in the early years to a more conservative approach practising delayed hard palate closure in the mid-seventies. In later years the team has been involved in multicentre studies including the Scandcleft project.

All patients have always been followed regularly regarding growth, speech and appearance and more recently with regard to the burden of care including psychosocial aspects.

Changes in the surgical approach were always due to less favourable results found at the follow-ups. In the beginning the main problems were focused on growth since it turned out that early bone grafting, as it was practised in Göteborg, had a very detrimental effect on maxillary growth.

When dentofacial measurements recorded by the orthodontists were discussed within the team, surgery was gradually changed into a more and more conservative approach ending up in a protocol including delaying the closure of the cleft in the hard palate until 8 years of age. With this treatment, the speech therapists found good speech in almost all patients at 10 and 16 years. However, some patients had a temporary speech problem between 3 and 8 years. Within the team it was then decided that an earlier closure of the residual cleft in the hard palate at 3 years could retain the good maxillary growth and reduce the temporary speech problems.

Having established our protocol through debate both within our own team and with other centres in Scandinavia, we wanted to compare our results with those of other centres.

The team therefore participated in many intercentre studies including the Scandcleft project. Inclusion of patients to this project was completed in 2005.

In 1999, the Swedish Quality Registry was formed. In this registry patient data can be included via the internet and comparison of treatment results can be made both nationally and internationally.

In order to plan the best future protocol in the light of the experiences of the Scandcleft project and other intercentre comparisons of treatment results the team's specialists have analysed different aspects of earlier protocols and investigated new possibilities. Surgical results indicate that more radical dissection and posterior positioning of the levator muscle could improve speech. Discussions are ongoing and the new protocol will be implemented in January 2006

10# Evaluation of effectiveness of Alveolar Distraction (review of literature)

N.Saulačičė

Department of Oral Surgery Oral Medicine and Oral and Maxillofacial Radiology, University of Geneva, Switzerland

Distraction osteogenesis was recently introduced as successful treatment for vertical elongation of atrophic alveolar ridges. This presentation will deal with the indications, distraction devices and protocol, rate of augmentation and success of dental implants placed in distracted alveolar bone. The advantages and limitations of such a technique in comparison to other treatment options for rehabilitation of vertically deficient alveolar ridge will be also discussed.

11# Predictable Implant Aesthetics through Preservation of Hard and Soft Tissues”.

L.Vahtra

Citymed clinic, University of Tartu, Estonia

Purpose. The ultimate goal of today's implant therapy is the achievement of a good function and pleasing smile architecture considering the proper proportion and relation of the implant restoration according to established principles. To achieve a long-lasting esthetic result with implants is important to avoid the vertical and horizontal bone resorption. From the literature we know that some bone resorption will occur around implant heads as soon as implant is in contact with the oral environment (“biological width establishment”). The platform-switching concept seems to be promising strategy to reduce or eliminate bone loss around the implant and helps to preserve naturally occurring soft tissue anatomy. This allows for an implant restoration that mimics a natural tooth.

12# Implant surgery and risks for partially edentulous patients with periodontal disease

A.Puišys, I.Pacauskienė

Department of Dental and Oral Diseases, Kaunas University of Medicine, Lithuania

Purpose. The purpose of the present study was to perform a review of several publications and evaluate the possibilities, risk and success of implants placed in partially edentulous patients with a history of periodontitis

Method. Review.

Results. Dental implants are successfully used in rehabilitation of periodontal patients though some failures do occur. The role of subgingival flora in periimplantitis within periodontally compromised patients has not yet been completely established. Implants in partially edentulous periodontal patients, in contrast to fully edentulous subjects, will easily be colonized by periodontal pathogens. Studies indicate that periimplantitis may be caused by a microbiota comparable to that of periodontitis. However, some studies found, that periopathogens detected in the periimplant pockets, do not necessarily cause periimplantitis. Recent studies indicate the importance of subject factor for bacterial load on tooth / implant surface and tissue response. What are the long term clinical results of implants in periodontal patients? How can the failures be predicted?

13# Sinus elevation grafted with calcium sulfate beads: histologic and histomorphometric evaluation

G.Pecora, M.Bonelli, R.Ceccarelli, R.Grassi

Department of Dentistry and Surgery, University of Bari, Italy

Purpose. Histologic and histomorphometric evaluation of maxillary sinuses grafted with

“Surgiplaster Sinus“ at 5 and 8 months

Method. 20 Sinuses in 14 patients (9 male and 5 females)- aged from 25 to 58 years, non smokers- have been selected for this study. Before surgery, by flipping a coin 10 patients have been included in the Test group and 10 patients in the Control Group. In both groups the grafting material has been Surgiplaster Sinus. The implants have been inserted. Test Group sites have been reopened at 5 months and bone samples have been harvested in the sites selected for implants insertion. The Control sites have been reopened at 7 months.

Results. Test sites show remnants of CS, some amount of woven bone and histomorphometric value of 42%. Control sites show total resorption of CS, high degree of maturation and mineralization of the new bone, 54% histomorphometric value

Conclusion. Surgiplaster Sinus shows extraordinary osteoconductive action, total resorption in between 7 months and the regenerate bone is good quality and excellent maturation

14# Implant supported restoration and reference tooth symmetry: from planning to esthetic result evaluation

G.Juodžbalys (Lithuania)

Department of Maxillofacial Surgery, Kaunas University of Medicine, Lithuania

Purpose. The purpose of the present study was to identify the most reliable clinical and radiological criteria

of potential extraction site and to propose a new classification of extraction socket in esthetic implant dentistry in order to optimize prognoses for immediate implant procedures in the maxillary anterior region of the mouth. To develop and validate an index for rating esthetics of implant supported restoration complex.

Method. Fourteen teeth were extracted: 8 upper central incisors, 6 upper lateral incisors in 12 patients, 4 women and 8 men (age 17 to 49 years, average = 28). Extraction site parameters and condition were evaluated using clinical and radiological methods of soft tissues and bone evaluation. The position and bone loss of the labial plate and labial plate width was estimated using support immersion endoscopy (Olympus, Tokio, Japan). Fourteen titanium screw-shaped implants were placed into the prepared sites in the optimal three-dimensional position. Success rate and esthetic evaluation was done after prosthetic rehabilitation. Implant supported restoration esthetics was evaluated according to author proposed index.

Results. Immediate implantation with good regenerative potential and aesthetic prognosis was possible at 6 extraction sites (42.9%) for 6 patients (3 male and 3 female). Six patients (5 male and 1 female) had 8 extraction sites (57.1%) with compromised soft tissue and bone volume. All dental implants were stable, painless; there was no discomfort and/or altered taste, nor peri-implant infection. There were identified from literature data and proved in practice the most important implant supported restoration esthetic index evaluation parameters.

Conclusion. It was concluded that a new classification of extraction socket in esthetic implant dentistry is effective prognostic tool for immediate implant procedures in the maxillary anterior region of the mouth. Implant supported restoration esthetic index should include complex of soft, hard tissues and prosthetic restoration evaluation parameters.

15# Minimal invasive techniques in large defects of disabled patients

A. Gheorghiu,

Private practice in Villingen-Schwenningen, Germany focused on Implantology, Periodontology and Esthetic Dentistry

Purpose. The aim of this presentation is to indicate the impact of modern techniques in implant dentistry for large jaws teeth arch defects restoration.

Method. It will be demonstrated complicated and advanced methods of modern implantology such as immediate implant placement, bone splitting, bone spreading, flapless approach and immediate loading.

Results. Results of present study indicated that all mentioned above methods are minimally invasive and effective. Furthermore all positive properties make them available also to disabled and old patients improving their quality of life and enlarge the circle of our patients.

Conclusion. Disabled patients can be successfully treated using an advanced methods of modern implantology.

16# Screw-cemented retained fixed prostheses on implants

T. Linkevičius

Vilnius Implantology Center, Lithuania

Purpose. The aim of the study is to present cement-screw retained restorations on implants and define, which dental cement is suitable for cementation of this type of prosthesis.

Method. Step-by-step technique is described for fabrication of cement-screw retained restorations. Additionally, the experiment is described. 3 single cement-screw retained crowns were cemented on implant abutments (Maestro, Biohorizons). Zinc-phosphate (Harvard), glass ionomer, modified with resins (Fuji Plus) and resin (Calibra) cements were used. The retrievability of each specimen was tested.

Results. Fabrication of cement-screw retained crowns on implants can be employed by any dentist and dental technician, working with implants. It is easy and efficient.

The results of the experiment will be presented at the conference.

Conclusion. With the limitations of this study and presentation it can be concluded that cement-screw retained restorations on implants possess the ease of fabrication of cement-retained restorations and retrievability of screw-retained prostheses.

17# What to choose: treatment of progressive generalized periodontitis or dental implants?

G. Juodžbalys

Department of Maxillofacial Surgery, Kaunas University of Medicine, Lithuania

Purpose. The purpose of this study was: a) to make literature review concerning a natural teeth evaluation for their quality of health, strategic value and financial limitations in relation to long-term prognosis; b) to evaluate the success of one-stage implants placed at the time of alveolar bone augmentation using simultaneous Guided Bone Regeneration technique with a collagen barrier membrane in patients suffering from insufficient bone width and height.

Method. Seventeen patients were treated with 20 one-stage OSTEOFIX (Oulu, Finland) implants using simultaneous Guided Bone Regeneration technique. Dehiscence defects were filled by bovine bone mineral Bio-Oss (Geistlich AG, Wolhusen, Switzerland) and covered with deproteinized collagen membrane (Bio-Gide®, Geistlich AG, Wolhusen, Switzerland). Clinical and radiographic parameters of the peri-implant conditions were assessed at the moment of prosthesis placement and at one- and five-year follow-ups. Health and stability of soft tissues was evaluated according to Mombelli et co-authors. For the measurement of the interproximal marginal bone level standardized periapical radiographs were obtained. The criteria of success set for this study were chosen according to Albrektsson et co-authors.

Results. Diagnostic dehiscence defect measurements after implant placement showed that the mean vertical

defect varied from 3.8 mm to 10.0 mm. At the moment of prosthesis placement and at one- and five-year follow-ups all implants were stable, painless and without biological complications. Results showed a good dehiscence defect fill and proper soft tissues condition at the moment of prosthesis placement. Clinical and radiographic parameters of the peri-implant conditions remained stable during follow-up. The cumulative implant survival rate was 100% after the 5-year observation period and the success rate for all pooled implants was 90%.

Conclusion. Unfortunately in dentistry, as in all biological sciences, there are no straightforward answers to questions about periodontally compromised teeth prognosis. The present study showed predictable treatment outcomes recorded after five years of function for one-stage OSTEOFIX (Oulu, Finland) oral implants placed simultaneously with GBR using resorbable collagen membrane and deproteinized bovine bone mineral.

18# Immediate Implants or Transplants: Any Extra Help Necessary?

L. Huys

Department of Oral Implantology, A.Z. Koningin Fabiola, Belgium

Purpose. Immediate (post-extraction) implants and/or transplants often deal with two major problems: maintaining the initial stability and preventing soft tissue ingrowth during the healing period. Using one-stage implants simplify the procedure, but using grafting materials and/or membranes often annihilate that gain in simplicity. The objective thus is to elaborate a technique that combines effectiveness, reliability and simplicity without being detrimental to long-lasting success.

Method. Hopeless teeth were extracted and one-stage cylindrical screw implants were inserted into the fresh extraction sockets, together with an alloplastic grafting material and without using any type of membrane. In other cases, and when appropriate, impacted teeth were removed and transplanted immediately into the fresh extraction socket, together again with this alloplastic grafting material. Patient selection was not done according to the standard selection criteria but on the contrary the only contraindications were chemotherapy and psychotic illness.

Results. The graft material always produced an immediate additional stabilization of the implant/transplant and helped stop bleeding. Significantly, no soft tissue ingrowth was ever seen clinically or radiographically. Of a total of 556 implants, 19 (3.4 %) were lost in the osseointegration period in 6 patients on a total of 147 patients. These 6 patients were diabetic and/or heavy smokers. No transplant failed. Rehabilitation was obtained through different prosthodontic devices. During the follow-up period of minimum 7 years, not a single loss was reported and no measurable loss of bone height and width was seen clinically or radiographically.

Conclusion. Using implants in a one-stage way in fresh extraction sockets, as well as transplanting impacted teeth, in combination with a proven graft material is not only predictable and successful in the long term, but is

also a safe and simple procedure, with much less burden for the patients.

19# Bicortical implantation in the mandibular molar area

D. Karpavičius (Lithuania)

Department of Dental Implantology, Kaunas University of Medicine, Lithuania

Purpose. To look over the possibilities of screw type implantation and prosthetics in the molar area of mandibulae when it has big atrophy and also high position of n. alveolaris inferior.

Method. Screw type implantation has been done to twenty two patients by thirty four implants in the molar area of mandibulae. Later, prosthetics has been made.

Results. The waiting period was 6 to 36 months. Two implants had to be removed.

Conclusion. Bicortical implantation in the molar area of mandibulae is offered as of an alternative while making screw type implantation in this area, not including additional plastic procedures of bone.

21# Sinus lifting technique in vertical bone defects in the posterior maxilla with osteotomes

D. Razukevičius, R. Kubilius

Department of Maxillofacial Surgery, Kaunas University of Medicine, Lithuania

Aim. to investigate sinus lifting technique with osteotomes in vertical bone defects in the posterior maxilla. To calculate the mean height of sinus lifting

Methods. sinus lifting was evaluated on the basis of dental roentgenograms with the application of a visigraph, and panoramic radiograms.

Results. within 18 months we performed sinus lifting procedures with osteotomes in 24 patients. 54.16% of patients were males, and 45.83% females. In 4 patients the operation entailed complications resulting in the rupture of the mucosa. The mean height of sinus lifting was 4.1 mm.

Conclusions. the sinus lifting technique involving the use of osteotomes in vertical bone defects in the posterior maxilla is a safe technique. its success rate is 83.33%, and complications, i.e. rupture of the mucosa during the operation, can be controlled.

22# Restorative options for optimal esthetics

W. Remington (USA)

Combined therapies from the various dental specialties can result in superior esthetic outcomes for your patients. Orthodontic/restorative, oral surgical/restorative, periodontal/restorative combinations will be looked at in this lecture. The latest restorative materials including porcelains, composite resins and gold and their application to bring about the finest esthetic result will be discussed.

All cases discussed will have been treated utilizing a surgical microscope for the most ergonomic, highest magnification treatment possible. Principles of minimally invasive dentistry are routinely used to achieve the results seen in this lecture.

23# New concept of shade selection and layering technique of direct composite restorations

V. Vilkinis (Lithuania)
UAB Vilkiniai ir Ko

The aim. Most authors restrict themselves to the shade determination of the tooth as a whole and do not analyze dentin and enamel separately. Also there is a tendency to start from the determination of hue (A,B,C or D) and chroma of the colour (A1,2 or 3) while underestimating the value. There are great variations in value (lightness or darkness) of the colour depending on the patient age and enamel thickness which affect tooth's colour as whole. Therefore it is important to be able to resemble different values of natural enamel with composite material of similar translucency. The aim of the present study was to test a shade selection technique concentrating on the determination of value and anatomical layering technique resembling natural thickness and translucency of enamel.

Methods. The anatomical layering technique was first tested on acrylic teeth and clinically on 20 frontal teeth with the loss of incisal edge because of trauma or class IV carious lesions. For the colour determination a custom made shade guide (GC Corporation, Tokyo, Japan) was used together with a modified VITAPAN classical shade guide (VITA Bad Sackingen, Germany). The value of the tooth colour was determined first while hue and chroma in the second stage. For all test restorations a microhybrid resin composite Gradia Direct with a self-etching, light-cured bonding system G-Bond (GC Corporation, Tokyo, Japan) were used. The restorations were polished with diamonds (NTI-KAHLA GmbH, Kahla, Germany), and Soft-Lex discs (3M Dental Products) at moderately high speed, low pressure and under water cooling. The final gloss was achieved by means of a GRADIA DIAPOLISHER (GC Corporation, Tokyo, Japan.)

Results and conclusions. Composite material was blending with the natural tooth structure so well that the preparation line could not be seen in any case and the restorations looked „invisible“. While illuminated with UV-light (G-Light, GC Corporation, Tokyo, Japan) showed slightly higher degree of fluorescence compared to the adjacent dental tissue. The rational use of the anatomic layering depends on the class and size of the lesion. In small class III and V restorations it is easy to achieve good aesthetics with one or two layers of a composite material. However in class IV restorations only the systematic approach in colour selection together with the anatomic layering and the use of a composite material with a wide range of translucent shades, natural opalescence and fluorescence can give the restoration nature like appearance.

24# Impact of different factors on caries activity in children with Type I diabetes mellitus

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Scientific literature data about the relationship between dental caries and diabetes mellitus are controversial. Up to now the effect of type 1 diabetes mellitus upon the dental caries pathogenesis is still not finally explained. Chronic hyperglycemia reinforces the impact of the caries risk factors upon the hard dental tissues, and may influence the caries activity.

The aim of the study was to evaluate the selected risk factors associated with caries in 10 to 15 year-old children with type 1 diabetes mellitus based on the longitudinal studies of caries experience and activity, as well as on the complex analyses of the salivary parameters, oral hygiene status, and glycemic control of diabetes mellitus.

The results of our study demonstrated that age of the subjects, poor oral hygiene and low salivary secretion rate were related to high caries experience and activity in children with type 1 diabetes mellitus. The two-year caries increments were associated with glycemic control of diabetes mellitus and with salivary glucose level in the study group.

In order to reduce the high caries experience and activity in the children with type 1 diabetes mellitus it is necessary to evaluate and to control caries risk factors as well as to improve the quality of glycemic control of type 1 diabetes mellitus.

25# Periodontal disease in diabetic patients

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Based on several epidemiologic studies both type 1 and type 2 diabetes mellitus (DM) have been found to be significant risk factors for periodontal diseases. Periodontal disease has also been regarded as one of the organ complications of diabetes mellitus.

In diabetic subjects the initiation and progression of periodontal disease have been associated with poor metabolic control of DM. The long-term control of DM is measured as the percentage of glycosylated haemoglobin (HbA1c, reference level 4.5-6.2%). In addition the severity of periodontal disease is related to the duration and the presence of other organ complications of DM (retinopathy, nephropathy and neuropathy). Therefore, when planning periodontal therapy of diabetic patients it is of utmost importance to sort out the anamnestic information concerning the diabetic status. Intensive periodontal maintenance therapy is preferred to diabetic subjects at high risk for periodontal disease. There is some evidence that the metabolic control of DM can be improved by eliminating periodontal infections.

Use of antibiotics may be considered in association with periodontal therapy. The clinical signs of gingivitis

and periodontitis as well as the characteristics of the subgingival biofilm in DM subjects are similar to those observed in non-diabetic subjects.

The increased risk for periodontal disease in diabetic patients especially in those with poor long-term control may be explained by worsened function of PMN-cells, glycosylation of proteins, thickening of vessel walls and changes in the function of fibroblasts.

26# The anti-caries efficacy of different fluoride compounds in dentifrices

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Fluoride-containing toothpastes are recognized to be the most significant factor contributing to the caries reduction observed in many western countries.

The fluoride bioavailability and concentrations are main factors influencing the fluoride compound activity. Most of toothpastes contains two different fluoride compounds: sodium fluoride and sodium monofluorophosphate.

Current, available studies suggest that sodium fluoride has higher anti-caries activity.

27# Diagnostic aspects of dental caries and dental fluorosis

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Both dental caries and dental fluorosis can be described as a result of disturbed mineralization in enamel, with similar clinical features of the lesions appearing on a tooth surface. The aim of the study was to describe the pattern of dental caries as well as prevalence and distribution of dental fluorosis in populations of 12-15-year-olds with life-long exposure to 'optimal' (1.0 ppm, "High-F") and low (0.2 ppm, "Low-F") levels of fluoride in the drinking water. The diagnostic criteria used to describe the lesions were based on etiological considerations. Diagnosis of caries differentiated between non-cavitated and cavitated stages as well as active and arrested stages of lesions (Nyvad method). Dental fluorosis was recorded using TF index. Most of the caries experience consisted of active, non-cavitated lesions (mean of 10.7, and 10.6 surfaces), and inactive, non-cavitated lesions (mean of 7.1 and 6.1, surfaces) in the High F and Low F groups, respectively. The prevalence of dental fluorosis was 45% in the 'High F' group, and 21% in the 'Low F' group. Children in the 'High F' group were substantially more affected by dental fluorosis compared with children in the 'Low F' group. The pattern of intraoral distribution of the fluorotic lesions was similar in both groups, the upper premolars being the most frequently affected, followed by the lower premolars and second molars. A tendency for higher caries scores was noted in children with no TF scores recorded. The results of this study confirm that there is no critical threshold for fluoride intake be-

low which the effect on dental enamel cannot be seen. Even in areas with low fluoride concentrations in the drinking water a certain clinical manifestation of disturbed enamel formation could be observed.

28# Diffuse enamel opacities and their possible risk factors in young people in Minsk

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Purpose. The aim of this study was to examine the prevalence of diffuse enamel opacities (DIFF) and possible risk factors of their development.

Method. School children in age 15, 16 yrs old (n=533) and students (n=1450) in 17, 18, 19, 20-24 age groups in Minsk were examined. The examination of all permanent teeth for DIFF was performed using the diagnostic criteria of the modified DDE-Index (O. Mullane, J. Clarkson, 1989). All subjects were the residents of Republic of Belarus. All people were asked to complete a questionnaire to determine where they were born, their diseases in childhood, present allergological status, status of their thyroid gland. The χ^2 test was used.

Results. 48,6% \pm 1,1% (SE) of examined people had one or more teeth with DIFF. The maxillary premolars were most frequently affected by DIFF than their mandibular counter-parts ($p < 0,05$). DIFF on the maxillary premolars is the most common defect of all developmental defects on the teeth, revealed during this epidemiological survey. The difference between left and right sites was not statistically significant ($p > 0,05$). The mean number of teeth with DIFF per person (DDE-codes: 3, 4) was 4. Statistically significant relationships were found between the presence of DIFF and problems in allergological status, some diseases in childhood (for DDE-code "4") and hyperplasia of thyroid gland (for DDE-code "3").

Conclusion. There is a high prevalence of DIFF in young people in Minsk, which is a low-fluoride area. The relationship between presence of DIFF and some problems of general health status was discovered. This problem needs further research.

29# Antibacterial properties on adhesives and cavity disinfectants

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According to traditional concepts, dental restorative materials are primarily aimed to mechanically seal and fill tooth hard tissue defects. Biological considerations have been mainly directed to preventing pulp damage (and impairment of pulp repair) potentially caused by substances released from restorative materials and diffusing through residual dentin towards the dental pulp. However, pulp damage in the course of restorative procedures may also be caused by bacteria penetrating into a gap between the material and the tooth substance, especially in the context of composite resin filling materials. The proposal to

use antibacterial fill-ing materials is not new, but, so far, toxic properties of materials towards bacteria have always been associated with unwanted toxic properties towards pulp cells. Recently, a new molecule (MDPB), which is a combination of a polymerizing group (methacrylate) with an antibacterially active group (dodecylpyridinium bromide) was introduced into the dental market with the claim to be active against bacteria but not against pulp cells thus preventing pulp damage and interferences of pulp repair caused by bacteria. In a series of experiments it could be shown that this monomer indeed is antibacterially active, also – in contrast to other bonding agents – after passage through dentin slices of up to 500 µm (diffusion effect). Even more, dentin seems to activate the effect of the adhesive containing this antibacterial monomer. However, after polymerisation no diffusion effect was measured, only a surface effect; i.e. the diffusion of the biologically active monomer can be regulated by polymerisation through immobilization. Kinetics of the antibacterial effect of the non polymerised material allowed for disinfecting of infected dentin chips within the application time (20 sec). Although after short term and direct contact (1h) of SV40 IT antigen transfected human dental pulp derived cells with the adhesive agent, ROS production of the cells was shown to increase, in other preclinical tests (dentin barrier test, tooth slice model, animal experimentation) no indication for pulp damage was found, if a dentin layer was present between the adhesive and the pulp (cells). This is supported by preliminary clinical data. Thus it can be concluded that – probably through the switch from a diffusion activity to a surface activity after polymerisation/immobilization – antibacterial effects of MDPB can be achieved on and in dentin without pulp damage and without interfering with pulp repair, if dentin is present between the material and the dental pulp.

30# *Apical periodontitis with the extraoral sinus tract*

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Purpose. Even today we find extraoral sinuses caused by odontogenic infections. A rare form of periradicular inflammation might also be called Partsch's chronic granulomatous inflammation or granuloma migrans. In this case the granulation tissue spreads through the bone and results in a cutaneous odontogenic sinus. The therapy and differential diagnosis is discussed.

Method. We report on male patient in whom complete healing was obtained by removal of the periradicular process and excision of the sinus tract, and female patient in whom complete healing was obtained without excision, only by treatment of the periradicular process by endodontic therapy.

Results. Conservative treatment is mostly successful, but the surgical interventions are necessary in some cases.

Conclusion. Extraoral sinuses caused by odontogenic infections are rare processes. They are good documented, but diagnostic mistakes are still common. The main failure in treatment is the wrong diagnosis.

31# *Dental root resorptions*

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Purpose. The aim of the study was to perform the analysis of literature data on root resorption processes, and to discuss methods of the prevention of root resorption or deceleration of its course.

Method. We collected literature that analyzes the causes and mechanisms of tooth resorption and the possibilities for root restoration. We performed the analysis of literature data and illustrated it with clinical cases.

Results. The analysis of literature data showed that roots of permanent teeth are protected from resorption by cementum and predentin layers. Damage to the protective root layer results in the development of inflammation on the surface of such root, which may cause root resorption. The main causes of injuries to radical cementum and predentin may be acute dental traumas, iatrogenic root damage inflicted during periodontal treatment, tooth whitening procedures, overheating of dentin, etc. The main causes of inflammation that develops on the damaged root surface are infections in root canal or gingival sulcus. There are two main types of root resorption – the external and the internal ones. The article also discusses possibilities for the replacement of roots, such as cemental healing and osseous replacement.

Conclusion.

1) Root resorption develops when the protective cementum and predentin layer of the root is damaged.

2) The resorption process is precipitated by an inflammation that develops on the damaged root surface.

3) Prevention of root resorption necessitates prophylaxis of acute and pathogenic traumas, as well as timely elimination of possible causes of inflammation.

32# *Clinical evaluation of one- and two-step self-etching adhesive systems at 18 months*

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Purpose.

The purpose of this study was to evaluate the clinical performance of four commercial adhesives at 18 months.

Method.

The 100 lesions at 35 patients were restored using two-step (AdheSE, Optibond Solo Plus SE) and one-step self-etch adhesives (Promt-L-Pop, i-Bond) on 25 restorations on each system. The restorations were evaluated at baseline and 18 months after placement using modified Ryge criteria.

Results.

All 100 restorations were graded A at baseline for all categories. At 18 months, the retention rates for the restorations in the two-step group were 100 percent and 80 percent in the one-step group. All restorations in the two-step group demonstrate clinical acceptability, 11 restorations in the one-step were graded C in marginal adaptation. The distinctions between different systems in mar-

ginal discoloration are not authentic. No sensitivity and secondary caries were found in any of the restorations.

Conclusion.

The two-step self-etching adhesive systems evaluated in this study provided better clinical results after 18 months than one-step self-etch adhesives.

33# *Periodontal status and treatment needs among population in Republic of Belarus*

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Purpose.

The aim of this study was to assess the periodontal status and treatment needs among the population in Republic of Belarus.

Method.

The clinical examination included periodontal status measured by the CPITN codes of 1683 people in 15, 16, 17, 18, 20-24, 35-44, 45-54, 55-64, 65-74 age groups. The treatment needs were assessed according to WHO-criteria.

Results.

Only 3% of young people (15-18 yrs) had a sound periodontal status. Periodontal pockets were founded in all age groups. Their prevalence was increasing from 0,85 ±0,84% in 15 yrs to 31.18±3.55% in 45-54 yrs. In elderly the prevalence of CPITN "3", "4" decreased and the number of people with excluded sextants increased. All examined people needed in instructions in oral hygiene and professional tooth-cleaning. Surgical treatment need was the next: 0.85 % in 15 yrs, 23.5 % in 35-44 yrs, 36.9 % in 45-54 yrs. Because of a large number of missing teeth (3.57±0.25 excluded sextants per person in 65-74 yrs) it was registered a reduction in surgical treatment need among elderly. Only 9.4 % of examined people in 55-64 and 14 % in 65-74 age groups showed needing this care. The percentages of persons who needed a complex dental care (surgical and prosthetic) were 38.1 % in 35-44 yrs, 59.2 % in 45-54 yrs, 88.4 % in 55-64 yrs and 92 % in 65-74 yrs.

Conclusion.

All the population in Republic of Belarus showed a high periodontal treatment need. An improvement of periodontal care is necessary for all age groups.

34# *Homotoxicology in odontology.*

Modern homeopathic therapy

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Modern homotoxicology is a bridge between homeopathy and allopathic medicine.

Only in few cases odontologic diseases are caused by local factors. In most cases pathologic processes in the oral cavity are developed due to anatomical, physiological, nutritional, physical, psychical, hormonal, microbiological changes in whole organism. That is why regulation (and treatment) of pathological processes in oral cavity is associated with the regulation (treatment) of pathological processes in whole organism.

Using the six-phase scheme of pathologic cycle proposed by the founder of homotoxicology H. H. Reckeweg it is easier to conceive the development of disease and its treatment. The scheme includes humoral phases: 1) excretion, 2) inflammation); matrix phases: 3) deposition, 4) impregnation; and cellular phases: 5) degeneration, 6) de-differentiation. During the phases 1-3 functions of cellular enzymes are not impaired. During the phases 4-6 the misbalance between various enzymatic systems is developed and the compensatory mechanisms peculiar to the chronic pathologic processes are activated.

Antihomotoxicologic therapy is effective in case of various, especially chronic, pathologies in odontological practice, because it helps the organism to defend against the disease by the means of activation of its detoxicative and immunomodulatory capabilities.

35# *Xerostomy and it's impact on oral health*

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Purpose. To assess the oral cavity status in xerostomic patients, and to evaluate different factors that influence the severity of xerostomia; to record the complications caused by oral dryness. Determination of prevalence of xerostomia among rheumatological in-patients and post radiation treatment in head and neck patients is represented.

Method. 40 patients that were seeking help due to their oral dryness in our clinic were explored. Their oral status was examined, by establishing DMFs, PSR, OHI-S indexes. The counts of cariogenic bacteria (*S.mutans*, *lactobacili*), and *Candida* species were assessed. Salivary gland function was defined according to the results of sialometry and sialoscintigraphy. All the complaints due to xerostomia were documented.

Results. xerostomia was found respectively in 20% and 25% rheumatologic and post radiation patients. Obvious decrease in salivation was found in 2/3 investigated patients who had also higher counts of explored bacteria and DMFs and OHI-S indexes. Sialoscintigraphy could be applied successfully to determine functional capacity of salivary glands rather than sialometry among xerostomic patients of different origin.

Conclusion. dry mouth is followed by a complex of symptoms, leading to impairment of status of oral cavity and quality of life. Integrated examination of oral cavity and anamnesis is needed to diagnose xerostomia and to apply proper treatment that is arranged to each individual.

36# *Periodontal diseases in adolescence*

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Purpose. To describe prevalence and severity of periodontal diseases among urban and rural 11-15 year-olds

in Lithuania and to evaluate risk factors, prevention and treatment needs.

Method. 5645 schoolchildren aged 11, 13 and 15 years were surveyed including specific questions on oral hygiene and gum bleeding. Clinical examination of 787 15-years-olds was performed according to criteria described by WHO and included periodontal status (CPITN), dental caries experience (DMFT) and oral hygiene status (OHI-S).

Results. Prevalence of periodontal diseases among 15 year-old schoolchildren was 81.3%. According to CPITN, gingival bleeding was diagnosed in 46.7%, supragingival and subgingival calculus – in 31.5%, 4-5 mm pockets – in 3.1% of participants. Mean affected sextants was 3.1 ± 0.12 . Statistically significant difference was found between participants in different living areas and gender. 8.0% of examined schoolchildren showed excellent oral hygiene, good – 55.5%, satisfactory – 30.8% and bad – 5.7%. Statistically significant difference was found between participants in different living areas and gender. Prevalence of periodontal diseases and mean of healthy sextants was dependent on oral hygiene.

Conclusions.

1. Prevalence of periodontal diseases was higher among examined boys and rural schoolchildren ($p < 0.01$). They also has more advanced periodontal lesions.

2. 81.3% of participants were in need of oral hygiene instructions, 31.5% for scaling and root planning and 3.1% - for the complex treatment of periodontal diseases.

3. Logistic regression analysis showed that living in rural area, lack of flossing, high mean DMFT and OHI-S seemed to be most important predisposing risk factors of periodontal diseases.

37# Oral health status and possibilities of dental caries prevention among pregnant woman

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Purpose. The aim of the study is to describe oral health status among pregnant women.

Method. Clinical examinations of oral health status were carried out according to criteria described by WHO and included dental caries (prevalence, DMFT, DMFS), increment of dental caries, evaluation of dental caries increment reduction, oral hygiene status (OHI-S), periodontal status (CPITN), gingival status (GI). The test Dentocult® SM Strip mutans (Orion Diagnostic) was used to determinate level of Streptococcus mutans in the saliva.

Results. Total amount of 1070 pregnant women aged 15 – 45 attending various maternity and family clinics of Kaunas were examined during the first trimester of pregnancy. The mean age of pregnant women was 25.63 ± 0.162 years.

Preventive program was applied for 119 pregnant women in the test group and for 121 - in control group.

According to the findings of the study prevalence of dental caries among pregnant women was 99.9% and

varied between 99.7% and 100% in different age groups.

The mean DMFT of test group was 13.4 ± 0.32 , DMFS – 20.0 ± 0.82 . The mean of DMFT of control group was 12.5 ± 0.31 , DMFS – 18.8 ± 0.81 . During pregnancy DMFT increased in both groups, but in test group was lesser in comparison with control group.

Oral hygiene status of pregnant women was satisfactory. OHI-S increased statistically significantly with an age. Oral hygiene habits were insufficient. It was found that oral hygiene had a significant effect on DMFT, DMFS, CPITN and GI (Fisher's test).

Conclusion.

1. The prevalence of dental caries among pregnant women in Kaunas was 99.9%. The DMFT was 12.06 ± 0.11 , and DMFS - 19.05 ± 0.44 . DMFT and DMFS was increasing with an age.

2. The prevalence of periodontal diseases was 93.03%. Healthy periodontal tissues were found only in 6.97% of pregnant women. The mean of the affected periodontal sextants was 4.82 ± 0.06 .

3. 93.03% of pregnant women were in need of oral hygiene instructions and preventive measures application, 58.6% of them were in need of scaling and root planning, and 19.34% - of complex treatment of periodontal diseases.

38# Early childhood caries: analysis of risk factors, prevalence and severity

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Aim. To evaluate oral health status among three years-old children and to examine early childhood caries risk factors.

Methods. Dental caries was scored by surfaces all erupted teeth in accordance with the WHO criteria (WHO Base Methods, 1994)

A special questionnaire of 18 questions has been prepared for parients. The questions about mother's pregnancy, education, social status, teeth erupting time, general child's health, temperament, child's dietary habits, oral hygiene habits, mother's knowledges about ECC, first visit to the dentist, when fluoride toothpaste has been started to use were included.

Results. Prevalence and severity of the early childhood caries has been described first time in Lithuania. Early childhood caries prediction model has been proposed.

Conclusions.

1. Prevalence of dental caries among three years old children in Lithuania was 50.6 % and dmft 2.11 ± 0.10 (SD).

2. Prevalence of early childhood caries severe (ECC-S) was 6.5 % and dmft 7.83 ± 0.10 (SD).

3. According to prepared ECC-S caries prediction model by method logistic regression the main ECC-S risk factor has been selected: mother's education, content of the baby bottle, amount of streptococcus mutans and lactobacillus in saliva.

39# Aerosol formation and spreading characteristics during odontological procedures

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Microorganisms of the patient's oral cavity and his/her blood and saliva may cause different air-borne and blood-borne infectious diseases among odontologists and their assistants who work with patients.

Quantitative analysis and spatial distribution analysis of the environmental spread of oral liquid and cooling liquid mixture were performed during this study. Effectiveness of suction systems of four types was evaluated: without suction, using a small-size suction pump alone, using a small-size and large-size suction pumps, using a small-size suction pump together with an experimental extra-oral aspirator. Quantitative changes of the water aerosol, which enters the environment during the preparation of teeth, were determined in respect of the used suction systems.

The small-size pump system together with an experimental extra-oral suction system eliminated best the aerosol formed during the preparation.

40# Optimization of medico-biological, psycho-social, and economical rehabilitation arguments of toothless person

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Edentulism was not associated with total energy or food intake but was associated with the food groups consumed, particularly fat, micronutrients, and hard-to-chew foods. Previous evaluations of life satisfaction and health have not completely explained the impact of social network, social support, and economics on the oral health-related behavior of elderly patients, particularly in relation to missing teeth. Total tooth lost had dire psycho-social consequences, unlike the denture satisfaction scale.

Tooth loss, especially total tooth loss or edentulism, is the dental equivalent of death. Tooth loss diminishes the quality of life, often substantially, and loss is also related to poorer general health. The first goal is to stop the progression of disease and maintain existing structures. The patient's fundamental need is the continued preservation of what remains of his chewing apparatus rather than the meticulous restoration of what is missing, since what is lost is in a sense irretrievably lost. Complete or partial edentulism that is not the result of trauma or congenital malformation is not a disease, but the sequel of disease left unchecked. A second purpose of prosthodontic treatment is to restore a patient's function and quality of life. There are now good data to indicate that with regard to these 2 factors, patients do quite well without a full complement of teeth.

The oral health describe problems associated with economic analysis of prosthodontic interventions, and explore whether the prescription of implant-supported

overdentures rather than a series of unsatisfactory traditional dentures is the cost-effective treatment of choice.

41# The conception of the cognitive function of the oral cavity

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The innervation of oral cavity plays a major physiologic role in exteroception. It is also of interest clinically, as illustrated by sensory changes after neurosurgical procedures or diseases.

One should make a distinction between proprioceptive and exteroceptive receptors responding to mechanical stimuli (mechanoreceptors). Proprioceptors (muscles spindles, temporo-mandibular joint receptors, inner ear receptors), provide information about the relative positions and movements of the limbs. They are activated from the inside the body. Exteroceptors, located in the periodontal ligament, alveolar mucosa, gingiva and jaw bone, inform the central nervous system of external loading. Mucosal mechanoreceptors serve in a variety of functional capacities including sensation, composite sensory experiences (oral stereognosis), reflex initiation and modulation of patterned motor behavior. In addition, mechanoreceptors in the periodontal ligament are primarily responsible for the tactile function of teeth. The latter receptors can also contribute to the coordination of jaw muscles during biting or chewing. Other receptors, such thermal receptors, taste buds, mechanonociceptors also play a major role in the cognition processes of the oral cavity.

The investigation of the cognitive function of the oral cavity include oral stereognosis, two-point discrimination, vibrotactile function, light touch sensation, thermal sensation, thickness perception threshold, threshold to lateral pressure, oral motor ability. These properties depend on age, dental status, some diseases etc.

The experimental design of the tests is of primary importance as both the method used and the material applied may influence the results dramatically. The presentation order, subject-related factors and the method of scoring all have their effect on the results. So, clear guidelines for further research on cognitive function of the oral cavity are necessary. Continuous efforts should be made to use an appropriate experimental design to allow comparisons.

42# Temporomandibular joint (TMJ) and occlusion

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The etiology of temporomandibular disorders (TMD) is multifactorial and the role of the occlusion in the development of TMD and joint pathology is controversial. TMJ clicking and crepitation seem to be commonly associated with mild disorders in certain morphological and

functional aspects of the masticatory system, and it has been assumed that some occlusomorphological conditions may require slight TMJ and masticatory muscle adaptation. In computed tomography (CT) studies it was found that dysfunctional load-stress leads to structural bone alterations of TMJ as compensation in the sense of a "form changing remodelling". Extreme patho-structural changes often appear on one side only and are causally correlated with muscular dysfunctions. In histological study of human TMJs degenerative changes appeared to be associated primarily with increasing age but in addition depend on mechanical factors, in particular loss of molar support and, to a minor degree, abnormal disc position. Some occlusal factors, especially lateral deviation of the slide between the retruded contact position (RCP) and the intercuspal position (IP), a Class II malocclusion and MTR interferences have in particular been observed to be significantly related to joint sounds. In magnetic resonance image (MRI) study of TMJ it was shown that subjects with clinically evident joint signs such as clicking, crepitation or tenderness on palpation also had pathological MRI findings, especially in regards to configuration, position and function of the disc, and, often disturbances of occlusal relationships between upper and lower jaw. It can be concluded that occlusion plays an important role in causing morphological changes in bone and soft tissue structure of TMJ.

43# Long-term results of partial eminectomy in temporomandibular joint arthrotomies

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Purpose. The purpose of a study was to evaluate a long – term functional and structural results of temporomandibular joint (TMJ) arthrotomy with partial eminectomy treating patients with TMJ dysfunction.

Material and methods. The study was compiled of 58 patients, operated in dptm. of Maxillofacial Surgery at Kaunas Medical University Hospital during a period of 1998 – 2001. 31 patient was operated on applying conventional arthrotomy, 27 – arthrotomy with partial eminectomy. All the patients have been examined clinically and investigated by MRI preoperatively. Post-operative follow up was set up at 1 week, 1 month, 3 month, 6 month, 1 year, 2 years and 5 years. Clinical assessment using the grade evaluation system was carried out and structural state of the joint review by MRI. Statistical analysis was performed using the SPSS/PC+ version 10.0.1 program (SPSS Inc., Chicago, Illinois, USA). The Wilcoxon Matched Pairs Signed Rank Test was applied to detect differences between groups. The level of statistical significance was set at $p=0.01$.

Results. The grade evaluation system revealed the mean statistically reliable difference between the patients operated upon arthrotomy and arthrotomy with partial eminectomy in respect of TMJ functional improvement 1 month after operation (47 ± 0.54 and 15 ± 1.10 , accordingly). Further evaluation showed stable differences during entire follow up period. Structural changes in 41 joint (22 –

for arthrotomized patients and 19 for those with partial eminectomy) evaluated by MRI 5 years after operation in aspect of arthrotic changes showed no statistically reliable difference. All the joints showed mild arthrotic changes at articulating surfaces. Hence, partial eminectomy did not lead to disproportional degeneration of the joint.

Conclusion. Partial eminectomy, additionally to arthrotomy of TMJ facilitates faster rehabilitation of joint function than comparing to conventional arthrotomy. Long - term results show stable functional and structural state of the joint with no disproportional degeneration of skeletal components, suggesting arthrotomy with partial eminectomy as effective and safe method of TMJ surgical treatment.

44# Complications of odontogenic inflammation: necrotizing cervical fasciitis and mediastinitis

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Purpose. This article reviews the demographics, presentation, cause, clinical findings, and treatment of 22 cases of cervical necrotizing fasciitis and mediastinitis of odontogenic origin.

Method. A retrospective chart review of 22 cases treated between 1998 and 2004 was done.

Results. Most cases resulted from an abscessed mandibular molar. There was no significant correlation between general diseases (such as diabetes, hypertension, obesity) and cervical necrotizing fasciitis and mediastinitis. Mortality rate in this study was 4 cases of 22.

Conclusion. Early and proper surgical and therapeutic intervention decreases morbidity and improves the clinical outcome.

45# Surgical treatment of condyle fractures

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Aim. The fracture of mandible is the most common facial traumatic lesion. The fractures of condyle require accurate evaluation in respect of a need for surgical treatment. High condylar fractures may lead to the loss of condylar bone and consequent malocclusion because of shortening of ramus. This study evaluates vertical mandible ramus osteotomy as supplementary surgical technique for correction of the ramus height. Material and methods. During a period of 2000 – 2005 in KMHU department of Maxillofacial surgery 1469 patients with mandible injuries have been treated. 622 (29.2%) of them had mandible condyle fractures with the following locations: low fracture – 26.4%, neck fractures – 51.1%, subcondylar fractures – 17.2%, condyle head fractures – 5.3%. Surgical treatment was applied for 437 (70.25%) patients with fractured condyles. Post-operative follow up was entailing 1 week, 1 month, 3 month and 1 year after surgery. **Results.** The most common operation for condyle frac-

tures was titanium mini plate osteosynthesis. Nevertheless, for 17 operated patients osteosynthesis was not available because of high subcondylar fracture, crashed or osteolysed condyle head. For these patients crashed particles of bone were removed during operation and the ramus height deficiency was restituted performing vertical ramus osteotomy. The evaluation of post operative results revealed no complications and complete upturn of occlusion and mandible movements 1 month after surgery. Conclusions. The vertical mandible ramus osteotomy is indicated in cases of high condylar fractures with dislocation of fragments. The application of this method depends on location of the fracture, dislocation of condyle head and findings during operation (crashed fracture, osteolysis of condyle head, etc.).

46# *Myofascial pain in the face*

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Purpose. To review the peculiarities of clinic, treatment and the pathogenesis of myofascial pain in the face.

Methods. 1. literature review. 2. 64 patients were treated in Kaunas University Hospital regarding myofascial pain in the face.

Results. According to the literature records, 30-70% myofascial pain in the face symptoms are found among healthy people. 21% of examined patients were men, 79% of them were women. Most of patients accrued in the age group of 25-45 years old. Myofascial pain usually is blunt, long lasting and appreciable deep in muscles. Pain can be either very slight or very strong, it can appear at rest or when muscles contract. The pain is rarely simmetrical and usually gets stronger when the trigger points (TT) are palpated and spreads into specific irradiation zones. Pathogenetic factors of myofascial pain were divided into 3 groups: mechanical (30% of examined patients), neurogenic (13% of examined patients), stomatogenic (57% of examined patients). The myofascial pain in the face of 79% of patients was observed along with a dysfunction of a temporal jawbone joint.

Applied treatment:

1. the detection and elimination of the pathogenetic factor.
2. exercises of muscle extension.
3. injections of Sol Lydokaini 2% into trigger points.
4. medical treatment (analgesics, B group vitamins, Diazepam 0.005).
5. the prosthesis of mouth cavity and the treatment of clenched anomalies.
6. consultation of other specialists (neurologist, psychiatrist, psychologist).

Applying this treatment symptoms of pain disappeared for 44% of patients after 1 month, for 40% after 3 months. This pain remained for 6% of patients.

Conclusion. Women more often have the syndrome of myofascial pain. TT forms in muscles during the illness period, which causes pain and has specific irradiation zones. Usually pathogenetic factors are stomatogenetic and mechanic. 79% of cases myofascial

pain was observed along with the dysfunction of temporal jawbone joint.

48# *Altered osteogenic properties of osteoblasts isolated from Periodontitis Patients: sensibility to Tumor Necrosis Factor - Related Apoptosis-inducing Ligand (TRAIL).*

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Purpose. Alveolar bone destruction is a characteristic feature of periodontitis, resulting from an unbalanced bone turnover due to the enhanced osteoclastic bone resorption and low bone formation. The osteoblasts (OBs) are the bone forming cells. The purpose of this study was to evaluate the osteogenic properties and the sensibility toward Tumor Necrosis Factor - related apoptosis-inducing Ligand (TRAIL) apoptotic action in OBs isolated from periodontitis patients (Pp) respect to OBs from controls.

Method. We characterized the osteogenic properties in OBs from Pp and controls by evaluating alkaline phosphatase (ALP) staining and activity, and the formation of mineralized nodules. We also studied the expression of TRAIL receptors, and the sensibility to TRAIL induced apoptosis in OBs isolated from Pp and controls. By ELISA we measured TRAIL levels in serum from Pp and controls.

Results. We demonstrated that, culturing OBs for 10 days in differentiating conditions, the induction of ALP expression and activity were very low in OBs from Pp respect to OBs from controls. Moreover, we showed that the mineralized nodule formation is very low in Pp respect to the controls. In order to understand if OB from Pp were more sensitive to TRAIL induced apoptosis, we also studied the expression of Death Receptor (DR4 and DR5) and Decoy Receptor (DcR1 and DcR2). We demonstrated by western blot and RT-PCR that DcR2 is overexpressed in OB from controls respect to OBs from Pp. Moreover, we showed that treating with TRAIL the OBs from Pp, they appeared more sensitive to TRAIL apoptotic action. Finally, we demonstrated higher TRAIL serum levels in Pp respect to the serum from controls.

Conclusion. In conclusion, our results demonstrated that the OBs from Pp showed a reduced capability to differentiate toward an osteoblastic phenotype and a higher sensibility to the TRAIL apoptotic action respect to controls.

49# *Neurologic complications of maxillary sinus inflammations*

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Injury of neural structures, that are in close relation with maxillary sinus, is not seldom in cases of inflammations of maxillary sinus.

The aim of our study was to evaluate the role of maxillary sinus conditions in the development of trigeminal neuralgia (TN) and inflammation of upper dental neural plexuses (IUDNP) and to compose the plan of the treatment according to the results obtained.

Material and methods. 338 patients with TN of the 2nd trigeminal branch and 112 patients with IUDNP were treated in the Clinic of Maxillo-Facial Surgery of Kaunas Medical University during the period from 1993 to 2006.

For the evaluation of maxillary sinus conditions we used following standard radiological examinations: 1) plain roentgenography in nose-chin projection, 2) sectional roentgenography, 3) contrast roentgenography and 4) computed tomography of the maxillary sinuses.

Results. After summarizing the results of our radiological examinations we found that all patients with TN and IUDNP could be divided into 3 groups according to the radiological findings.

Table. Distributions of the patients with TN and IUDNP across the groups

Diagnosis	Number of patients						Total
	I		II		III		
	n	%	n	%	n	%	
TN	156	46,1	129	38,2	53	15,7	338
IUDNP	63	56,2	34	30,4	15	13,4	112

The 1st (control) group consisted of 156 (46,1%) patients with TN and 63 (56,2%) patients with IUDNP without pathological changes in the maxillary sinuses.

The 2nd group consisted of 129 (38,2%) patients with TN and 34 (30,4%) patients with IUDNP where pneumatization was decreased slightly and mucous membrane thickened slightly on the affected side.

The 3rd group consisted of 53 (15,7%) patients with TN and (13,4%) patients with IUDNP where pneumatization was decreased significantly, asymmetrically and mucous membrane thickened significantly on the affected side.

Conclusions.

1. Evaluation of radiological examination of maxillary sinuses showed that pathological changes were found in more than half of the patients (53,8%) with TN and 43,8% with IUDNP.

2. The plan of treatment of TN and IUDNP was composed according to radiological changes:

a) our method of treatment of TN was effective for the 2nd group patients when maxillary sinus was treated through artificial fistula together with complex medicament treatment – histamine liberators, Ca, antihistaminic and ant-epileptic agents;

b) maxillary sinus operation together and complex medicament treatment with resection of neuro-vascular bundle or decompression is indicated for 3rd group patients;

c) good results were achieved when 2nd group patients with IUDNP, when maxillary sinus was treated through artificial fistula. Radical sinus operation followed by complex medicament treatment and intraoral injections of Kenolog into upper dental neural plexuses was effective for 3rd group patients.

50# Practice analysis of face symmetry parameter difference

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Making face paralysis treatment in reconstruction operation quite or partially is renewable face static and dynamic symmetry. Face symmetry renewable objective and subjective evaluation not always is concurrent. There is set a face symmetry parameter difference, like a steady quantity, who does not make face asymmetry. Aim. Examine face symmetry objectivism chance in people who is sick in face paralysis.

Methods. 32 patients who had face paralysis were examining:

1. Face static and dynamic symmetry subjective estimation was made (patient estimation) before and after treatment.

2. Face static and dynamic symmetry objective estimation was made before and after treatment.

3. Face symmetry before and after treatment is not compared.

4. Analysis by objectivism is partition in two groups.

5. Fact conjunction analysis was made between these two groups using face symmetry parameter difference like a criterion.

6. Four parameter was research of bilateral face sizes, where used original special made up these face parameter meter.

In composite investigative results was process by data-processing program Statistica v.5.5.A

Results.

1. 64 objectives and subjective face symmetry estimation was made.

2. Face static and dynamic symmetry estimation results in both groups faithfully synchronized.

3. The results of the first group estimation conformity face parameter symmetry difference criterion.

4. The results of the second group estimation discrepancy with face parameter symmetry difference criterion are trivial. (6,25%).

Conclusions.

1. Face parameter symmetry difference is objective and sure face static and dynamic symmetry estimation index.

2. Face parameter symmetry difference could be used for sure by objectivity face symmetry estimation results.

51# Manifestation of Goldenhar syndrome in maxillofacial region

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Introduction. Goldenhar syndrome is a complex combination of congenital facial malformations. It has a wide range of symptoms and may look very different from one child to the next: facial deformities and asymmetry, eyes abnormally small or part of upper eyelids missing, malformation of the ears, incomplete development, fusion, or

absence of certain vertebrae, impairment of heart, lung, kidneys, or intestines. Goldenhar syndrome was first described by Dr. Maurice Goldenhar in 1952. It is almost always a sporadic condition with only a few very rare familial cases. Males are affected more frequently than females. This syndrome is seen in all ethnic groups and cultures. The etiology of syndrome is unknown - no DNA link has been found and various environmental causes have been suggested but not proven. Material. In 2006 the female patient of 5 years old with Goldenhar Syndrome was treated at the Department of Maxillofacial Surgery of the Hospital of Kaunas University of Medicine. This patient was one of the identical twins and the only having the syndrome. Routine clinical examination was completed and surgical treatment under general anaesthesia was considered. Results. Examination revealed the following findings: cleft upper lip, cleft soft palate, rudimental additional ears (preauricular skin tags), mandible hypoplasia, epibular dermoids of both eyes. The surgical protocol was compiled by the cleft upper lip and cleft soft palate plastic, removal of rudimental additional ears. No complications were observed after surgery. Ophthalmologic evaluation did not advocate any special surgical treatment at the moment, further follow up applying ultrasound B system was decisive. Conclusions. The patients with Goldenhar syndrome must be examined and evaluated by team of specialists, revealing leading symptoms and establishing treatment protocol. The sequence of surgical interventions depends on severity of manifesting symptoms demanding urgent or planned procedures. The early facial corrections are recommended at age of 6 month, continuing number of operation on demand until maturation of the facial skeleton. Generally prognosis is good and the results of operations in maxillofacial region show low risk.

52# *Remote results of temporal muscle transposition*

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Aim. To evaluate the remote results of temporal muscle transposition and to form reasonable attitude towards forecast of treatment results. **Methods.** 60 patients were examined, for whom transposition of temporal muscle over the zygomatic arch was performed. The patients were divided according their gender, age (below 18, from 18 to 30, from 31 to 50, from 51 to 70 and over 71). The patients were divided according to the way the muscle was used – with the release of fascia or without. Patients were evaluated in different periods (10 days, 1, 3, 6, 9 and 12 months after the operation). Functional status of the transposed muscle was evaluated in 10 point system (tonicity of the cheek and muscle contractility were measured) as well as the esthetical result of the operation (evaluation was performed by both doctor and patient). Symmetry of the cheek soft tissues was evaluated in the different age groups. Data processing program v.5.5A was used to process the results of primary examination. **Results.**

1. Gender had no influence on functional status of the transposed muscle.

2. Females evaluated esthetical results poorer by 1,25 point than doctor.

3. Muscle contractility lower by 32% and cheek tonicity lower by 22% was established in the 4th age group.

4. Excessive cheek soft tissues developed in patients over 50.

5. It correlated with poorer results of esthetic evaluation.

6. Maximum tonicity, contractility of the transposed muscle and the best esthetical results were found 6 months after the operation.

Conclusions.

1. Females evaluate esthetical results more carefully.

2. Section of fascia is not recommended for patients over 50 when performing the temporal muscle transposition.

3. Removal of excessive cheek soft tissues during the 1st operation is recommended for patients over 50.

4. Remote results of the transposition of the temporal muscle 6 months after the operation can be evaluated as final and stable.

53# *Relevance of stylohyoid syndrome*

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Aims. 1. To renew the statistical data of our investigation. 2. To describe methods of examination and clinical manifestation of the ShS. 3. To systematize methods of treatment.

Methods. The stylohyoid apparatus contains of: the styloid process, stylohyoid and stulomandibular ligaments, membrana thyrohyoidea and muscles of hyoid bone. Degenerative and inflammatory processes in this system lead to the developing of the ShS. Patients complain of an acute pain in lateral part of pharynx and neck, submandibularae, sublinguae, temporal areas. The pain attacks last from a few seconds till 1 or 2 minutes. Head motions, swallowing, speech can provoke pain paroxysms. Palpation of styloid region, carotid artery or it's branches can provoke pain attack or cough. The diagnosis is confirmed by X-ray examination of the stylohyoid apparatus (orthopantomography, adaptive roentgenograms of hyloid bone).

Conservative treatment of the ShS using glucocorticoids, antihistaminic, antiepileptic drugs, vasodilators gives only temporary effect. Better results are achieved by surgical treatment of this disease, using instruments of a design. In this way we've treated 28 patients. All of them had no pain recurrence during 0.5 to 7 years after the operation.

Results. We've treated 86 patients (55 females, 30 males). 15 of these patients were between 16-44 years old, 23 between 45-59, 39 between 60-75, 13 were 75 and older. Majority of them suffered from ShS from 8 to 15 years, but only 2 of them had correct diagnose. Other were treated because of trigeminal neuralgia, osteochondrosis, dystonia neurocircularis, mental diseases etc. 56 patients had ShS because of the pathology of styloid process, 29 had the pathology of styloid ligaments.

Conclusions. 1. In most cases the ShS is observed in women of elder age. 2. The diagnosis of the ShS is based on clinical symptoms and X-ray examination. 3. There are 2 methods of treatment of the ShS: conservative and surgical. Better results are achieved by surgical method.

54# *Overview of complications of weight implantation into the upper eye lid.*

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Aim. To evaluate close and remote complications of weight implantation into upper eye lid. Methods. 38 patients were examined, who had the function of the upper eye lid restored by means of golden implants of ellipse shape after the facial nerve injury. Patients were divided into 2 groups regarding the use of protective lenses during the operations, 17 patients (the 1st group) were operated using protective lenses and 21 patient (the 2nd group) was operated without lenses. The following complications were evaluated: conjunctivitis and inflammation of cornea, weight dislocation 1, 7 days and 1 month following the operation, extrusion of weight, functionality of weight. The functionality of weight was evaluated 2 weeks after the implantation.

Results.

1. Only 1 patient from the 1st group had conjunctivitis developed 1 day after the implantation.

2. 13 patients from the 2nd group had conjunctivitis developed 1 day after the implantation.

Weight complications:

3. Weight dislocation:

a. 1 day after the operation in 2 cases,

b. 7 days after the operation in 1 cases,

c. 1 month after the operation in 5 cases.

4. Aseptic extrusion of foreign body in 3 cases.

5. The weight of 6 implants was treated as insufficient for closing the lid completely 2 weeks after the implantation.

Conclusions.

1. Protective lenses are compulsory when performing weight implantation.

2. The proper and methodic bed formation has influence on implant stability.

3. Implants of ellipse shape are reliable and effective means for restoration of upper lid function.

56# *Comparison of treatment methods for mandible angle fractures*

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Aim. To evaluate the effectiveness of different treatment methods in cases of mandibular angle fractures

Methods. The evaluation of mandibular angle fractures on the basis of panoramic radiograms, when applying different treatment methods and relative computerized densitometry examination technique.

Results. Obvious after the expression of the increase or decrease in optical densities in percent, and the comparison of the results to the findings of a previous study (in the table, the percentage of these changes is given in brackets). During the first week following closed fixation methods (wire splint and Kirschner wire fixation), the means of optical densities in the fracture site decreased by, on the average, 6, and following open fixation (osteosynthesis using supra-periosteal miniplate or supra-osseous Zes Pol plate) – by, on the average, 12%. The greatest decrease in optical densities was observed during the second week: following closed fixation – by ca. 12%, and following open fixation – by more than 30%. After 4 weeks, the means of optical densities were not significantly greater than those seen on the 14th day of treatment: after closed fixation – by ca. 3%, and after open fixation – by ca. 6%. The greatest increase in optical densities was observed between the 45th and the 60th day after repositioning and fixation. During this period, mean optical densities following closed fixation increased by 15%, and following open fixation – by more than 30%. On the 60th day of the study, mean optical densities in the fracture site following wire splint fixation and Kirschner wire fixation did not differ essentially from those in the healthy site of the jaw ($p > 0.05$). There were practically no changes in optical densities during the third month of treatment – the densities increased by ca. 0.6%. 90 days after the repositioning and fixation of fracture fragments, there were no essential differences between mean optical densities in the fractured and the healthy sites in cases of osteosynthesis with supra-periosteal miniplate or Zes Pol plate (the difference was statistically unreliable, $p > 0.05$).

Conclusions. Tendency of the dynamics of changes in the mean values of optical densities following fracture fragments repositioning and fixation is analogous irrespectively of the method applied – during the first two weeks, the means of optical density in the fracture site decreased, while from the third week on they increase and become equal to those in healthy sites of the jaws. However, the degree of the changes in optical densities within the same period of time was dependent on the fracture fragments fixation method.

57# *Application of Laserstereolithography to Oral and Maxillofacial Surgery for operation planning and fabrication of custom made prosthesis*

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The introduction of computed tomography (CT) based Laserstereolithography modelling into Oral and Maxillofacial operation planning and individual prosthesis fabrication has encouraged to vigorous research of new clinical applications in these high-technological techniques. The use of Laserstereolithography plastic models shorten the operation time and make complicated operation more safe and predictable. The planned osteotomy lines can be trained with model cuttings and fixation plates can be prebended and fixation screw holes selected.

As method for individual titanium endoprosthesis for reconstruction of ablated or deformed facial bone developed in University of Oulu is presented. In this method a mirror CT model of the patients' normal facial bone is processed to titanium prosthesis. This prosthesis fits exactly into the bone defect following tumor resection. The fixation is carried out through titanium miniplates, which are even prebended on the plastic model and laser welded into the prosthesis. This technique can be used for fabrication of any individual endoprosthesis or implant assuming that the needed CT data from the opposite intact side is available. Even other biomaterials instead of titanium e.g. hydroxyapatite or biomaterial combinations can be used as application of CT scanning and Stereolithography techniques.

58# The planning of the surgical treatment of the periapical lesion in the maxilla according radiographic examination

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Objectives. The purpose of the study was to compare the radiological findings of the periapical lesion in the posterior region of the maxilla in accordance with the findings during the surgery and make suggestions for the planning surgery treatment of the periapical lesion in the maxilla.

Methods. 55 patients with the periapical lesion in the posterior region of the maxilla were analysed. For each of the patient radiographic examination like cone beam CT (New Tom QR-DVD 9000), panoramic and periapical radiographs were performed. The radiographic images of the border of the maxillary sinus, the size of the lesion, relation the periapical lesion with maxillary sinus and swelling of the maxillary sinus mucosa were evaluated. According to the results of radiographic examination the surgical treatment modality was chosen and the surgical treatment such as extirpation of the lesion either without or with sinus surgery was performed. The surgical and radiological findings were compared.

Results. The radiological image of the border of the maxillary sinus was clear visible and no connection of the periapical lesion with the maxillary sinus during the surgery was observed in 18 cases. The interrupted border of the maxillary sinus and connection of the periapical lesion with the maxillary sinus were found in 18 cases. Inconsistency between the radiological findings of the border of the maxillary sinus and findings during the surgery was found in 7 cases. The radiological image of the border of the maxillary sinus was not clear visible in 12 cases. Extirpation of the lesion without sinus surgery was performed in 37 cases, where fistuloplastica was performed in 2 of the cases. Extirpation of the lesion with sinus surgery was performed in 18 cases, where the fistuloplastica was performed in 9 of the cases.

Conclusions. The suggestiveness of radiological findings for the surgical treatment options is still unclear, because, within the limitation of the study, only 65 % of cases radiological findings of the border of the maxillary

sinus corresponded with surgical. Therefore, the planning of surgical treatment depends not only on the radiographic images of the border of the maxillary sinus, but also the planning of surgical treatment depends on the size of the lesion, relation the periapical lesion with maxillary sinus and swelling of sinus mucosa.

59# Application of bone grafts treating jaw cysts

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The aim. The aim of the study was to investigate the localization of cysts in the jaws and teeth groups, the most common complaints of the patients and changes in the maxillofacial system, associated with this pathology, and the treatment applied. The biggest attention was paid on the treatment of cysts, application of bone grafts. The purpose was to compare the healing of tissues, new bone formation, resorption of bone graft.

Methods. In this study 850 cases of odontogenic cysts of the jaws, treated during the period of 1986-2004 were analyzed. The data, used in this study, was collected in the Department of Oral and Maxillofacial Surgery of the KMHU. The case histories of the patients for whom radicular and follicular cysts were diagnosed, were analyzed retrospectively. All the necessary information concerning patients was found in medical documentation (Form No.003/a).

Considering time it is a retrospective study. Considering methods of collecting the material it is a duplication study. Considering extent it is a longitudinal study.

Results. Case histories of 455 men and 395 women had been analyzed. The age of the patients varied from 4 to 87, with the average of 35.8. 63% of the diagnosed cysts were located in the maxilla, 37% of them – in the mandible. The common complaints of the patients were bump, swelling, pain, discharge leaking from the fistula or alveolus after tooth extraction, increased teeth mobility, paresthesia; changes in the maxillofacial system as intraoral or facial asymmetry, inflated bone with sensation of an egg shell cracking revealed under palpation, swelling at the mucofacial fold, mobile teeth and fistula. Odontogenic cysts are located in both genders equally; maxillary cysts are 1.5 times as frequent as mandibular cysts. Most cysts diagnosed in maxillary fore teeth area were from 13th to 23rd tooth.

The treatment of cysts was surgical – cystotomy or cystectomy. Some of the cysts cavities were filled with bone graft materials – 16,94% (n=144): bone autografts (e.g. iliac crest) 4,94% (n=42); xenogenic bone grafts (e.g. Bio-oss, Osteograf/N) – 6,35% (n=54); aloplastic bone grafts (e.g. AHA, TCP) – 5,64% (n=48). Almost all grafted defects ultimately regenerated with newly formed bone and a developing bone marrow. The grafting materials showed complete osseous integration. However, this rule did not work if bone defects were less than 5 mm as if using or not bone grafts identical healing results were gained.

Conclusions. Maxillary cysts are 1.5 times as frequent as mandibular cysts, commonly located at the region from 13th to 23rd tooth. The pathology equally af-

fects both sides of jaws. The treatment was surgical removal of the cyst (cystotomy or cystectomy).

When cavities of the cysts were filled with bone grafts, bone restoration and formation was much faster and productive, than in those cases when bone graft has not been used.

60# Prevention of bleeding and thromboembolism in maxillofacial surgery

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Aim. The frequency of post – operative thromboembolic complications not applying preventive items varies in different clinics from 25 to 50%. The most common complications are profound vein thrombosis, pulmonal embolism, sudden death caused by massive embolism of pulmonal artery. This shows importance of accurate preoperative examination of the patients, evaluation of the factors influencing blood coagulation as well as employment of appropriate prophylaxis. The purpose of a study was to estimate risk groups for thromboembolic complications and bleeding among the patients and advocate appropriate prevention. **Material.** During a period of 2002 – 2005 in KМУH Department of Maxillofacial surgery 15 patients undergoing substantial operations in maxillofacial region have been monitored. The operations performed for selected patients were as following: bimaxillary osteotomies (6 cases), radical resection of the mouth floor and neck lymphadectomy because of cancer (4 cases), multiple osteosynthesis for severely traumatized patients (5 cases). For all the patients DATL and prothrombine time (Quick method) was examined preoperatively. **Results.** In 12 (80.5%) cases values of PATT and Quick time were found at normal levels: variation of PATT was from 27 to 33 sec., Quick time from 87 to 92%, respectively. In 1 case PATT was estimated at 41 sec. and further investigation of coagulation factors was performed because of that. Results revealed deficiency of the V factor. In 2 cases (13%) the Quick time was found as prolonged. One case of post-operative bleeding from ethmoidal artery was detected angiographically and single dose of synthetic vitamin K administrated for the patient was sufficient. One case had a lethal outcome because of massive thromboembolism of pulmonal artery. **Conclusions.** 1. The estimated risk groups for thromboembolic complications and bleeding involves the patients with thrombocitopathias, coagulopathias and vasculopathias, taking medications changing blood coagulation properties. 2. The following prevention items are recommended: administration of 0.3ml Fraxiparin s/c for all the patients 12 hours before substantial operations, rigid preoperative leg bandaging, post-operative feet and leg exercises, segmental pneumatic compression, early footing. In case of deficiency of coagulation factors the transfusion of frozen native plasma during operation is indicated. In cases of prolonged Quick time, after operation administration of Heparin s/c is advocated, permanently monitoring PATT.

61# Lymphoepithelial – myoepithelial proliferation of parotid glands in case of Sjögren syndrome

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Introduction. Sjögren's syndrome is an autoimmune disease affecting exocrine glands. It is one of the most prevalent autoimmune disorders. 90% of patients are females. The average age of onset is 40 years. 2 to 5% of persons aged 60 years and above have primary Sjögren's syndrome. In 50% of cases Sjögren's syndrome manifests isolate, and in other 50% coexists with other connective tissue diseases (primary and secondary forms). The hallmark symptoms are xerophthalmia and xerostomia. Also symptoms of affection of the kidneys, GI tract, blood vessels, lung, liver, pancreas, and the central nervous system may be presented correspondingly. Sjögren's syndrome affecting salivary glands belongs to the group of benign lymphoepithelial lesions, described in 1952 by Godwin. The diagnosis is confirmed upon clinical examination, positive Antinuclear Antibody test (ANA) and biopsy. **Material.** Patient V. Z. of 65 years old, female, was treated in Dptm. of Maxillofacial Surgery at Kaunas University of Medicine Hospital in 2005. The patient was diagnosed with Sjögren's syndrome for 7 years. The leading symptoms at the moment of appeal at 2005 were xerophthalmia, xerostomia and giant enlargement of parotid glands. Diagnosis of primary Sjögren's syndrome was confirmed by blood test and biopsy. The treatment of severely enlarged parotid glands indicated bilateral parotidectomy. **Results.** Parotidectomies were performed in two stages, period between operations comprised 8 month. After both operations temporary dysfunction of facial nerve was noticed. The recovery of facial nerve function was estimated after 6 month. No other complications observed. Histological examination of surgical material revealed salivary gland infiltration by lymphocytes, follicles of lymphoid tissue, proliferation of connective tissue, foci of epithelial – myoepithelial cells, numerous dilatated cystic chambers covered by prism and multilayer plane epithelial cells and filled by mucous pattern.

Conclusions. The majority of the patients with Sjögren's syndrome have symptoms related to diminished lacrimal and salivary gland functions. Only sporadically changes of salivary glands require surgical interventions. Nevertheless, parotidectomy for the patients with primary Sjögren's syndrome showed good outcome with temporary dysfunction of the facial nerve, resulting significant improvement of patient's life quality.

62# Morphometric characteristic of the human mandible and mandibular cortical layer

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The aim. The aim of the study was to morphometrically examine the mandible and its cortical layer.

Methods. We measured 28 native mandibles, performed vertical linear measurements in ortho-

pantomographic images of the mandibles, investigated the mandible cortical layer using computerized tomography and cut the mandibles into fragments and measured the thickness of the cortical layer in the mandible base, in the vestibular and lingual surfaces.

Results. Measurements of the native mandibles showed that mean values of height measurements in respective fragments on both side were equal (B1 27.6 ± 0.91 and B2 27.7 ± 0.73 ; D1 13.7 ± 0.23 and D2 13.7 ± 0.23). B – the distance between the upper margin of the alveolar part and the margin of the mandible base; D – the distance between the middle of the mental foramen and the margin of the mandible base.

The findings of the vertical linear measurements, obtained in fragment D1 and D2 in OPG's did not differ significantly from the values obtained after measuring the same distance on the vestibular surface of the native mandible.

The comparison of the measurement results obtained from the evaluation of the thickness of the CL in the mandible base in OPG's and CT's showed moderate significant correlation between the values according to Pearson correlation (N=26; $r=0.4$; $p<0.05$).

After the comparison of the measurement results obtained from the evaluation of the thickness of the CL at the mental foramen in mandible base using CT and cut fragments show moderate and high especially significant correlation between the mean values ($r=0.854$; $p<0.001$); the comparison of the measurements results of the thickness of the CL in the vestibular surfaces $r=0.580$, $p<0.01$; in the lingual surfaces $r=0.423$, $p<0.05$.

Conclusions. Due to low influence of the vertical magnification of the OPG, the distance between the middle of the mental foramen and the margin of the mandible base is suitable for the performance of precise linear measurements.

The comparison of the measurement results obtained from the evaluation of the thickness of the CL in the mandible base in OPG's, CT's and sectioned fragments showed that due to the positioning of the mandible and the magnification of the radiograph, the comparison of these studies is inexpedient.

The results of the thickness of the CL in the mandible base, obtained using CT, precisely corresponded to those obtained from the measurements of sectioned mandible fragments.

63# Vascular lesions in the maxillofacial area: hemangiomas and vascular malformations.

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The aim of the study. To clarify the classification of vascular anomalies and to discuss the treatment methods in the cases of hemangiomas and vascular malformations (especially in the cases of high flow arterial or arteriovenous malformations)

Methods. The review of literature is presented and methods of treatment in various cases of vascular anomalies are discussed. The very difficult case of high flow intramandibular arterial malformation (patient – 19 year old man) with massive life threatening bleeding is also presented.

Results. Hemangioma presents at birth, most diagnosed by 1 year old, rapid growth until age 6-8 month, then slows and involutes by 5-9 years. Osseous involment is rare. Usually low flow. Frequently does not need treatment.

Vascular malformation presents at birth but often not diagnosed until second decade. Slow growth throughout life. Does not involute. Often has osseous involment. May be low flow or high flow and often requires treatment. The treatment of high flow vascular malformation must be embolisation and/or the surgery of affected area. In the case of low flow malformation excision, laser or sclerosing agent can be used.

Conclusions. Vascular lesions in the maxillofacial area occur commonly. Knowledge of etiopathogenesis of vascular anomalies are very important to choosing the treatment time and methods. The treatment of high flow vascular malformation needs close collaboration of maxillofacial surgeons and angiologists. Incorrect method of treatment in the case of high flow malformation can lead to the death.

64# Lipomas of the head and neck regions

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Purpose. Evaluate probable causes of lipomas development, symptoms and signs, discuss the diagnostic methods, differential diagnosis, available treatment methods, complications.

Methods. Lipoma is a benign tumor of the fat tissue. Lipomas comprise 2-16% of all benign tumors. In population lipomas are found to 0.01-0.1%. Lipomas of head and neck comprise 1/4 of entire cases in the body. This benign tumor starts to develop as usually for the youngsters, nevertheless patients begin to complain at the older age.

Results. In the department of Maxillofacial surgery at Kaunas University hospital annually 3 to 10 patients with head and neck lipomas undergo specialized treatment. This comprise 2-5% of all benign tumor cases treated in this department. For all the patients surgical treatment was applied with low incidence of complications. In this report severe case of lipoma is presented.

Conclusions. There are no typical clinical symptoms matching lipomas only.

The cases of lipomas in head and neck regions require surgical treatment.

Early removal of lipomas reduces amount of operation, decrease risk of complications and hazard to health state and life.

65# Hyperbaric oxygenation in maxillofacial surgery

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The direct etiopathogenetic factor of inflammatory diseases in maxillofacial region is microorganisms. Mi-

crobiologic investigation reveals policulture, composed of anaerobic and aerobic microorganisms in 50.0-59.0% of cases. Around the inflammatory focus the thrombosis of blood vessels and tissue hypoxia develops. The aim of our study was to evaluate influence of hyperbaric oxygenation to regression of inflammatory signs. Material. In the KMH department of Maxillofacial surgery during a period of 2001-2005, 903 patients with facial and neck phlegmone (655 patients) and traumatic osteomyelitis (248 patients) were treated. All the patients underwent surgical treatment (necrectomy, sequestrectomy and others) with simultaneous antibacterial therapy. For 132 patients (14.6% of all cases) hyperbaric oxygenation procedures have been applied. Evaluation of treatment efficacy revealed regression of facial edema, normalization of body temperature, positive dynamics of blood formula changes. Results. Applying hyperbaric oxygenation the edema of facial soft tissues remained to 45% of patients on the 4th day, body temperature normalizes the 2nd-3rd day, values of peripheral blood – after 7 days. The regression of the mentioned characters without hyperbaric oxygenation procedures occur with delay of 2-3 days. Conclusions. 1. Hyperbaric oxygenation is effective treatment method for maxillofacial region disorders. 2. Applying procedures of hyperbaric oxygenation the signs of inflammation regress 2 – 3 days earlier.

66# The use of the diode Laser in dentistry. Practical use in soft tissue surgery.

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Purpose. The clinical test and use of the diode laser in clinical use to treat soft tissue disease and problems in oral and periodontal surgery.

To show benefits and advantages in treatment of the soft tissue in a wide range of treatment applications.

Method. 6 years clinical use and experience in the use of the American Dental laser/Diode laser. Output range used 0.4-3.5 W.

Fiberoptic cable in variable diameters with handpiece.

The laser has been used in the treatment of; mucogingival plastic surgery and recontouring of gingival tissue, endodontic treatment, bleeding control in endodontic surgery/prosthetic treatment, frenum surgery, periodontal pocket treatment, soft tissue plastic in the closing of diastemas, soft tissue plastic surgery in cosmetic smile enhancement, minor surgery of the skin and lip to remove minor tumors and scarification.

Results. Clinical use has shown that the use of diode laser has been beneficial and time saving in a variable treatment situations.

The best results and benefit has been in soft tissue sculpting and plastic soft tissue surgery in the mouth, in minor fibroma/nevus/papilloma removal of the lip and skin. There has been little no bleeding or discomfort for the patient and the result has been predictable. Care has to be taken if biopsy and histological studies must be taken. The use of the laser is timesaving and gives good hemostases and control used on soft tissue in prosthetic and filling therapy.

Some surgery can be done without the use of anaesthetic use.

The use in periodontal pocket treatment has not shown me to much benefit to advocate the use in this kind of treatment on a regular basis. Desinfection of necrotic pulp tissue has shown to be a benefit.

Care must be taken to not use too much output in contact with bone.

Conclusion. The diode laser shows to give benefits in variety of treatment situations and the use is recommended.

67# The analysis of the teeth loss causes in different age groups of Lithuanian population

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The aim. To collect data about the reasons of the teeth extractions in four dental clinics: to analyse the reason, why the patients loose their permanent dentition, to evaluate the dependence of the reasons on the subjective/objective factors. **Methods.** A survey was carried out in dental clinic of Kaunas University of Medicine, in Central Out-patient Clinic of Vilnius, in Out-patient Clinic of Kalniečiai in Kaunas and in Out-patient Clinic in Marijampole. A survey was carried out for one month. 201 patients with extractive teeth were examined.

The analysis of the data.

1) The patients were divided into 4 groups by age (up to 30, 31-50, 51-65, over 65 years old);

2) The evaluation was performed by sex;

3) The six most common reasons of the teeth extraction were analysed.

Statistical analysis was performed using program packet STATISTICA v.5.5 A.

Results.

1) Having analysed 201 patients, it appeared that 37,8% men and 62,2% women underwent teeth extraction procedure.

2) The most common reason of tooth loss was the complicated caries.

3) There were observed the statistically significant correlations between:

- complicated tooth caries and age;

- periodontal pathology (when the conservative treatment was not carried out) and age.

4) Pain does not correlate with age, i.e. the result is statistically insignificant.

5) It was noticed, the most commonly extracted teeth are 16th (12 cases), 14th, 23rd, 36th teeth (11 cases of each one), 17th, 24th teeth (10 cases of each one)

6) The dominant reasons of the teeth extraction in different dental clinics were established.

Conclusions.

1) The sex of the patient has influence on the teeth loss.

2) The age has a negative influence on the loss of permanent dentition.

3) The caries prevention was incompletely effective.

4) The big number of the teeth loss becomes a prob-

lem, because the oral hygiene as well as oral health behaviour and attitude of Lithuanian population are rather poor.

68# Complications of impacted wisdom teeth surgical treatment

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Aim. The impaction of lower wisdom teeth is rather usual pathology of eruption. Presently in KМУH Department of Maxillofacial surgery the number of patients with teeth impaction and complications related to that extensively grows. This motivated us to analyze causes, clinical onset and treatment tactics of this expression more detail. **Material and methods.** During a period of 2001 – 2005 in KМУH Department of Maxillofacial surgery 254 patients with lower wisdom teeth impaction were treated. This comprised 2.53% of all the patients treated at inpatient department. 44 patients appealed for cure because of tooth impaction or complications of its treatment. The majority of complications were inflammations – submandibular, mouth floor, pterygomandibular space and parapharyngeal (31 case). To the one third of the patients inflammation developed after the removal of impacted teeth. Also 3 cases were found when giant mandible follicular cysts were caused by impacted lower wisdom teeth and 3 cases of the mandible angle fractures as complication of impacted wisdom teeth removal. **Results.** During an investigation period the number of patients with lower wisdom teeth impaction increased 3 times. The major changes in ratio were found between the patients with asymptomatic impacted teeth and hospitalized because of impaction or its treatment complications. In 2001 at the department 32 (1.68%) patients and 13 (40.62%) of them with complications have been treated, in 2005 – accordingly 104 (4.65%) and 19 (18.27%). **Conclusions.** It may be concluded that viewpoint among the patients and clinicians towards teeth impaction as to disease intensifies. Impacted lower wisdom teeth indicated to be removed not awaiting for complications.

69# Importance of nerve and vessel bundles decompression during jaw operations

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Introduction. Surgical procedures involving bones of facial skeleton are closely related to exposure of the peripheral branches of Trigeminal nerve (TN). Injury and

functional recovery of the nerve depends on the grade of nerve injury and treatment methods applied during operation and after the surgery. Objective assessment of the functional state of the nerve can be processed applying sensometry. Results of studies carried out in Kaunas University of Medicine, dptm. of Maxillofacial surgery revealed that rrecovery of nerve function is the fastest if decompression during operation has been performed. The aim of this study was to summarize anatomical locations of surgical procedures involving facial bones that require decompression of peripheral branches of TN.

Material and methods. The study was carried out in Kaunas University of Medicine Hospital, dptm. of Maxillofacial surgery during a period of 2001 – 2005. The first group of the patients (n=174) involved in a study was composed of those for whom appropriate decompression of nerve and vessel bundle was applied during operation. The following cases and surgical procedures were distinguished: patients with fractures of the midface undergoing osteosynthesis, patients undergoing Le Fort I osteotomies, patients with fractured mandible treated by osteosynthesis and patients going through bilateral sagittal split osteotomy (BSSO). For all the patients during operation appropriate nerve and vessel bundles were decompressed: in case of midface fractures – infraorbital bundle, Le Fort I osteotomy – greater palatal bundle, mandible fractures – inferior alveolar and mental, during BSSO – inferior alveolar as well. The second group (n=48) was composed of the patients for whom decompression in case of similar procedures was not performed because of conventional technique. Preoperative and postoperative sensometry 14 days, 1, 3, 6 and 12 month after operation was performed measuring pain thresholds of appropriate innervation zones of TN at affected and intact sides, asymmetry index calculated. Control group was compiled of 20 healthy persons. Statistical analysis was performed using software SPSS/PC+ version 10.0.1 program (SPSS Inc., Chicago, Illinois, USA).

Results. Postoperative sensometry revealed statistically reliable difference between decompressed and non decompressed patients, in respect of functional recovery of TN. Already 1 month after the operation with decompression the pain thresholds at the affected side substantially did not differ from the healthy one, according their asymmetry indexes (1.0 ± 0.04) and did not diverge from control group ($p > 0.05$).

Conclusions. Decompression of nerve and vessel bundles during jaw operations facilitates functional recovery of peripheral branches of TN. The following clinical cases and anatomical locations require decompression of nerve and vessel bundle: infraorbital – in case of midface fractures, greater palatal – in Le Fort I osteotomies, inferior alveolar – in cases of mandible fractures and BSSO, mental – in fractured mandible cases.

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