



Striding Forward Towards
New Scientific
And Practical Frontiers



ABSTRACT BOOK

The 3rd International Congress of AzOMS
The 33rd ICMFS–Congress in Baku

9–11 October 2025

Committees

Prof. Aliyev A.J. (Azerbaijan)

Prof. Rahimov Ch.R. (Azerbaijan)

Prof. Mustafa Sancar Ataç (Turkiye)

Prof. S.M. Balaji (India)

Prof. Christos Perisanidis (Greece)

Prof. Manlio Galie (Italy)

Dr. Alejandro Martinez (Mexico)

Prof. Galarndar V.M. (Azerbaijan)

Prof. Panahian V. M (Azerbaijan)

Dr. Hasanov J.H. (Azerbaijan)

Dr. Rahimov N.R. (Azerbaijan)

Dos. Farzaliyev İ.M. (Azerbaijan) – scientific secretary

Dr. Hacıyeva G.İ. (Azerbaijan) – technical secretary

Oral surgery

Dental implantology

Periodontal surgery [OS]

[OS]

Clinical Application of WiFi-Mesh Membranes in Alveolar Bone Augmentation

Guliyev A.H., Ahmadov E.T., Jafarov M.A.

Azerbaijan Medical University, Department of Oral and Maxillofacial Surgery.

Presentation type – symposium

Relevance. Although multiple techniques exist for the restoration of both vertical and horizontal bone dimensions in the jaws during dental implantation, achieving an adequate amount of bone through alveolar bone augmentation continues to pose a considerable challenge for clinicians. It is well documented that mobility of the soft tissue covering the implanted bone biomaterial predisposes the graft to fibrous tissue encapsulation, thereby impairing bone regeneration and precluding effective osseointegration. During the use of resorbable membranes, their degradation within 30-40 days exposes the superficial portion of the bone biomaterial to fibrous tissue infiltration, thereby compromising the outcome of augmentation and preventing the attainment of the desired bone volume.

Materials and Methods. In consideration of these factors, the decision was made in our clinic to utilize non-resorbable WiFi-Mesh PTFE membranes. Vertical augmentation was carried out in eight patients with insufficient bone height. The procedure was performed simultaneously with implantation, whereby Bio-Oss bone graft material was placed around the implant threads protruding beyond the native bone, subsequently covered with a WiFi-Mesh membrane, and stabilized using cover screws and fixation pins. At six months postoperatively, upon removal of the membrane, the formation of predominantly type II-III bone was observed, with complete coverage of the implant threads.

In seven patients with complete edentulism, horizontal augmentation was performed using WiFi-Mesh membranes to preserve the bone graft material, and the membranes were stabilized with fixation pins. At six months postoperatively, histoclinical assessment following membrane removal demonstrated the predominance of type IV bone, with localized areas of type III bone formation identified. In two patients, mucosal perforation with marginal membrane exposure

was observed; however, bone regeneration was nevertheless confirmed. During subsequent dental implantation, insertion torque values of 20-30 Ncm were achieved, and definitive fixed dental prostheses were delivered after a four-month healing period.

Results. The use of non-resorbable WiFi-Mesh membranes in both vertical and horizontal augmentation procedures ensures the immobilization of the bone graft material and facilitates the formation of sufficient bone to allow successful implantation and osseointegration. Simultaneous implantation during augmentation, combined with fixation of the membrane over the implant using cover screws, resulted in more predictable and mature bone formation. In all patients, successful osseointegration of the implants was achieved, and definitive fixed prostheses were subsequently delivered.

[OS]

Sinus Lifting: Surgical Technique and Failures

Hasanov F.I.

Presentation type – symposium

Introduction Dental implantation is one of the most advanced and widespread procedures in modern dentistry. However, the volume of bone tissue in the jaw can decrease due to various reasons, such as the structure of the maxillary sinus and bone atrophy that occurs after tooth extraction, which creates a difficulty for dental implantation. In such cases, a sinus lifting operation is performed. Our research is dedicated to studying the open sinus lifting method.

Objective of the study

To monitor the osseointegration of dental implants after the application of xenograft bone grafts and a collagen membrane using the open sinus lifting technique.

To evaluate the staged performance of sinus lifting operations (one-stage and two-stage procedures) and compare the effectiveness of both approaches based on clinical results.

To investigate complications in sinus lifting operations.

Materials and Methods Cone-beam computed tomography (CBCT) was used as the most important diagnostic tool for the clinical evaluation of patients and the selection of the correct method in sinus lifting operations. The CBCT examination method allows for an accurate assessment of bone thickness, volume, and overall condition. With this imaging tool, accuracy was ensured, and it was possible to plan the operation and optimize the results for patients. 72 patients participated in this study.

Overall Results The high success rates obtained in both approaches (96% in the one-stage approach, 95.2% in the two-stage approach) prove the high effectiveness of sinus lifting

operations with modern surgical methods and the use of biomaterials. These results confirm both the safety of the operation and its long-term clinical success.

Conclusion The results of our research show that the majority of long-term complications were due to improper calculation of prosthetic loading and the force applied to the dental implant.

[OS]

Customized Subperiosteal Implants in the Management of the Atrophic Maxilla

Christos Perisanidis

Presentation type – symposium

The rehabilitation of the severely atrophic maxilla remains a significant clinical challenge, where conventional implants and grafting procedures may be unsuitable. Customized subperiosteal implants, designed via CAD/CAM technology and based on three-dimensional imaging, provide a patient-specific alternative. Modern titanium frameworks ensure precise adaptation, stability, and favourable biomechanical load distribution, overcoming limitations of earlier designs. Clinical outcomes report high survival rates, functional success, and aesthetic satisfaction, with reduced surgical morbidity compared to extensive grafting or zygomatic implants. While long-term evidence is still emerging, customized subperiosteal implants represent a promising, minimally invasive solution for managing extreme maxillary atrophy.

[OS]

Subsinusal approach of zygomatic implants in the treatment of combination syndrome. A retrospective 5 years follow-up of 10 cases.

Andre S. Serrano

Presentation type – symposium

Introduction: Combination syndrome is described as a condition caused by the presence of the lower anterior teeth and the absence of the posteriors and resulting in significant maxillary anterior alveolar resorption, often in cases of a complete maxillary denture opposing a bilateral distal extension mandibular partial denture. Severe maxillary resorption is a common feature in these cases. The use of zygomatic implants in the rehabilitation of severe atrophic maxilla has become more predictable as modifications of the original technique has shown to decrease dramatically the rate of late complications, such as oral–sinus communication or soft tissue recession. A new modification of the original technique is presented where a "subsinusal

approach" via lifting of the sinusal membrane without bone substitutes or bone grafts is maintained with the zygomatic implant as a tent.

Materials and method: Ten patients presenting combination syndrome associated with posterior ridge display during smile were treated by "subsinusal approach" for zygomatic implants from november 2018 to february 2023. After at least 6 months postoperatively the patients were evaluated regarding the ORIS Criteria of success for the zygoma-related rehabilitation.

Results: 9 female and 1 male patients were treated with 20 zygomatic implants with the subapical approach. All the implants (100%) were considered successful both clinically and radiographically by the ORIS Criteria.

Discussion: Treatment of patients with combination syndrome can be a challenge for a dental practitioner. These Combination Syndrome patients as well as many other clinical cases of extensive three-dimensional maxillary bone loss have guided dental clinicians and surgeons towards the development of many innovative surgical and prosthetic techniques of correction of maxillary bone atrophy combined with immediate or delayed placement of dental implants. The "subsinusal approach" was demonstrated to be a very efficient and time saving treatment with successful results after 5 years follow-up.

[OS]

Systematic Approach to Maximizing Esthetic Outcomes in Implant Dentistry: A Step-by-Step Guide for the Anterior Maxilla

Elcin Bedeloglu

Presentation type – symposium

Objectives: The aim of this presentation is to evaluate step-by-step treatment protocols for achieving maximum success in aesthetic zone implant cases and to determine criteria for long-term outcomes.

Materials and Methods: Anterior zone implant cases consist of complex and challenging treatments. In this presentation, treatment protocols will be evaluated step by step through a total of 4 cases, progressing from simple to complex cases. Standardized protocols were applied in all cases including: comprehensive treatment planning with CBCT analysis, atraumatic tooth extraction, ideal 3D implant positioning, platform switching application, soft and hard tissue augmentation when indicated, and soft tissue management.

Results: When treatment protocols established in the literature are correctly applied, successful results are obtained in all cases.

Conclusion: Implementation of evidence-based step-by-step protocols enables predictable success in aesthetic zone implantology regardless of case complexity. Systematic risk assessment, appropriate treatment modifications, and adherence to established treatment protocols are essential for long-term aesthetic and functional outcomes.

Keywords: aesthetic zone, dental implants, step-by-step protocol, treatment planning, soft tissue management, risk assessment, predictable outcomes.

[OS]

Reconstruction of the severely resorbed totally edentulous maxilla using the tent pole technique.

Togrul Aliyev, Mammadov J. Aliyeva M, Abdullayev E., Bilalzadeh S., Iskenderova S.

Presentation type – symposium

Aim: Augmentation of edentulous maxillary severely horizontal alveolar ridge defects for implant placement using titanium screws in combination with particulate human mineralized allograft, and injectable platelet rich fibrin (i-PRF) mixture in a "tenting" fashion, to augment edentulous maxillary severely horizontal alveolar ridge defects for implant placement.

Case: This prospective case study evaluated augmentation in patient with large horizontal ridge defect horizontal ridge augmentation was performed using mineralized allograft and i-PRF mixture placed around titanium screws to tent out the soft tissue matrix. The maxillary ridge was clinically evaluated 4 months after augmentation, and implants were placed at that time. Pre operative, post operative 1 day and post operative 5 month CBCT were taken for radiographic evaluations. Implants were successfully placed at grafted site 4 to 5 months after the original graft date. Clinical evaluation of the grafted sites upon re-entry revealed uniform ridge anatomy. Functional loadings of implants were done at the end of 3 months osseointegration period.

Conclusion: Tenting of the periosteum and soft tissue matrix with titanium screws maintains space and minimizes resorption of mineralized particulate allograft. This technique offers predictable functional and esthetic reconstruction of large 3 dimensional defects without the use of autogenous bone and is capable of osseointegration. More studies are needed to evaluate the stability of 3 dimensional grafted bone after long-term loading.

[OS]

Military Medical Examination of Servicemen with Jaw Defects

Alikuliev V., Ahmadov E., Aliyev B., Rezai Vahid A.

Azerbaijan Medical University, Department of Oral and Maxillofacial Surgery, Baku, Azerbaijan

Presentation type – oral presentation

Relevance. Statistics on military injuries demonstrate a marked increase in their proportion among overall trauma in local armed conflicts, reaching up to 9%. Mandibular fractures account for 70–80% of facial skeletal injuries, while maxillary fractures comprise 4–5%.

The process of medical examination of servicemen in Azerbaijan is regulated by the Decree of the Cabinet of Ministers No. 59 of February 29, 2008, "Regulations on Military Medical Examination", together with the annexed "Schedule of Diseases".

However, our analysis of this document in relation to the assessment of the dental status of servicemen revealed numerous cross-references in the descriptive sections of pathological conditions and their associated degrees of functional impairment. Clarifying and systematizing these interrelations will enhance the quality of military medical examination in the armed forces of the Republic of Azerbaijan.

Objective. To improve the accuracy and quality of medical examination of servicemen with defects of the maxilla and mandible.

Materials and Methods. The clinical material included 50 servicemen who sustained gunshot injuries to the maxillofacial region during the First Karabakh War (1992–1994). A retrospective analysis of medical records, photographic documentation, and radiographs was conducted. Based on the discharge summaries of the wounded, conditional examination was performed according to the dental articles of the Schedule of Diseases.

According to the Schedule of Diseases, individuals with injuries and the sequelae of other external impacts are certified under Article 81. However, the descriptive section of this article addresses only unreconstructed defects of the facial bones, whereas for reconstructed defects, application of Article 56 is recommended. In Article 56, jaw defects not replaced by grafts are classified under Category "D" (unfit for military service, removed from the register). This corresponds to a severe degree of masticatory dysfunction. No instructions regarding the assessment of servicemen with jaw defects reconstructed with grafts were found in the explanatory notes of this article.

In this study, servicemen who underwent treatment were divided into the following groups:

Autograft, no prosthetic rehabilitation;

Autograft, removable prosthesis;

Autograft, fixed prosthesis;

Allograft, no prosthetic rehabilitation;

Allograft with bone autograft, no prosthetic rehabilitation;

Allograft with bone autograft, removable prosthesis;

Allograft with bone autograft, fixed prosthesis.

Results and Conclusion. Servicemen without prosthetic rehabilitation or with removable prostheses were assigned a moderate degree of masticatory dysfunction and certified under Category "C" (unfit for peacetime service, fit for wartime service with restrictions). Servicemen with fixed prostheses demonstrated a mild degree of masticatory dysfunction and were certified under Category "B" (fit for limited/non-combat duty).

Adopting these recommendations, in our view, will streamline and improve the military medical examination of servicemen with the described pathology.

[OS]

The Role of Hyperbaric Oxygen Therapy in the Management of Medication-Related Osteonecrosis of the Jaws (MRONJ)

Aliyeva Samira Javid

Presentation type – oral presentation

Introduction: Medication-related osteonecrosis of the jaws (MRONJ) is a severe condition that occurs in patients taking antiresorptive or antiangiogenic drugs, such as bisphosphonates and denosumab. These medications, commonly prescribed for osteoporosis and cancer-related bone metastases, can impair bone healing and lead to necrosis in the maxillofacial region. MRONJ often results in chronic pain, secondary infections, and functional impairment, making treatment challenging. While conventional management includes antibiotics, pain control, and surgical debridement, hyperbaric oxygen therapy (HBOT) has emerged as a potential adjunctive treatment to improve healing outcomes. This study aims to evaluate the effectiveness of HBOT in MRONJ management.

Materials and Methods: A literature review was conducted using PubMed, Google Scholar, and Cochrane Library databases to identify relevant clinical studies, case reports, and systematic reviews on HBOT in MRONJ treatment. The selection criteria included studies published in the last 15 years that assessed the impact of HBOT on wound healing, bone regeneration, and symptom relief in MRONJ patients. Data on HBOT protocols, patient outcomes, and comparisons with conventional treatments were analyzed to determine its clinical efficacy.

Results: Several studies indicate that HBOT may have beneficial effects in MRONJ patients. Key findings include:

Enhanced Oxygenation and Angiogenesis: HBOT significantly improves tissue oxygenation, promoting new blood vessel formation and increasing bone and soft tissue healing potential.

Reduced Inflammation and Infection Rates: Patients receiving HBOT often show a decrease in secondary infections and inflammatory responses, leading to better pain control.

Improved Surgical Outcomes: When used pre- and post-operatively, HBOT has been associated with better wound healing and reduced complications after surgical debridement.

Mixed Evidence on Long-Term Benefits: While some studies support HBOT's effectiveness, others report limited additional benefits compared to conventional MRONJ management.

Conclusion: Hyperbaric oxygen therapy holds promise as an adjunctive treatment for MRONJ by enhancing oxygen delivery, promoting angiogenesis, and reducing the risk of infections. While current evidence suggests positive outcomes, the variability in study results highlights the need for larger, well-controlled clinical trials to establish standardized HBOT protocols. Until definitive guidelines are developed, HBOT may be considered in severe or refractory MRONJ cases alongside conventional treatment strategies.

[OS]

Prevention of Medication-Related Osteonecrosis Following Oral Surgical Procedures

Surayya Isgandarova, Toghrul Aliyev, Adila Mammadova

Presentation type – oral presentation

Background. Bisphosphonates are widely used antiresorptive drugs prescribed to prevent skeletal complications in various diseases. They help reduce hypercalcemia and pathological fractures and improve quality of life in cancer patients with bone metastases. However, one of their most significant adverse effects is the development of medication-related osteonecrosis of the jaw (MRONJ), which markedly impairs patient outcomes. Despite extensive research, the exact pathophysiology of MRONJ remains unclear. Notably, 52–67% of MRONJ cases occur following tooth extraction. To minimize this risk, different preventive strategies have been suggested, including drug discontinuation, improved oral hygiene, systemic antibiotics, antiseptic rinses, atraumatic extraction, primary socket closure, laser biostimulation, and the use of autologous platelet concentrates.

Objectives: This study aimed to evaluate preventive procedures for MRONJ in patients undergoing oral surgery while receiving bisphosphonate therapy.

Methods: Between 2021 and 2024, 44 patients (32 females, 12 males) receiving bisphosphonate or other antiresorptive therapy who required dentoalveolar surgery were included. Patients with prior radiotherapy or jaw metastases were excluded. Demographic and clinical data, including diabetes, smoking, and corticosteroid use, were recorded. Prophylaxis included amoxicillin/clavulanic acid, metronidazole, and 0.12% chlorhexidine rinse from three days preoperatively until two weeks postoperatively. Surgical extractions were performed under local anesthesia, followed by socket smoothing, placement of leukocyte- and platelet-rich fibrin (L-PRF), and Nd:YAG laser biostimulation.

Results. Healing was uneventful in all patients, with complete mucosal closure observed within one month. The mean follow-up was 14.2 months. No significant associations were found between healing and patient or treatment variables ($p > 0.05$).

Conclusions. The surgical protocol demonstrated favorable outcomes in preventing MRONJ and may represent a safe preventive approach following dentoalveolar surgery.

[OS]

Lip-teeth relationship. The main for final aesthetic result

Andreishchev AR, [Chebotarev SY], Rudoman SO, Godin GV, Kanash SS

Presentation type – symposium

Background: Upper lip and upper incisors relationship is very important for sagittal and vertical facial harmony. It's important for soft tissue relaxed condition. The smile is extremely important for upper central incisor to be visualized. Its way for attractive

Aims and Objectives: To formulate algorithms treatment planning and technical tricks for achieving aesthetic predictable results

Methods: Cephalometric and photogrammetric analysis more than 1500 orthognathic patients were used

Results and Findings: Anatomic analysis demonstrate extremely importance vestibular nasal skin / aperture perioral lower rim and subnasal spine relationship. Modification bone border and three times of stitches fixation nasal mucosa, nostrils and columella are effective

Conclusions: automatic surgery is located in the body between max-facial surgery and aesthetic surgery. Impossible to achieve perfect functional and aesthetic results without deep functional analysis, without analysis of your long-term results.

[OS]

Simultaneous shell technique augmentation and all-on-four implant surgery in atrophic mandible

C.Cetin

Presentation type – oral presentation

Background. Insufficient bone volume, particularly horizontal bone deficiency, represents a major challenge in dental implant surgery. The Shell technique, developed by Khoury, provides three-dimensional bone reconstruction using thin cortical bone plates.

Aims and Objectives. To present successful single-stage rehabilitation combining Shell technique augmentation with simultaneous All-on-Four protocol in severely atrophic mandible.

Methods. A 58-year-old male with severe mandibular atrophy (2-3mm width) underwent Shell technique using thin cortical plates from ramus fixed with micro-screws. The space was filled with xenograft/autogenous bone (1:1). Four implants were placed simultaneous

Results and Findings. Primary stability exceeding 35 Ncm was achieved for all implants. The augmentation site was covered with resorbable collagen membrane (Bio-Gide®). Tension-free primary closure was obtained.

Conclusions. Combining Shell technique with simultaneous All-on-Four placement enables successful single-stage rehabilitation of severely atrophic mandibles, reducing treatment time, eliminating secondary surgery, and improving patient satisfaction.

[OS]

Enucleation of a Radicular Cyst Extending to the Maxillary Sinus Floor and Apical Resection of the Involved Teeth

I.Huseynov

Presentation type – oral presentation

Background. Radicular cysts are the most common odontogenic cysts and may extend into adjacent structures. In the posterior maxilla, cysts can elevate or perforate the sinus floor, complicating diagnosis and management.

Aims and Objectives. To present a case of combined enucleation and apical resection for a radicular cyst extending to the maxillary sinus floor, and to outline surgical techniques used to preserve sinus integrity and dental function

Methods. A 40-year-old male underwent imaging confirming a cyst contacting the maxillary sinus floor. Preoperative root canal therapy was completed; under general anesthesia the lesion enucleated, 3 mm apicoectomy performed, and defect repaired successfully

Results and Findings. Recovery was uneventful. At 12-month clinical and radiographic follow-up there was complete resolution, preserved tooth function, and no sinus morbidity or recurrence.

Conclusions. Combined enucleation and apical resection with membrane support and biologic adjuncts is an effective, conservative approach for maxillary radicular cysts involving the sinus floor, promoting predictable healing and functional preservation

[OS]

Optimization of Surgical Tactics in Sinus Lift Procedures Using Impro Implants

Shokirov Shokhrukhbek Tolibekovich

Kimyo International University, Tashkent Uzbekistan

Presentation type – symposium

The optimization of surgical strategies in sinus lift procedures utilizing Impro dental implants is directed toward enhancing treatment predictability and minimizing potential complications. The application of the transcrestal (closed) sinus lift technique reduces surgical invasiveness, limits the need for large volumes of grafting material, and decreases the incidence of Schneiderian membrane perforation. Impro implants demonstrate favorable primary stability and reliable long-term osseointegration, which makes them particularly suitable in clinical situations with reduced alveolar bone height in the posterior maxilla. The adoption of an evidence-based, patient-oriented approach to the selection of surgical tactics contributes to improved clinical outcomes, long-term implant survival, and overall patient satisfaction.

[OS]

Decompression effect on morphological and histological changes of odontogenic keratocyst

Phd. Huseynov A.A., phd. Osmanov S.S., ass Qasimova N.N., b.lab. Seyidova K.Z. Məmmədova Adilə Mahir

Presentation type – oral presentation

Decompression is a surgical technique used to treat odontogenic keratocysts (OKCs), also known as keratocystic odontogenic tumors (KCOTs), particularly those in the mandible. This procedure is a less invasive alternative to radical resection and is often used for large cysts that are close to vital structures like the inferior alveolar nerve.

Objective: The purpose of this study was to evaluate whether marsupialization treatment induces changes in the histology of odontogenic keratocyst epithelium and to compare our experience with the literature.

Material and methods: A 60-year-old patient presented with a recurrent keratocyst 20 years after its initial excision. The lesion was re-excised via a buccal approach, preserving the alveolar process. Two years later, a second recurrence was diagnosed. Marsupialization was performed to reduce pressure, involving the creation of a full-thickness window, suturing the cystic membrane to the oral mucosa, and repeated irrigation with 3% hydrogen peroxide and 0.2% chlorhexidine. Histologic evaluation analyzed the changes in the keratocyst epithelium after marsupialization in terms of type of keratinization, thickness of the epithelium and connective tissue, the presence of acanthosis, the presence and grade of fibrosis, the type and grade of inflammation and the presence and number of mitotic figures and daughter cysts.

Results and Discussion: Radiographic follow-up occurred every 3 months to monitor cystic wall mineralization. Post-second surgery histological examination revealed non-uniform thickening of the epithelium and fibrous capsule after marsupialization. The initial parakeratinized epithelial lining of the keratocyst transitioned to orthokeratinized.

Conclusion: This study was limited by its retrospective, observational design, lack of a control group, and small sample size. Nevertheless, both minor and major histological changes correlated with reduced cyst volume. Future research should investigate the process leading to these changes in histological results.

[OS]

Comparative Evaluation of Conventional Impression Materials, Intraoral Scanning, and Photogrammetry Methods in Implantology

Hasanov Jabbar

Presentation type – symposium

Accurate impression taking in implant-supported prosthetics is a decisive step for achieving proper fit and long-term success. Traditionally, conventional impression materials have been widely used. However, with the advancement of digital dentistry, intra oral scanners and, more recently, photogrammetry technology have emerged as alternative methods.

The purpose of this presentation is to comparatively evaluate three impression methods in implantology—conventional impressions, intraoral scanning, and photogrammetry—in terms of accuracy, efficiency, and clinical application.

The assessment should consider accuracy of impressions, chairside time, patient comfort, impact on laboratory workflow, and cost-effectiveness. The presentation includes clinical cases of single implants, short-span bridges, and fully edentulous arches.

Conventional impressions remain reliable in short-span bridges and simple cases, though they are time-consuming and less comfortable for patients. Intraoral scanners have simplified the workflow and improved patient comfort, yet inaccuracies are often unavoidable in multiple implant cases and full-arch situations. Photogrammetry, on the other hand, has demonstrated the highest accuracy in multiple implant and full-arch work, while also providing significant time savings in both clinical and laboratory settings.

All three methods remain relevant in implantology, but the choice should depend on the complexity of the clinical situation. Conventional impressions are sufficient for simple cases, intraoral scanners are advantageous for patient comfort and digital integration, while photogrammetry is considered the “gold standard” for full-arch, implant-supported prosthetics.

Since photogrammetry accelerates the impression-taking process and the fabrication of provisional restorations, it helps preserve existing papillae, enables the creation of new papillae and pontics, and thus allows for highly aesthetic outcomes with long-term stability.

[OS]

Using laser therapy in endo-periodontal lesions

Vusala Mirsahib Bayramova

Doctoral student, Department of Therapeutic, Dentistry, Azerbaijan Medical University, dentist
Azerbaijan Republic , Baku

Presentation type – E-poster

The aim of the study was to analyze immune changes associated with the use of a treatment combination in patients with endodontic and periodontal lesions. The study was conducted from 2020 to 2023 at the Department of Therapeutic Dentistry of the Azerbaijan Medical University.

The study consisted of two groups: Group 1 – 20 patients diagnosed with endo-periodontal lesions (main group), who, in addition to standard treatment, underwent dental diode laser therapy (Picasso Lite, Italy); Group 2 – 21 patients in the control group, where traditional treatment methods were used. During our final study, 12 months after completing the basic therapy course, we found statistically significant differences in quantitative indicators of the proinflammatory cytokine TNF- α and immunoglobulin IgA depending on the treatment method for endo-periodontal lesions. Moreover, the reduction in oral fluid levels was more pronounced in the main group after using a diode laser in complex treatment.

[OS]

Implant Matrix: The Digital Screw from Virtual to Reality

Kanan Khalilov

Presentation type – symposium

Digital technologies have become more than just a supporting tool in dentistry, they have become the main tool for decision-making, guidance and direction. This presentation, “Implant Matrix: The Digital Screw from Virtual to Reality”, explores how a fully digital approach to implantology – from data collection with intraoral scanners, to surgical guide planning, 3D printing, implant placement and immediate orthopedic loading – works as a single system.

The presentation will discuss:

- Anatomical and aesthetic advantages of digital planning
- The role of artificial intelligence and CAD/CAM technology in the preparation of surgical guides
- Reduced invasiveness and increased accuracy during surgery
- Virtual design and manufacturing process of immediately loadable prosthetic constructions
- Impact on clinical success rates and patient satisfaction

This presentation aims to show how the classic implant flow has become more realistic, more accurate and safer by moving away from the “Matrix”.

[OS]

Maxilla for All

Vugar Guliyev

Presentation type – symposium

The “Maxilla for All” concept represents a new approach to full-arch rehabilitation in cases of severe maxillary atrophy, where conventional intra-alveolar implant placement is not feasible.

Based on the principles of Extra-Alveolar Anchorage, this technique utilizes extra-alveolar bone structures — such as the zygomatic, nasal, and pterygoid regions — to achieve stable and biomechanically favorable implant support.

By anchoring implants in these dense anatomical areas, the concept enables immediate loading protocols while minimizing or eliminating the need for extensive bone grafting procedures. This approach simplifies the surgical workflow, reduces treatment time, and provides predictable functional and aesthetic outcomes even in patients with advanced bone resorption.

“Maxilla for All” aims to make fixed full-arch rehabilitation accessible to a broader range of patients, promoting prosthetic stability and long-term success through a strategically engineered distribution of extra-alveolar support points.

[OS]

Various Clinical Cases in Dental Implantology and Their Solutions

Sahib Bilalzade Yagub

Presentation type – symposium

Introduction: In recent years, dental implantology has become one of the most reliable and predictable methods for the replacement of missing teeth. However, one of the key factors determining implant success is the presence of sufficient bone volume and quality. In cases where bone height or width is insufficient, implant placement becomes challenging, and bone augmentation procedures are required.

Purpose: The purpose of this study is to evaluate the effectiveness of different bone augmentation methods used in dental implantology, particularly open and closed sinus lifting techniques, in cases with bone deficiency. The study also aims to compare clinical outcomes between the frontal and lateral jaw regions in terms of bone regeneration, implant stability, and overall treatment success.

Methodology: This study was conducted on patients who presented with bone deficiency in the posterior maxillary and mandibular regions, requiring bone augmentation prior to implant placement. The cases were divided and analyzed according to the frontal (anterior) and lateral (posterior) regions of the jaw to compare clinical approaches and outcomes. Depending on bone height and sinus anatomy, either the open (lateral window) or closed (crestal) sinus lifting technique was applied.

Discussion: The closed sinus lift was effective in moderate bone loss cases and less invasive for patients. Xenograft materials showed stable long-term results, while a mix of xenograft and allograft presented a slightly higher risk of partial failure. Overall, results confirmed that both open and closed sinus lifting techniques are predictable and successful when proper case selection, precise surgical technique, and follow-up are ensured.

Conclusion: Between 2014 and 2024, open sinus lifting procedures were performed on 77 patients. In 16 patients, a combination of allograft and xenograft materials was used. In one of these cases, osseointegration failed, resulting in the loss of 3 out of 6 implants. In 61 patients, xenograft alone was used. In these cases, no complications related to osseointegration or reduction in bone volume were observed. In one patient, 2 out of 6 implants were lost due to partial graft resorption and insufficient primary stability.

[OS]

Sinus lifting in challenging clinical situation

Dr. Emil Imanov DDS MSc

Presentation type – symposium

Maxillary sinus floor augmentation is acceptable augmentation prior to insertion of dental implants. Anatomic variation and lesions of maxillary sinus, including antral pseudocyst, mucocoele or radicular cyst causing sinusitis. We show the changes in the radiological features of an antral pseudocyst, mucocoele that existed before maxillary sinus augmentation.

Case presentation: In a study conducted by Pascal Grün, Patrick Bandura and colleagues, a 69-year-old man with a large antral pseudocyst in the left maxillary sinus underwent sinus augmentation and placement of 2 dental implants in that area and 15-years follow-up has been shown. This study showed that patient who underwent sinus lifting and dental implantation without pseudocyst removal had changes in the X-rays taken 15 years later, but this did not affect the functionality of dental implants. One of our patients followed them for 2.5 years, and one for 2 years. Despite the fact that none of them had a pseudocyst removed, none of them had noticeable radiographic changes or functional changes of dental implants. In a study conducted by Perfetti G., Rossi F. and colleagues, sinus augmentation was described in the presence of mucocoele. One of our patients with maxillary sinus mucocoele showed no radiological changes after 10 years of follow-up, another after 2 years and another after 1 year.

Clinical discussion: We present a case of antral pseudocyst and mucocoele that was not removed before /during sinus floor augmentation.

Conclusion: In patients who underwent sinus augmentation and dental implantation in the presence of antral pseudocyst without cyst removal, both in Pascal Grün, Patrick Bandura and colleagues' study and in our own 2.5- and 2-year follow-ups showed no significant radiological changes or alterations in implant functionality. Another study shows that the SAP (sinus augmentation procedure) operation can be carried out without complications if the distance between the top of the mucocoele with SAP and the osteomeatal complex (OMC) is 22 mm, or for mucocoele no larger than 18 mm. Our patients with maxillary sinus mucocoele showed no radiological changes after 10 years of follow-up.

[OS]

Using an intraoral scanner in dental implant prosthetics.

R. Ibrahimov, E. Farajov, M. Aliyeva, A. Yusubov

Azerbaijan Medical University

Presentation type – oral presentation

Objective. The aim of the study was to evaluate the effectiveness of using an intraoral scanner (IOS) at dental implant prosthetics for partially edentulous jaws.

Materials and Methods: The study analyzed the prosthetic protocols of 40 patients with partially edentulous jaws. Two or three dental implants was inserted on all patients. Digital scan posts and Ranyes intraoral scanner were used to made impressions for 20 patients. For other 20 patients used traditional impressions with standard transfers, impression trays, custom trays and impression materials (C-silicone).

Results. The analysis showed that the time for fabricate of crowns on implants was significantly reduced in the group of patients using the IOS. Twelve patients (60%) who used the traditional method had gag reflex, while none of the patients in the IOS group experienced this.

Conclusion: The use of IOS reduces the time of dental implants prosthetics, improves the quality of patient care, and enhances clinical effectiveness.

[OS]

Cemento-Osseous Dysplasia; Diagnostic Challenges and an Update on Etiology

Ömür Dereci

Presentation type – symposium

Cemento-osseous dysplasias are enigmatic bone lesions demonstrating tumor-like radiological and clinical features. As a controversial topic in oral pathology, cemento-osseous lesions draws attention in the last decade regarding differential diagnosis and treatment. Although it is commonly suggested to monitor the lesions in 6 or 12-month follow-ups, several clinical conditions may urge the clinicians to treat the lesion with appropriate surgery. The success of dental implant treatment in edentulous regions bearing cemento-osseous lesions remains unknown. Cemento-osseous dysplasias are relatively common in Turkish population and our knowledge on these lesions is just improving in the last decade. The author presents his experience on the differential diagnosis and treatment planning of cemento-osseous lesions.

[OS]

Sinus lifting in challenging clinical situation

Presentation type – symposium

Maxillary sinus floor augmentation is acceptable augmentation prior to insertion of dental implants. Anatomic variation and lesions of maxillary sinus, including antral pseudocyst, mucocoele or radicular cyst causing sinusitis disturbance. We show the changes in the radiological features of an antral pseudocyst, mucocoele that existed before maxillary sinus augmentation.

Case presentation: In a study conducted by Pascal Grün, Patrick Bandura and colleagues, a 69-year-old man with a large antral pseudocyst in the left maxillary sinus underwent sinus augmentation and placement of 2 dental implants in that area. This study showed that patient who underwent sinus lifting and dental implantation without pseudocyst removal had changes in the X-rays taken 15 years later, but this did not affect the functionality of dental implants. One of our patients followed them for 2.5 years, and one for 2 years. Despite the fact that none of them had a pseudocyst removed none of them had noticeable radiographic changes or functional changes of dental implants. In a study conducted by Perfetti G., Rossi F. and colleagues, sinus augmentation was described in the presence of mucocoele. One of our patients with maxillary sinus mucocoele showed no radiologically changes after 10 years of follow-up, another after 2 years and another after 1 year.

Clinical discussion: We present a case of antral pseudocyst and mucocoele that was not removed before /during sinus floor augmentation.

Conclusion: In patients who underwent sinus augmentation and dental implantation in the presence of antral pseudocyst without cyst removal, both in Pascal Grün, Patrick Bandura and colleagues' study and in our own 2.5- and 2-year follow-ups showed no significant radiological changes or alterations in implant functionality. Another study shows that, the SAP (sinus augmentation procedure) operation can be carried out without complications if the distance between the top of the mucocoele with SAP and the osteomeatal complex (OMC) is 22 mm, or for mucocoele no larger than 18 mm. Our patients with maxillary sinus mucocoele showed no radiologically changes after 10 years of follow-up.

[OS]

Reaching adequate local anesthesia in Oral and Maxillofacial surgery

Rahimov C.R., Farzaliyev I.M., Hajiyeva G.I.

Presentation type – symposium

Pain-free procedures, anxiety control and patient comfort are integral components of everyday oral and maxillofacial surgery practice. Generally listed components could be achieved by local anesthesia (LA), moderate sedation, deep sedation (DS) and general anesthesia (GA) which have been successfully administered by in the offices of oral and maxillofacial surgeons (OMSs) and their anesthesia teams.

Local anesthesia (LA) is number one choice in pain management process in oral and maxillofacial surgery. Safe and effective LA enables patients to obtain high-quality treatment, and also relieve the anxiety when they come to the clinic. The choices of local anesthetic and injection methods determine the success of LA to a great extent and usually depends on the operators' technique level, patient's subjective psychology and anatomical variation of maxillofacial structure. Due to the existence of above factors, the worldwide success rates of LA in oral and maxillofacial surgery are very different. There are no specific LA methods that ensure 100% successful LA rates.

On the other hand, local anesthesia could be combined with moderate and deep sedation or replaced by general anesthesia technique.

The goal of moderate sedation, deep sedation, or general anesthesia in the OMFS office is to establish an environment in which patients are comfortable and cooperative while allowing the surgeon to safely perform the operation. This requires meticulous care in which the practitioner balances the depth of sedation and level of responsiveness while maintaining a patent airway, proper and adequate ventilation, and optimal cardiovascular hemodynamics. Safe anesthesia practice depends on various items, including goals of anesthesia, selecting the proper patient, anesthetic technique utilized, drug regimen selection, monitoring, anesthetic team (staff and anesthesia provider) training, and the team's preparedness to handle unanticipated complications and medical/anesthetic emergencies. The goal of current study was to analyze the clinical data of patients undergoing intravenous sedation in oral and maxillofacial surgery, to understand the epidemiological characteristics, to evaluate the efficacy and safety of intra venous sedation for oral surgery according to our experience.

Methods: Current study was performed in Department of Oral and Maxillofacial surgery, Azerbaijan Medical University in period of 2018-2023. We performed retrospective analysis of the clinical data of 500 patients who underwent intravenous sedation for dental implant placement procedure. The clinical data such as gender, age, surgery types, anamnestic data, values of perioperative vital signs, the use of sedatives and analgesics, effect of sedation during the operation and the postoperative anterograde amnesia were analyzed. All clinical data was well documented by Microsoft Access software, while statistical analysis was performed by the means of MedCalc 20.104 software.

Results: A total of 500 patients experienced oral surgery by intravenous sedation. The peak age was 25 to 80 years and mean age 49 years. The major disease type of disease was partial adentia and it was accounted for 76% followed by total adentia 24%. In 36.73 % of cases patients had previous experience with surgical procedures, which weren't related to dental procedures, done under general anesthesia and in 8.16% of cases they had experience with surgical procedures done under local anesthesia, but without IV sedation. The major type of surgical procedure was tooth extraction with simultaneous dental implant placement (57.14%), followed by tooth extraction with simultaneous dental implant placement and sinus lift procedure (20.40%), dental implant placement only (17.34%) and dental implantation and sinus lift procedure (5.1%). Maximal number of extracted teeth was 13 (mean 2.66), maximal number of inserted implants was 16 (mean 4.96). The values of arterial blood pressure (BP) showed statistically significant differences at the time of before sedation (systolic 135, diastolic 83), local anesthesia injection, surgical incision, 10 min after operation and the end of operation (systolic 115, diastolic 75). Within current study in 91.83%, cases patients received Midazolam alone, in 2.04% cases patients received propofol alone, and in 6.12% cases patients received Midazolam and propofol combination for intravenous sedation. Moreover, the mean value of received Midazolam was 2.0 ml (10 mg) as intravenous sedation. Fentanyl (25%) was the most common intravenous opioid analgesic we used, followed by Trimeperidine (14.28%). Mean value of Fentanyl was 1.173 ml (0.058 mg), Trimeperidine 0.017 ml (0.17 mg). Besides, 79.59% of patients received non steroid anti-inflammatory drug (NSAD) as analgesic during the surgery. During the surgery procedure, most of the patients scored on a scale of 3 to 6 according (mean 4.23) to the Ramsay sedation score (RSS). The postoperative anterograde amnesia rates of local anesthesia injection , surgical incision and dental drill during surgery were 94%, 92% and 75% respectively.

Conclusion: Pain-free procedures, anxiety control and patient comfort are one of the most important components of everyday oral and maxillofacial surgery practice. Even local anesthesia is method of choice for management of outpatient oral and maxillofacial surgeries there are no specific LA methods that ensure 100% successful LA rates. On the other hand, the application of

moderate sedation, deep sedation or general anesthesia technique could significantly improve perioperative anxiety control and comfort of the patient. However deep sedation and general anesthesia depends on various items, including goals of anesthesia, selecting the proper patient, anesthetic technique utilized, drug regimen selection, monitoring, anesthetic team (staff and anesthesia provider) training, and the team's preparedness to handle unanticipated complications and medical/anesthetic emergencies. In our study we have found that application of Midazolam in combination with Fentanyl could provide patients with adequate anxiety control and comfort while performing of moderate and major oral and maxillofacial surgeries that was proved by reaching of reasonable indexes of Ramsay sedation score (mean 4.23) and postoperative anterograde amnesia of local anesthesia injection, surgical incision and dental drill during surgery (94%, 92% and 75% respectively). It was also proven by comparison of preoperative rates of arterial blood pressure (systolic 135, diastolic 83) and perioperative rates of blood pressure after application of intravenous sedation (systolic 115, diastolic 75). Intravenous sedation on the oral and maxillofacial surgery is effective and safe, can make the patients more comfortable, and should be further promoted and applied.



Plastic & Reconstructive surgery [PRS]

[PRS]

Surgical treatment of facial nerve injuries. Methods and challenges of facial reanimation

Kamil Abdullayev

Presentation type – symposium

Facial nerve injury remains one of the pressing issues among all types of peripheral nerve lesions. Thanks to the efforts of neurologists, recovery can be achieved in a large number of cases. At the same time, secondary disorders of facial expression resulting from mechanical damage to the facial nerve caused by trauma, surgical procedures, or infectious diseases present a serious challenge and require surgical methods of rehabilitation. The arsenal of facial reanimation techniques has been expanding since the first reports of successful surgical restoration of peripheral nerve fibers. Today, both direct repair of damaged branches of the facial nerve and substitution of the facial nerve with other motor fibers (hypoglossal, masticatory, accessory, and others) are routinely used. Nevertheless, the question remains relevant: which methods should be preferred today, and how should the strategy of surgical rehabilitation be structured for patients with facial nerve injuries? Numerous arguments can be made both for and against each of the existing approaches. In some cases, maximal muscle strength is achieved, but facial symmetry at rest is lacking. In other cases, the success of achieved symmetry is offset by insufficient strength and deficits in synchrony and spontaneity of movements. Complete restoration of facial expression muscles activity in all its aspects still remains a challenging task due to the unique anatomical and physiological features of the facial nerve and facial muscles. In our report, we present a demonstration of our approach to surgical restoration of facial nerve function and share the experience and results obtained.

[PRS]

Face Transplant 2.0: Innovation in the Wake of Chronic Rejection and Cancer

Jean Paul Meningaud

Presentation type – plenary session

Facial transplantation represents a pinnacle of reconstructive surgery, but long-term graft survival remains challenged by chronic rejection and the burden of lifelong immunosuppression. We present the case of a patient who underwent full face transplantation 16 years ago and experienced progressive chronic rejection during the past year, complicated by the development of three malignancies and renal deterioration.

A second transplant was initially scheduled, but ultimately contraindicated. In response, our team implemented a novel salvage strategy: selective preservation of the donor's osteocutaneous structures, removal of soft tissues, gradual tapering of immunosuppression, and reconstruction using advanced zygomatic and extraoral implants. The patient now benefits from a custom facial prosthesis that restores the maxilla, malar prominences, nasal structure, lips, and mandibular dentition.

This case exemplifies a paradigm shift in managing complex post-transplant failures and highlights a new frontier in hybrid reconstructive strategies combining surgical innovation with prosthetic rehabilitation. We will discuss the clinical decision-making process, surgical steps, technical challenges, and long-term outcomes.

[PRS]

Comparative Effectiveness of Corticosteroid Injections and Legato II Laser Therapy in Hypertrophic Scar Management of the Maxillofacial Region

PhD. ass Huseynov A.A., ass Qasimova N.N., Qurbanaliyeva Q.I., stud. Kuntar L. Məmmədova Adilə Mahir

Presentation type – oral presentation

Hypertrophic scars are pathological wound responses characterized by excessive fibroblast proliferation and abnormal collagen deposition, leading to raised, erythematous, and often symptomatic scars. They are a frequent complication in oral and maxillofacial surgery, following surgical procedures, trauma, or burns. These scars can cause aesthetic and functional impairments, reducing soft tissue mobility and patient quality of life. Among available treatment options, corticosteroid injections and laser therapy remain the primary modalities. However, variability in treatment response, side effects, and lack of standardized protocols often limit their effectiveness.

Objective: This study aims to evaluate the comparative effectiveness of intralesional corticosteroid injections and Legato II laser therapy in treating hypertrophic scars of the

maxillofacial region, focusing on treatment intervals, efficacy, and the potential advantages of combination therapy.

Material and methods: A clinical observational study was conducted at Paramed Clinic, where patients received either intralesional corticosteroid injections (triamcinolone acetonide 10–40 mg/mL), Legato II laser therapy, or a combination of both treatments. Scar height, texture, pigmentation, and symptom relief were assessed at multiple time points. Corticosteroid injections were administered every 3–4 weeks, while Legato II laser sessions were performed every 4–6 weeks, including Phase I Microplasma Technology and Phase II Impact Trans-Epidermal Delivery (iTED™).

Results and Discussion: Analysis of 24 patient records revealed that 62.5% of patients treated with corticosteroids alone were satisfied with outcomes. In contrast, patients who underwent combined corticosteroid and Legato II laser therapy demonstrated higher satisfaction (81.25%), achieving faster, more significant, and longer-lasting improvements with fewer sessions than monotherapy. Corticosteroids reduced inflammation and scar thickness, while Legato II enhanced drug penetration and improved scar remodelling.

Conclusion:

The combined use of corticosteroid injections and Legato II laser therapy offers superior clinical outcomes compared to monotherapy. By synergistically reducing scar thickness, improving collagen remodelling, and enhancing patient satisfaction, this combined approach represents a highly effective strategy for optimizing hypertrophic scar management in the maxillofacial region .

[PRS]

Experimental model for researching the impact of various forms of topical medicine on postoperative skin wounds of the maxillofacial region.

Phd. ass Huseynov A.A., Prof. Ibrahimli F.I., ass Qasimova N.N., ass. Qurbanaliyeva Q.I
Məmmədova Adilə Mahir

Presentation type – oral presentation

Selecting an appropriate experimental model to study the impact of various topical drugs on postoperative skin wounds is crucial. The model directly influences the reliability and clinical applicability of the results. An optimal model should accurately mimic human wound healing's physiological and pathological processes. Key selection criteria include physiological similarity, reproducibility, standardization, availability, economic viability, and ethical considerations, ensuring humane animal treatment.

The most common experimental models are:

1. Models based on cultured cells (in vitro)
2. Models based on artificial skin and 3D bioprinting
3. Models on small rodents (mice and rats)
4. Models on rabbits and pigs

Objective: This study aimed to evaluate the comparative effectiveness of various experimental models for researching the impact of topical medicine on skin regeneration.

Material and methods: To investigate the effect of biotin + vit.E film on regenerative processes, our study will create both linear and round wounds on the skin of rats. A linear wound on one rat will assess drug penetration, while a round wound on the same rat, an internationally recognized model, will be used to study the drug's impact on skin regeneration.

Results and Discussion: The rat model is indispensable for studying the mechanisms and efficacy of locally acting medicine. Using a single rat with both linear and round wounds will allow for the investigation of drug penetration and its impact on skin regeneration, providing valuable data for new treatments.

Conclusion: The rat model is a reliable and common research choice due to its biological fit and practical advantages, making it vital for early-stage studies of local medicines. However, its findings are not sufficient alone and require human clinical trials for final validation.

[PRS]

Formation of stable aesthetic nasal tip

Seymur Abbasov

Presentation type – symposium

The presentation about surgical technique for shaping and stabilizing the nasal. On the example of intro operating video, the stage of formation of the tip of the nose with cartilage grafts is presented. This approach provides a strong nose tip fixation that prevents tip drop or deformation over time.

[PRS]

How I Manage a Deviated Nose

Javid Jabbarzadeh

Presentation type – symposium

This presentation outlines my personal surgical approach to managing the deviated nose, emphasizing practical intraoperative decision-making rather than theoretical background. The focus is on achieving both functional correction and aesthetic realignment through a structured, step-by-step strategy.

Preoperative evaluation includes detailed external analysis and endonasal examination to determine the axis of deviation, septal involvement, and the relationship between the bony and cartilaginous vaults. I classify deviations into three main types—cartilaginous, bony, and combined—and tailor the operative plan accordingly.

The surgical technique relies on an open structural rhinoplasty framework. Septal correction begins with mobilization and repositioning of the caudal septum, using scoring, suturing, and spreader grafts to re-establish midline stability. Asymmetric osteotomies and differential rasping are applied to re-center the bony pyramid. The tip complex is realigned through repositioning of the medial and lateral crura, supported by a columellar strut or septal extension graft when necessary. Key maneuvers include controlled greenstick fractures, precise dorsal realignment, and tension-free graft fixation.

The presentation highlights several technical nuances: maintaining L-strut integrity, symmetrical tip projection, and prevention of internal valve collapse. Postoperative management focuses on early airway evaluation and the prevention of relapse or scar contracture. Clinical results demonstrate improved nasal symmetry, airway patency, and overall facial balance with high patient satisfaction and low revision rates.

[PRS]

A new approach in management of orbital adherence syndrome

Dos.Hasanov Farman, Asadova Aytaj, Isgandarova Surayya

Presentation type – oral presentation

Orbital walls are one of the most common sites of midface fractures and account for ~40% of traumatic injuries in this region. These fractures are often associated with changes in the anatomy of the orbital cavity and frequently affect the orbital inferior wall, infraorbital groove and canal, and medial orbital wall, which leads to changes in its pattern and volume as well. Generally, the forces required for brake superior and lateral walls are greater than those required for thin medial and inferior walls. Disruption of any of these structures leads to the expansion of orbital volume that brings to the appearance of enophthalmos, diplopia, and impaired ocular mobility. The gold standard in the treatment of orbital wall fractures is surgical reconstruction, that includes fracture site exposure, freeing tissue prolapsed into the fracture site, and re-approximating the orbital wall support, usually with an orbital implant. It usually could be achieved by the usage of such as transconjunctival, subciliary, and coronal approaches and implementation of graft and reconstructive materials, including bones, cartilage, titanium, and resorbable mesh. Today, the gold standard in orbital floor reconstruction is the application of titanium mesh orbital plates. However, their implementation could be associated with a number of postoperative complications, such as mispositioning and orbital adherence syndrome. Orbital adherence syndrome is a poorly described and understood phenomenon and appears to occur after the use of large-pored titanium mesh for orbital reconstruction. It usually appears as limited eye movement that appears 1 to 2 weeks after reconstructive procedure. Prevention is possible through careful patient selection and the placement of a smooth interface medium in the initial surgery. The aim of the current study is to present the outcomes of orbital reconstruction done by both orbital mesh and customized smooth-surfaced titanium orbital implants.

[PRS]

Case report: "Surgical and Prosthetic Rehabilitation of Maxillary Bone, Mucosa, and Teeth Lost Due to Trauma Using a Custom-Made Implant."

Rashad Mammadzadeh

Presentation type – oral presentation

Introduction: Traumatic fractures of the maxilla are often accompanied by the loss of teeth as well as damage to the walls of the maxillary sinus. Such conditions not only lead to functional disturbances (mastication, speech, breathing) and aesthetic defects, but also pose additional challenges in reconstructive treatment.

Case report: A patient presented with a fracture of the maxilla at the level of teeth 22-27, involving both bone and teeth,

along with a fracture of the inferior wall of the maxillary sinus. In the initial stage, the defect was closed using soft tissue plasty. After approximately 6 months, a custom - made titanium implant was manufactured and fixed to the bone with screws.

Straumann multi-unit abutments were connected to the implant. Following a two- week healing period, impressions were taken, and a prosthetic dental reconstruction was fabricated and delivered on the implant.

Result: This treatment approach successfully restored both the maxillary bone and sinus defect, as well as the functional and aesthetic rehabilitation of the missing teeth. Long-term follow-up demonstrated satisfactory outcomes in mastication, occlusal stability, aesthetic appearance, and anatomical integrity of the sinus.

[PRS]

Application of the Hemostatic NET during operations on the maxillo-facial region.

Ahmad Zaher Sakkal

Azerbaijan Medical University, Department of Oral and maxillo-facial surgery

Presentation type – oral presentation

Hematoma is the most frequent postoperative complication of operation on the maxillo-facial region, occurring in up to 8% of patients. Its occurrence affects postoperative recovery, as it is associated with an increased incidence of: edema, ecchymosis, ischemia, infection, necrosis of the operated area. Over the past 4 decades, plastic and maxillo-facial surgeons have been looking

for a solution to this problem Drainage, tissue glues, tumescent infiltration, or dissection with ultrasound instrument were not completely effective in preventing hematoma.

According to the data of Scopus, PubMed, and Google Scholar, study of the Surgical NET s is described in the scientific literature. A total of 281 articles, including 123 from PubMed, 89 from Embase and 69 from Scopus.

Auersvald and colleagues introduced a surgical solution to prevent hematoma through the use of a hemostatic net. Drawing inspiration from Popescu's 1985 work on achieving hemostasis in oropharyngeal vascular malformations, Auersvald has extrapolated this concept to quilt the skin flap elevated during a facelift to eliminate the dead space in the subcutaneous plane. The "A-net," initially described in face and neck lifts, has been applied to many other facial procedures.

What is the surgical NET? Principles It's a continuous external running suture in all the detached areas. The areas fixated by the NET does not allowed ccumulation of fluids because close death spaces. Allows skin redistribution, gliding and flaps stability.

Why to use it ? Advantages: Easy and low cost technique ,The more secure method to control transop bleeding ,reduce coagulation thermodamage, Is the more secure method to prevent and avoid hematoma (first 48 hr), Allowed Skin redistribution ,Avoid Drains,Reversible whenever you want POP fast recovery (diminishing inflammatory process): Less ,dema ,Less echymosis, Less pain, Less fibrosis. Disadvantages of NET? the net comsume more surgical time

Complications: learning curve, complications, necrosis, infection, Hyperpigmentation/Hypopigmentation, Temporary paralysis in a few cases, Never permanent injuri Where to begin? use the appropriate suture, appropriate dissection, external running suture,check suture fixation to the smas, suture tension, cover all detached areas. When remove the stiches?remove stiches 48 hr- 72 hr,check the patient every day 24 -48-72 hr Steps to remove stiches: Antibiotic Profilaxis, Azitromicin 500mg /day/5days,Clean all the crust of the stiches,At 24 and 48 hr by chlorhexidine Most Common errors:Use inadequate suture,Wide distance between the parallel lines,Inadequate redistribution of the skin when you put the NET,No clean the knots before remove sutures Important Tips: Avoid Thin flaps, Manage SMAS (less subcutaneous dissection),Start in the medial inferior part of the neck, Assistant help with position of the skin during the NET ,Skin fixation on the desire position, Be careful over the sternocleidomastoid muscle for the jugular vein.

Conclusion: The hemostatic net is an effective method for the prevention of early hematomas in operation on the face and neck, This surgical procedure did not lead to a significant increase in the incidence of ischemia or necrosis.

[PRS]

Secondary rhinocheiloplasty taking into account the thickness of the facial soft tissues.

N.N. Sultanova, A.A. Yusubov

Azerbaijan Medical University, Department of Oral and maxillofacial surgery

Introduction. Facial soft tissue thickness (FSTT) data are an important component in the planning of reconstructive and aesthetic surgeries of the craniofacial complex. Correction of the nasal lip deformity associated with cleft lip requires taking into account the thickness of the facial soft tissues.

Aim: improve the results in the treatment of patients with secondary nasal lip deformity after primary cheilorhinoplasty.

Material and Method: Surgical treatment of 16 patients, aged 16 to 34 years, with unilateral secondary cleft lip nose deformity was performed at the maxillofacial surgery department of the Azerbaijan Medical University, between 2021 and 2025. Quantitative analysis of the nose and upper lip was based on the measurement of 18 anthropometric parameters and the determination of 21 proportion indices. Facial soft tissue thickness was measured at the 12 landmarks (supraglabella, glabella, nasion, rhinion, supratip, tip, subnasale, supradentale, infradentale, mental sulcus, mental eminence, and gnathion) on lateral CT images. The data obtained from soft tissue thickness measurements and anthropometric examination were compared with the data of our databases.

The our protocol of surgical procedure consists of: a transcolumellar asymmetrical incision; subperichondrial plane dissection; partial or total extracorporeal septoplasty, using spreader grafts and flaps for the stabilization of the nasal internal valve; percutaneous lateral and transversal osteotomy. During secondary rhinocheiloplasty, tip plasty is included: disrupting the abnormal attachment of nasal ligaments; complete detaching of the lower lateral cartilage from the skin and mucosa; reorientation of the deformed architecture of the cartilaginous part of the nose and fixation the nasal ligaments at new position by using algorithm of 6 sutures; inserting extension nasal graft, alar rim grafts, onlay graft and diced-cartilage fascia graft for premaxilla augmentation on the cleft side.

In patients with decreasing of the soft tissue thickness at the subnasal and supradental landmarks was performed also microlipografting of the upper lip. The skin flap defatting and a hemostatic Net -suture was used, in cases of increasing thickness of the soft tissue at the supratip and tip landmarks.

Results: All patients were the followed up 1-18 months in terms of their aesthetic appearance and nasal breathing. The aesthetic and functional results of secondary rhinocheiloplasty were objectively assessed using a patient, surgeon and independent observer survey. The aesthetic and functional outcomes of intervention were found to be very good and good (90 %), satisfactory (10%) in patients.

Conclusion: During secondary rhinocheiloplasty, it is important to perform reorientation of the deformed architecture of the bone-cartilaginous parts of the nose taking into account the thickness of the facial soft tissues.



Head and Neck Oncology & Surgery [HNS]

[HNS]

Conservative management in mandibular Ameloblastoma: The Philippines experience

Charles P. Sia

Presentation type – Plenary session

Ameloblastoma is a well-known benign but aggressive tumor mostly reported in the Mandible. Standard treatment of surgical resection with graft reconstruction is well performed in developed or privileged countries with access to funding and expertise in microsurgery. Newer studies of reconstruction with tissue engineering provided less surgery and higher rates of treatment acceptance in contrast to the former treatment with only a few centers performing. Others reported treatment modalities include cryosurgery, radiotherapy, enucleation, staged surgical treatment, and BRAF inhibitor administration to name a few. This presentation will focus on the clinical presentation and treatment expectations on cases of Ameloblastomas operated through open dissection but in a less aggressive manner thus omitting the invasive part of segmental resection, distant graft harvest, and reconstruction while promoting such protocol for mandibular bone preservation with data of up to 25 years.

[HNS]

Depleted uranium munitions as the cause of Increasing of Rare Head and Neck tumors

Alek Racic

Presentation type – Plenary session

The problem of increasing incidence of malignant tumors of the head and neck has been an intriguing theme over the past two decades in Serbia, Montenegro, Libya, Syria, Bosnia and Herzegovina, Iraq, and Northern Macedonia. In all these countries, this phenomenon began after NATO bombings involving depleted uranium and plutonium penetrators. Medical statistics indicate a statistically significant increase in the incidence of malignant tumors in the head and neck region. Moreover, these tumors have exhibited more aggressive and infiltrative behavior compared to previous cases, necessitating more radical surgical interventions. This was the primary reason for the massive tissue defects that required innovative approaches to surgical reconstruction.

The study included patients with various malignant tumors of the head and neck region from Serbia, Bosnia and Herzegovina, Macedonia, and Montenegro, who underwent radical surgery and experienced significant tissue defects post-operatively. Some reconstructive methods were innovative, while others were modifications of well-known techniques. Since it was not feasible to present all cases, we decided to highlight interesting cases and innovative approaches to surgical and microsurgical reconstruction of post-oncologic defects.

The challenge of employing a radical surgical approach to treat these tumors has been persistent, as the defects created post-surgery did not always allow for reconstructive procedures that were optimal from an aesthetic perspective. Therefore, it was crucial to establish the best possible communication with the patients to explain the necessity of radical treatment. Often, family members were included in this dialogue, and there were no communication issues encountered due to this patient-centric approach.

The study also clearly demonstrated the importance of ongoing surgical education in various parts of the world addressing health problems caused by NATO bombings, as seen in Serbia, Bosnia and Herzegovina, Macedonia, and Montenegro. Additionally, the surgical experience presented in this study can benefit other countries, such as Libya, Syria, and Iraq, with similar health system challenges.

Thus, it is essential to initiate an international project that will encompass patients from all countries affected by depleted uranium and plutonium penetrators. The 33rd ICMFS Congress in Baku presents a valuable opportunity to kick-start such a project, which could facilitate the inclusion of patients from Ukraine, Serbia, Montenegro, Iraq, Syria, Libya, Bosnia and Herzegovina, and other nations that have experienced NATO bombings.

[HNS]

Subtotal maxillectomy with orbital exenteration Case report, poster presentation

Alek Racic

The patient, a 63-year-old employed woman, married and living with her husband, and mother of two children from eastern Serbia, presented to her local health center with a growth on the lower right eyelid. Dermoscopy confirmed basal cell carcinoma, and excision of the tumor was performed under local anesthesia without conjunctival preparation. Histopathological analysis showed clear lateral margins, but the tumor had penetrated the conjunctiva in depth.

Three months later, the patient went to a plastic surgery specialist with evident tumor recurrence, inability to move the eyeball, and impaired vision in the right eye. A maxillofacial surgeon at the local health center was consulted and involved in the case, leading the team that would decide on orbital exenteration. After surgical removal of the eyeball, a CT scan revealed tumor proliferation through the orbital floor into the maxillary sinus, involving the anterior and medial walls of the sinus. The patient was referred to the Clinical Center of Serbia for further surgical treatment. Clinical examination confirmed the CT findings, with the hard palate remaining intact and showing no signs of tumor proliferation. Neck ultrasound was unremarkable, which is typical for this type of carcinoma as it does not usually metastasize to the cervical region. Based on the integrity of the upper jaw and the preservation of oral cavity functionality in the postoperative period, I opted for a subtotal maxillectomy with preservation of the hard palate and the lower wall of the maxillary sinus. Open surgical removal of the remaining parts of the right maxilla in the middle cranial fossa, as seen in the attached images, and I closed this defect with a synthetic material available in the hospital. The resulting defect was reconstructed with a cervicofacial kit flap modified to match the anatomical structures of the right cheek. However, the flap could not cover the entire face, resulting in a defect in the preauricular area, which I closed with a free skin graft according to the Wolf technique. Histopathological findings confirmed the presence of basal cell carcinoma in the bony structures of the right maxilla. This carcinoma becomes significantly more aggressive when it transitions from soft to bone tissue. Preservation of the hard palate proved to be justified, as there was no tumor invasion in that anatomical area, and the patient maintained normal breathing and chewing functions in the postoperative period, including the use of an appropriate mobile prosthetic replacement.

I recommended the management of the ocular defect by placing two microimplants in the lateral and medial walls of the orbit for attachment of the prosthetic eye. After a successful radical surgical treatment, the patient was returned to colleagues in the Local Health Center for further monitoring and care. At this time, the patient has a dental mobile prosthesis and glasses with a false eye.

[HNS]

Prediction and prevention of complications in the treatment of complicated course of odontogenic inflammatory processes of maxillofacial region.

Yuldashev I. M., Eshiev A. M., Rakhmanov A. T. Bishkek, the Kyrgyz Republic.

Presentation type – symposium

Inflammatory processes of the face and neck often tend to progress with the development of life-threatening septic complications. Delayed referral to dental facilities for timely, highly qualified care leads to an increase in the number of patients with acute odontogenic inflammatory diseases. The purpose of this article is to provide a clinical description and analysis of the results of treatment for odontogenic inflammatory processes. To present a clinical case illustrating the treatment of a patient with odontogenic phlegmon of the maxillofacial region with successful prevention of developing descending mediastinitis. A retrospective study conducted and the results of treatment of children in the department of pediatric maxillofacial surgery at the National Center for Maternity and Childhood Protection of the Ministry of Health of the Kyrgyz Republic (NCMCP MOH KR) in Bishkek during the period from 2019 to 2024. Presented clinical characteristics and analysis of the results of treatment of odontogenic inflammatory processes, as well as a clinical case illustrating the treatment of a patient with complicated odontogenic phlegmon of the maxillofacial region. Retrospective analysis showed - out of 8925 children who received treatment 810 children were with odontogenic purulent inflammatory processes, with extraction of permanent molars. 388 children were girls, 422 - boys. Odontogenic periostitis accounted for the largest number (341), odontogenic osteomyelitis of the jaws in 248 children. Odontogenic phlegmons of maxillofacial region in 198 children, odontogenic lymphadenitis, suppurative cysts in 23 children. The given clinical case of the 11 years old patient, shows that thorough examination, consultations with allied specialists, timely primary and preventive additional surgical drainage allows successful treatment of complex patients with purulent-inflammatory odontogenic processes.

[HNS]

Tumors of the deep lobe of the parotid gland: our experience of tumor removal by transparotid approach

¹Aliyev B.Sh., ²Rzayev R.M., ³Rzayev R.R. Hasanova P.A.

¹Head of Oral & Maxillofacial Surgery Department (Azerbaijan Medical University), Baku; ²Internal Troops Military Hospital, Baku, Azerbaijan; ³Baku Central Hospital, Azerbaijan.

Presentation type – oral presentation

Tumors of the deep lobe of the parotid gland (PG) tend to spread into the parapharyngeal space, which can cause a number of difficulties in the treatment of patients. In this case, tumor growth occurs either through the so-called stylo-mandibular tunnel or as a result of continued tumor growth located in the posterior part of the deep lobe of the PG (in the retromandibular fossa).

Removal of tumors of this localization, as usual, is performed by superficial parotidectomy followed by resection of the deep lobe of the gland (containing the tumor), which often includes of mandible osteotomy. At the same time, superficial parotidectomy, along with the threat of the facial nerve damage, also leads to pronounced deformation in the parotid region due to the removal of a large volume of the gland parenchyma and often – the development of auriculotemporal syndrome. Meanwhile, possible damage to the inferior alveolar nerve or the inferior ulnar neurovascular bundle during osteotomy, in turn, is fraught with serious functional disorders, which leaves much to be desired.

The urgency of the problem allows us to put forward a hypothesis about the possible effectiveness of preserving the superficial lobe of the PG when removing some tumors of its deep lobe. One of the prerequisites for this is that gentle intervention on the gland parenchyma, providing, on the one hand, adequate access to the tumor, will eliminate the risk of damage to both the facial nerve and secretory fibers (causing autonomic disorders in the parotid region) leading to the PG, as well as preserve the parotid region architecture.

The purpose of the study: Empirical confirmation of theoretical assumptions about the possibility of removing of the deep lobe parotid tumors by transparotid approach with mobilization *superficial* lobe of the PG.

Material and methods: Among the 43 patients with PG tumors under our supervision, 8 (18%) of them were diagnosed with tumors of the deep lobes of the PG: 7 patients had pleomorphic adenoma, and one patient had a malignant mixed tumor.

In contrast to 35 (81%) patients who underwent subtotal or total parotidectomy, in 8 (19%) patients with tumors of the deep lobes of the parotid gland, the tumors were removed by transparotid approach which includes mobilization of the superficial lobe of the PG.

Expanding the surgical wound by pulling the mandible superiorly and anteriorly, the muscles (mm. pterygoideus, externus et internus, digastricus, stylohyoideus, stylopharyngeus) located between the sternocleidomastoid muscle and of the mandible branch, as well as the muscles located in the deep part of the retromandibular fossa are separated from the tumor.

Result: Complications related with surgery, tumor recurrence or the presence of metastases in the follow-up period of patients from 2 to 5 years were not detected (in the case of carcinoma, the follow-up period is more than 10 years).

Conclusion: The transparotid approach with mobilization of the superficial lobe of the PG, allows radical removal of deep lobe parotid tumors (with dimensions within 6 cm in diameter) spreading into the parapharyngeal space. The surgery avoids damage to potentially vulnerable neurovascular structures and the appearance of a cosmetic flaw in the parotid region. The success of radical surgery in removing tumors of this localization largely depends on compliance with the ablaticity of surgery and preservation of the tumor capsule during its elimination.

[HNS]

Skull Base Surgery: A Challenge and Opportunity for the Maxillofacial Surgeon

Riaz Ahmed Warraich

Presentation type – plenary session

Skull base surgery encompasses complex anatomical territories and high-risk neurovascular structures, historically managed by neurosurgery and otolaryngology. However, with advances in surgical techniques and interdisciplinary collaboration, oral and maxillofacial surgeons are increasingly contributing to the management of anterior and lateral skull base pathologies.

This presentation evaluates the evolving role of the maxillofacial surgeon in skull base surgery, highlighting key challenges including surgical access, reconstruction, and proximity to critical anatomical structures. Emphasis will be placed on the integration of 3D imaging, endoscopic-assisted approaches, and intraoperative navigation in enhancing surgical precision and safety.

Through selected case discussions, the presentation explores current capabilities, limitations, and the need for structured subspecialty training within OMFS. The aim is to encourage dialogue on expanding surgical boundaries while ensuring patient safety and optimal outcomes through multidisciplinary approaches.

[HNS]

Managing Recurrent Upper Eyelid Basal Cell Carcinoma: Oncologic Excision and Two-Stage Cutler–Beard Reconstruction

R. Nazarova, A. Aliyeva

Presentation type – E-Poster

Background. Recurrent upper eyelid basal cell carcinoma (BCC) poses functional and cosmetic challenges, especially in patients with comorbidities.

Aims and Objectives. To present the surgical and anesthetic management of a recurrent upper eyelid basal cell carcinoma, highlighting the use of two-stage Cutler–Beard flap reconstruction.

Methods. A 51-year-old patient presented with recurrent right upper eyelid BCC. “The second-stage reconstruction with pedicle division and definitive upper and lower eyelid formation using a Cutler–Beard flap” was performed,

Results and Findings. Histopathology confirmed rpT1N0M0 BCC with negative margins. Recovery was uneventful, with satisfactory eyelid function and cosmesis.

Conclusions. Staged Cutler–Beard reconstruction is effective and safe for recurrent upper eyelid BCC, achieving oncologic control, functional restoration, and good cosmetic results, even in patients with comorbidities.

[HNS]

Update of TNM 8th edition in head and neck oncology

Oumar Youssouf Ibrahim

Presentation type – oral presentation

Introduction: Assigning the proper clinical and pathological stage is one of the key activities for clinicians caring for those afflicted with cancer.

Staging is based on anatomic and non-anatomic criteria to assist in estimating prognosis and planning treatment.

Study design: to study what are changed in 8th edition from previous classifications and the important of these changes. As well as the impact of update on prognostic analysis.

Conclusion: The 8th edition head and neck AJCC cancer staging manual incorporates significant changes which include:

A separate staging algorithm for HPV-associated cancer of the oropharynx, Changes to the tumor T categories in the nasopharynx, oral cavity, and skin. And addition of tumor ENE to the lymph node category for most sites.

[HNS]

The science, craft and art of complex thyroid surgery

Aziz Aliyev

Presentation type – plenary session

Head and neck cancers appear to be increasing worldwide and causing significant morbidity and mortality. This work aims to introduce the epidemiological trends of head and neck cancers in Azerbaijan over a seven-year period (2018-2024) and to present the experience of the National Center of Oncology in the treatment of this group of patients. Over the last 7 years, head and neck cancers accounted for more than 4% of all cancers in Azerbaijan and were responsible for more than 3% of all cancer-related deaths. These cancers were approximately 3 times more common among men than among women. The male-female difference was most apparent for laryngeal cancer. As for the age situation, head and neck cancers among people over 50 were diagnosed more often than among people of younger ages. Additionally, the global tendency of rising incidence of late-stage head and neck cancers was also observed in Azerbaijan. Around half of new cases were diagnosed at late stages (stage III or IV). The thyroid cancer is also rising in Azerbaijan and should be treated conservatively as lobectomy for non-aggressive cancers and radical for thyroid medullary carcinoma cases. Some patients require recurrent nerve and in some cases internal jugular vein salvage if the tumor invades those structures to improve the prognosis of the patient. The treatment applied at the National Center of Oncology targets to eradicate the tumor completely, to minimize morbidity while maintaining function and improve

the patient's life quality. Patients with locoregionally advanced head and neck squamous cell carcinoma receive a multimodal treatment including surgery followed by adjuvant radiation (chemo) therapy or concurrent chemoradiotherapy with or without salvage surgery. In general, head and neck cancers continue to remain a serious health burden with an increasing incidence of late stage cases; and the majority of cases require a complex management including multiple modalities.

[NHS]

Our experience of surgical treatment of carotid chemodectoma

1Rzayev R.M. 2Rzayev R.R., 3Aliyev B.Sh.

1Internal Troops Military Hospital, Baku, Azerbaijan; 2Baku Central Hospital, Azerbaijan, 3Head of Oral & Maxillofacial Surgery Department (Azerbaijan Medical University), Baku.

Carotid chemodectoma (CC) or paraganglioma is a rare tumor that develops from the chemoreceptor glomus located on the adventitial bifurcation layer of the common carotid artery (CCA) – behind or at the edge of the internal carotid artery (ICA). The tumor composes for about 60-70% of all head and neck paragangliomas: in most cases, it is benign – malignancy is observed in 6-10% of cases. The criteria for malignancy are more often the presence of recurrences or metastases than the morphological signs of a tumor.

Purpose of the study: Analysis of the results of surgical treatment of CC.

Material and methods: There were only 5 patients with CC (average age 48 years) under observation, including 3 men and 2 females. With the exception of one patient, 4 patients were admitted after unsuccessful surgery.

Along with the examination of patients, the "gold standard" of diagnostics was performed, including CT (preferably axial sections), MR angiography, and carotid angiography.

The extent of the spread of CC in patients, estimated according to the classification of Shamblin W.R. et al., 1971. A type I tumor was detected in one patient – its size reached 2.5 cm. The edges of the tumor were in close contact with the medial walls of both carotid arteries. Type II tumor is detected in 2 patients – it partially grown into the carotid arteries. In both cases, its dimensions were less than 5 cm. Type III tumor detected in the remaining 2 patients – tumor completely enveloped the carotid arteries. The size of the tumor was more than 5 cm.

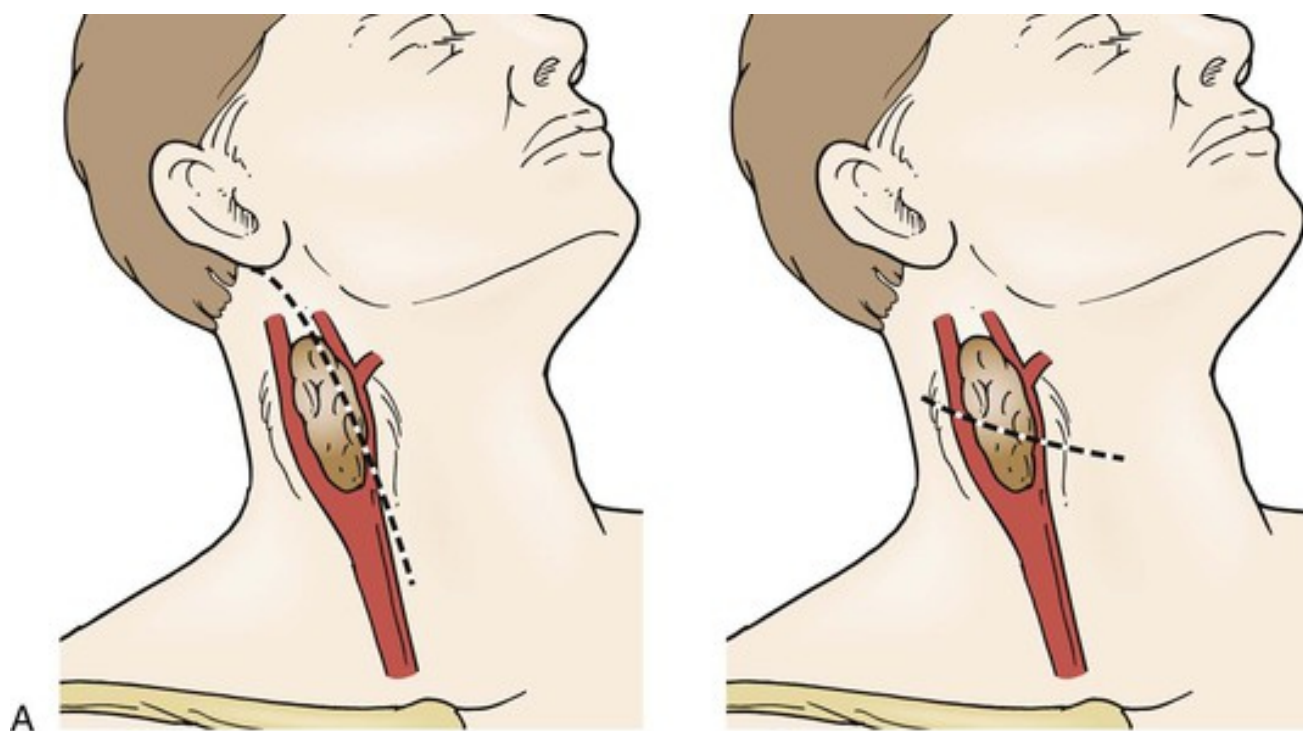
The stages of the surgery included: an oblique skin incision from the mastoid tip process to the level of the upper edge of the thyroid cartilage; wide exposure of the surgical field (dissection of the digastric and hypoglossal muscles); overlay of provisional ligatures to the common, external and internal carotid arteries; separation of the hypoglossal and vagus nerves; release (subadventionally) of the tumor from the external carotid artery (ECA) and its branches (starting from the proximal end towards the distal end); "pushing" the tumor outwards from the bifurcation creates a wide view of the surgical wound, that allows to fully mobilize and remove the tumor.

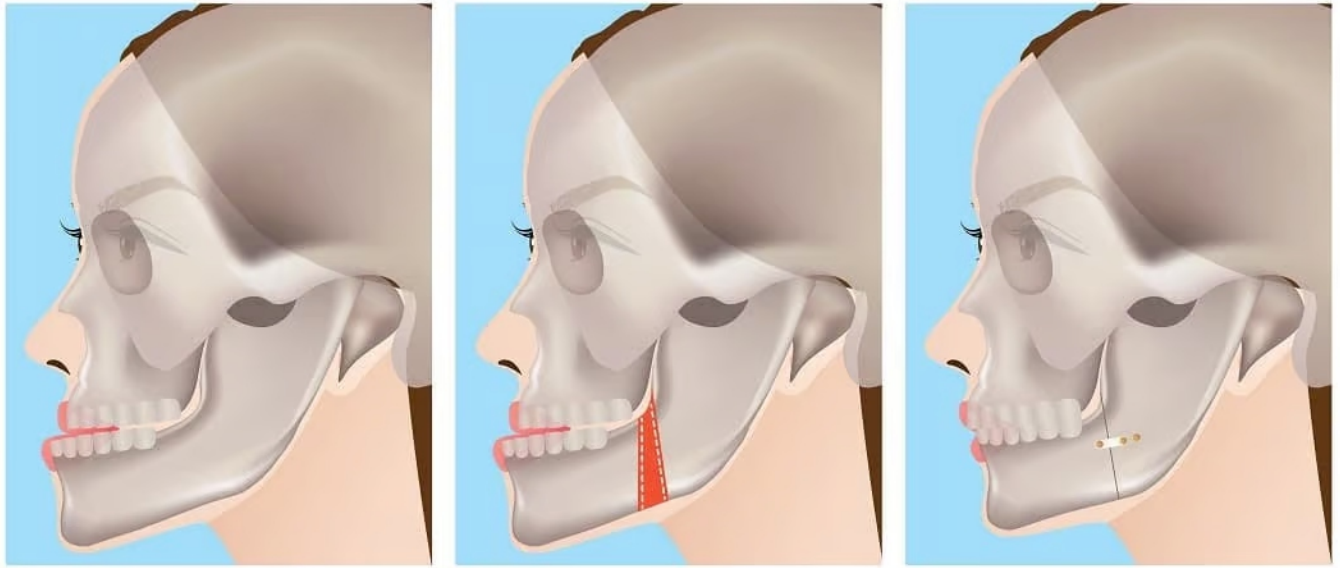
Result: Of the 5 patients with CC, only 4 were operated on: one patient with Type III tumor was denied surgery due to the inoperable condition (insufficient collateral brain circulation) of the tumor. In one patient with Type I and the other – with Type II tumors, the main vessels of the neck were preserved when the tumor removal. In the second patient with a Type II tumor, resection of the ECA was required during its removal. In one patient with a Type III tumor, due to the high location of the tumor (at the skull base), the CCA bifurcation was resected – we were unable to restore the integrity of the ICA. Despite the positive dynamics in the functioning of the connective arteries of the Willis circle, 12 hours after the surgery, this patient appeared signs of cerebral hemisphere ischemia. 10 hours after intensive symptomatic therapy, stabilization of brain function was fully restored.

Intraoperative cranial nerve damage occurred in 3 cases: a patient with a type I tumor and one patient with type II tumor, respectively, had damaged IX and XII cranial nerves, and a patient with a type III tumor damaged X and XII cranial nerves. Only in one case (in a patient with a Type II tumor), any complications associated with the tumor removal it was not marked.

Surgery duration of in 2 patients was about 7 hours, and in one patient - 12 hours, the average volume of blood loss was 600 ml (volume from 80 to 1500 ml).

Conclusion: Despite the improvement of surgical treatment of CC, the frequency of postoperative complications stays high. The close connection of the tumor with the neck neurovascular bundle, as well as its spread to the skull base, can serve as an indicator of estimation the degree of operational risk. The favorable outcome of the surgery largely depends on the surgeon experience regarding his ability to operate in the area of cervical neurovascular bundle.





Orthognathic surgery [OrS]

[OrS]

Orthognathic Surgery in Rehabilitation of Cleft Lip and Palate Patients

A.L. Ivanov, N.V. Starikova, N.V. Udalova, S.A. Sukacheva

Presentation type – Plenary session

Rehabilitation of cleft lip and palate patients is a multistage, interdisciplinary process involving coordinated surgical and orthodontic procedures. Each phase affects subsequent outcomes. Although structured protocols exist, no universal treatment algorithm has been established. One of the most debated issues is the indication and timing of orthognathic surgery.

Maxillary hypoplasia is a frequent consequence of cleft repair, with reported prevalence ranging from 25% to 60%, depending on cleft type and surgical history. Even with compensated occlusion, midfacial retrusion may still be present. Early identification, starting at 4–5 years of age, is essential for planning long-term outcomes.

Several factors increase the risk of maxillary hypoplasia, including early and extensive palatal surgery, multiple interventions in early childhood, aggressive tissue handling, and additional procedures such as pharyngoplasty. Scarring and interference with growth centers play a key role in the severity of skeletal deficiency.

Progressive deformities may develop after primary surgeries. Orthodontic treatment is essential to maintain transverse dimensions. Distinguishing between true and pseudo-narrowing is important to avoid overexpansion, which can affect occlusal stability. However, sagittal discrepancies are rarely correctable by orthodontics alone, often leading to strong dental compensation and unsatisfactory esthetics. Alveolar bone grafting, usually performed at age 7 after expansion, is vital for maxillary stabilization and success of future orthognathic surgery.

Orthognathic surgery is generally indicated after skeletal maturity and completion of orthodontic treatment, typically after age 14. Le Fort I osteotomy, alone or with bilateral sagittal split osteotomy (BSSO), is the preferred approach. Mandibular asymmetry is the main indication for bimaxillary surgery. Multipiece maxillary osteotomies and rapid palatal expansion are avoided due to higher risks. Low-trauma techniques are essential to minimize complications.

In our analysis of two patient cohorts—one treated surgically and the other with compensatory orthodontics—satisfaction was higher in the surgical group. Maxillary hypoplasia remains underdiagnosed. Early planning and surgical correction provide better functional and aesthetic outcomes in cleft rehabilitation.

OrS]

The "forced symmetry" protocol in the treatment of asymmetric dentofacial deformities. A retrospective follow-up of 57 cases

Andre S. Serrano

Presentation type – symposium

Introduction: Virtual surgical planning increases the accuracy of hard tissue repositioning in the treatment of dentofacial deformities. However, asymmetric patients in addition to different lateral projections of hard tissues (i.e. gonial angles or parasymphyseal areas) may also exhibit a difference in surrounding soft tissue thickness that may be underdiagnosed. Consequently, symmetrical positioning of the hard tissue framework will not guarantee postoperative soft tissue symmetry. A new protocol called “forced symmetry” was introduced in 2016, to predict final soft tissue symmetry by mimicking facial symmetry using clinical lateralization of the mandible in the preoperative assessment of the patients.

Material and methods: Sixty consecutive patients presenting facial asymmetry (hemimandibular elongation) were treated by the same surgeon who performed bimaxillary orthognathic surgery using the “forced symmetry” protocol from July 2020 to Jan 2025.

Patients presenting osteochondroma were not included. After at least 6 months postoperatively the patients were evaluated regarding the symmetric aspect of the face and answered a questionnaire whether they considered or not their face symmetric in frontal view. The patients were also assessed by the surgeon.

Results: 45 female and 12 male patients, a mean age of 31 years were treated using the “forced symmetry” protocol. All patients (100%) were considered symmetric after 6 months postoperatively.

Discussion: Orthodontists, maxillofacial surgeons, and laypersons are able to notice a 2mm side deviation at the tip of the nose and a 4 mm side deviation at the chin level in a frontal view. However, chin and gonial angle differences are the most significant factors affecting the assessment of facial asymmetry. The “forced symmetry” protocol facilitates treatment planning, where soft tissues dictate the position of hard tissues. In this study the “forced symmetry” protocol has shown to be a predictable method to achieve symmetry in asymmetric patients submitted to orthognathic surgery.

[OrS]

From Stability to Precision: Additional Osteotomies Enhancing BSSO

Suheyb Bilge

Presentation type – symposium

The bilateral sagittal split osteotomy (BSSO) remains the gold standard for the correction of mandibular deformities including prognathism, retrognathism, and asymmetries. Over the years, modifications such as the Hunsuck/Epker technique have significantly reduced complications and improved stability. However, the pursuit of greater precision and postoperative success has led to the introduction of additional osteotomies that further facilitate the BSSO. Inferior border osteotomy, by shifting the split line closer to the mandibular border, allows for more predictable control of

the splitting process while reducing the risk of border defects. Similarly, the posterior bending osteotomy enhances condylar positioning by enabling passive adaptation between the proximal and distal segments. These adjunctive techniques collectively contribute to safer execution, improved segment handling, and superior long-term outcomes.

This presentation highlights the evolution of BSSO from a stability-oriented approach to a precision-driven concept, underscoring how additional osteotomies can optimize surgical control, minimize complications, and maximize functional and aesthetic results.

[OrS]

Transforming Orthognathic Surgery: The Minimally Invasive Le Fort I Approach

Ahmet Emin Demirbaş

Presentation type – plenary session

Le Fort I osteotomy is a well-established and reliable surgical procedure for the correction of dentofacial deformities. However, the conventional approach is often associated with significant intraoperative bleeding, postoperative pain, and edema, which can increase patient morbidity and delay recovery. In recent years, the adoption of minimally invasive surgical techniques has aimed to address these challenges by reducing tissue trauma, preserving soft tissues, and ultimately improving patient-related outcomes.

This presentation will explore the concept of minimally invasive Le Fort I osteotomy and discuss how this approach is transforming orthognathic surgery. Advantages such as reduced bleeding, minimized swelling, shortened recovery time, and enhanced patient satisfaction will be highlighted. Furthermore, recent literature and clinical evidence will be reviewed to evaluate both the potential and limitations of this technique in redefining current standards in orthognathic surgery.

[OrS]

Postoperative skeletal stability of bioresorbable osteofixation in a series of orthognathic surgeries (OGS) involving "major segmental movements"

Young Wook Park

Presentation type – plenary session

Background: Recently, innovative bioresorbable osteofixation systems have been increasingly adopted as effective alternatives to titanium devices, aiming to overcome their inherent

disadvantages. However, concerns remain regarding the relatively weak mechanical properties of bioresorbable materials.

Aim: This study aimed to evaluate the postoperative skeletal stability of bioresorbable osteofixation in a series of orthognathic surgeries (OGS) involving so-called "major segmental movements" — defined as large skeletal movements or movements against bony resistance.

Methods: A retrospective comparative study was conducted. Patients were categorized into two groups based on the fixation method: bioresorbable and titanium miniplate fixation. Changes in mandibular and/or maxillary position over time were assessed using serial lateral cephalometric radiographs.

Results: The group treated with poly-L-lactic acid (PLLA) plates showed skeletal stability comparable to the titanium group, while the unsintered hydroxyapatite/poly-L-lactide (u-HA/PLLA) mesh fixation group demonstrated superior long-term skeletal stability.

Conclusion: Bioresorbable osteofixation appears to offer comparable, and in some cases superior, postoperative skeletal stability compared to titanium fixation in orthognathic surgery. Additionally, it eliminates the need for a secondary surgery for hardware removal.

[OrS]

New paradigms in the surgical treatment of facial asymmetry

Fabrizio Spallaccia

Presentation type – plenary session

The current management of condylar hyperplasia generally recommends condylectomy only when the affected condyle exhibits a growth differential greater than 10% on SPECT compared to the contralateral side. At our maxillofacial surgery unit, adaptive condylectomy is most often performed via a transcutaneous approach. Nevertheless, we have observed that this surgical strategy for correcting facial asymmetry may also be applied in cases where condylar growth has ceased, potentially in combination with maxillary surgery. This approach proposes addressing facial asymmetries not through conventional orthognathic surgery with maxillo-mandibular osteotomies, but rather solely by condylectomy. In addition to shortening operative time and patient recovery, this method also avoids the risks associated with orthognathic surgery, such as injury to the inferior alveolar nerve. The authors further analyze the potential risk of temporomandibular joint dysfunction affecting either the operated condyle or the contralateral healthy side. A review of the surgical series indicates that this risk is virtually negligible.

[OrS]

Prebent Miniplates in Le Fort I Osteotomy: Biomechanical and Clinical Insights

Fatih Mehmet Coskunes

Presentation type – plenary session

The use of prebent miniplates in maxillary orthognathic Le Fort I surgery has recently become a topic of interest from both biomechanical and clinical perspectives. This presentation explores the current understanding of prebent miniplates, reviews the current literature focusing on their role in enhancing surgical efficiency and postoperative stability by combining existing literature with our own experiences in clinical and finite element analysis setting.

[OrS]

From Planning to Recovery: Management of Orthognathic Surgery

Emrah Soylu

Presentation type – plenary session

The success of orthognathic surgery depends not only on accurate planning and surgical precision but also on effective perioperative management. Comprehensive perioperative care enhances patient comfort, reduces the risk of complications, and contributes to faster recovery. This presentation outlines a multidisciplinary approach to patient and process management at the Department of Oral and Maxillofacial Surgery, Erciyes University Faculty of Dentistry. The entire treatment pathway—from the initial consultation through surgical planning, hospitalization, postoperative care, and long-term follow-up—is detailed, emphasizing strategies that optimize both clinical outcomes and patient satisfaction.

[OrS]

A Surgical Approach to Enhancing Orthodontic Treatment Outcomes

G.Aliyeva, E.Aliyev

Presentation type – oral presentation

Background: The prevalence of dentoalveolar anomalies has grown significantly, with a 16% increase in cases reported between 2020 and 2023 by the Orthodontic Association of the United Kingdom, and 76% of orthodontists observing this trend.

Aims and Objectives: Traditional orthodontic treatment requires 2 years and may lead to complications such as gingival recession and bone resorption. Innovative surgical methods like Alveolar Monocortical Corticotomy (AMCT) have been proposed to address these limitations

Methods: Nine patients, aged 33–37, with Class II dentoalveolar anomalies were treated with AMCT under local anesthesia and orthodontic treatment began two weeks later.

Results and Findings: The treatment duration was reduced by 67%, with orthodontic completion achieved in four months. No complications such as gingival recession or bone resorption were observed during or after treatment.

Conclusions: The findings of this study, supported by a review of 43 studies, demonstrate that AMCT significantly reduces treatment time and prevents complications. This method is particularly effective for patients aged 30 and older with Class II anomalies.

[OrS]

Delayed Inflammatory Responses Following Biodegradable and Osteoconductive Osteofixation in Orthognathic Surgery

Min-Hyung Choi, Young-Wook Park

Presentation type – E-poster

Background. u-HA/PLLA devices are widely used in orthognathic surgery but may cause delayed inflammation, which is underreported.

Aims and Objectives. This study explores clinical and histopathological patterns of delayed inflammation related to u-HA/PLLA use in jaw surgery.

Methods. Three bimaxillary surgery cases were reviewed retrospectively. Clinical findings, H&E staining, and SEM of retrieved devices were analyzed.

Results and Findings. Inflammation occurred in the mandible 12–35 months post-op. Histology showed chronic inflammation and SEM revealed partial degradation.

Conclusions. u-HA/PLLA may trigger late inflammation requiring surgery. Patients should be informed and monitored for at least 5 years.

[OrS]

Effects of Demographic and Surgical Factors on Postoperative Nausea and Vomiting After Orthognathic Surgery

Reyhan Talibova ,Cihan Topan, Dilek Günay CANPOLAT, Seher Orbay YAŞLI, Fatma Doğruel, Ahmet Emin DEMİRBAŞ

Presentation type – oral presentation

Purpose: The study aimed to investigate the relationship between demographic and surgical parameters and postoperative nausea-vomiting in patients undergoing orthognathic surgery.

Materials and Methods: This study was conducted as a retrospective and demographic (age, weight, gender) and surgical (type of deformity, amount of activation, duration of surgery)

parameters related to orthognathic surgery patients were collected from patient data and retrospectively analyzed.

Findings: It has been determined that the surgery duration of patients experiencing post-operative nausea and vomiting is longer than that of those who do not experience it, and the difference is statistically significant ($p=0.004$).

Result: In our study, it was determined that the incidence of postoperative nausea and vomiting in patients undergoing orthognathic surgery is significantly related to the duration of the surgery. It has been observed that as the duration of the surgery increases, the frequency of nausea

[OrS]

MSE: Expanding Boundaries — Maxillary Surgical Expander Assistance

Kamilla Rustamova

Presentation type – oral presentation

Background: Maxillary transverse deficiency remains a challenge in orthodontics and orthognathic surgery, particularly in adult patients, where conventional orthopedic approaches often show limited effectiveness. Maxillary Surgical Expander (MSE) has emerged as a hybrid technique, combining skeletal anchorage with surgical assistance to achieve stable maxillary expansion.

Aim: To evaluate the clinical efficiency, indications, and stability of outcomes when using MSE with surgical assistance in patients with maxillary constriction.

Methods: A review of clinical protocols and cases involving MSE with surgical support was performed. Indications, surgical protocols, expansion outcomes, and post-treatment stability were analyzed. Comparative evaluation with conventional expansion techniques was carried out.

Results: MSE with surgical assistance demonstrated predictable skeletal expansion, improved stability, and reduced relapse compared to conventional methods. The technique extended the range of clinical indications and showed high efficiency in skeletally mature patients.

Conclusion: MSE with surgical assistance represents a reliable and effective tool in the correction of maxillary transverse deficiency, expanding the boundaries of traditional orthopedic and orthognathic treatment protocols.

[OrS]

Genioplasty: A comprehensive review of surgical techniques and clinical outcomes

Guliyeva G.H., Guliyev S.E.

Azerbaijan Medical University Department of oral and maxillofacial surgery

Presentation type – oral presentation

Introduction. The chin significantly influences facial harmony and aesthetics. The aesthetics of the lower face is affected by the position of the genium, which makes reestablishment of genial morphology an essential component. Genioplasty, involving the surgical modification of the chin's bony structure, addresses deformities such as microgenia, macrogenia and retrognathia. Beyond cosmetic enhancements, genioplasty has been recognized for its potential in improving airway patency, offering therapeutic benefits for OSA patients.

Material and methods. A total of 11 patients (3 male, 8 female) who underwent genioplasty at the Educational-Surgical Clinic of Azerbaijan Medical University were included in this study. Of these, 3 patients presented with retrognathia, 5 with macrogenia, and 3 with gonial asymmetry. All patients underwent preoperative assessments including photometric analysis, computed tomography (CT), and cephalometric examinations. Preoperative 3D planning was performed for all patients. Depending on the type of pathology, different genioplasty techniques were employed to address the individual anatomical and functional needs of each case. The procedure is performed using various techniques-including sliding genioplasty, advancement, setback, vertical augmentation, and narrowing genioplasty-with each approach offering specific benefits tailored to patient needs.

Conclusion. Advances in virtual surgical planning, pre-bent absorbable plates, and three-dimensional printing technology have enhanced the precision of genioplasty, leading to improved functional and aesthetic outcomes.

Results. Genioplasty stands as a multifaceted surgical intervention, offering both cosmetic enhancements and functional benefits, particularly in airway management. Ongoing research and technological advancements continue to refine surgical techniques, aiming to optimize patient outcomes and expand the therapeutic applications of genioplasty.

[OrS]

New Technologies in Orthognathic Surgery

Prof. Mohammad Bayat

Presentation type – plenary session

Orthognathic surgery is one of the most effective and exciting surgical procedures ever known in the medical world.

With the advent of new technologies, including high-quality 3D imaging and the possibility of surface imaging of the oral environment, (oral scanning), as well as software related to virtual surgery and the possibility of 3D printing of resins and metals,

A great revolution has occurred in improving the quality of surgery, providing brilliant and predictable results and reducing surgical risk.

In this lecture, the latest methods and facilities are presented along with interesting case presentations.

[OrS]

Clinical Approaches in Orthognathic Surgery

Ilham Mehdiyev

Presentation type – symposium

Aim: Orthognathic surgery is one of craniomaxillofacial surgical treatment of severe facial deformities

and dentofacial deformities. The main goal of orthognathic surgery is to solve functional and aesthetic problems resulting from complex dentofacial disorders..

Materials and Methods: Planning should be multidisciplinary collaboration among dentist, periodontist, orthodontist, surgeon, prosthodontist. One aspect of considerable attention was surgical timing within the overall treatment period. Timing of surgery may vary in two periods when growth and development are not completed and completed.

Diagnostic information which must be used are following:

- Clinical examination(face shape, relationship between facial dimensions, relationship of soft tissues to teeth, clinical dimensions);
- Radiographic analyses(X-ray,CBCT)
- Dental working models or digital planning models
- Other information (speech, audiometry, psychological and medical status)

Planning expectations are ensure functional occlusion of teeth in the most ideal position to support stability and aesthetics, correct skeletal inconsistency, achieve maximum aesthetic results with surgical planning without changing occlusal or skeletal stability, solve of TMJ problems

Treatment plan sequence:

Dental and periodontal treatment and extractions

Pre-surgical orthodontic treatment if needed

Orthognathic Surgery or Surgery First

Post-surgical orthodontic treatment

Other surgeries (rhinoplasty, etc.)

Surgical methods for mandibula are sagittal split osteotomy and genioplasty and

Lefor I osteotomy in the maxilla

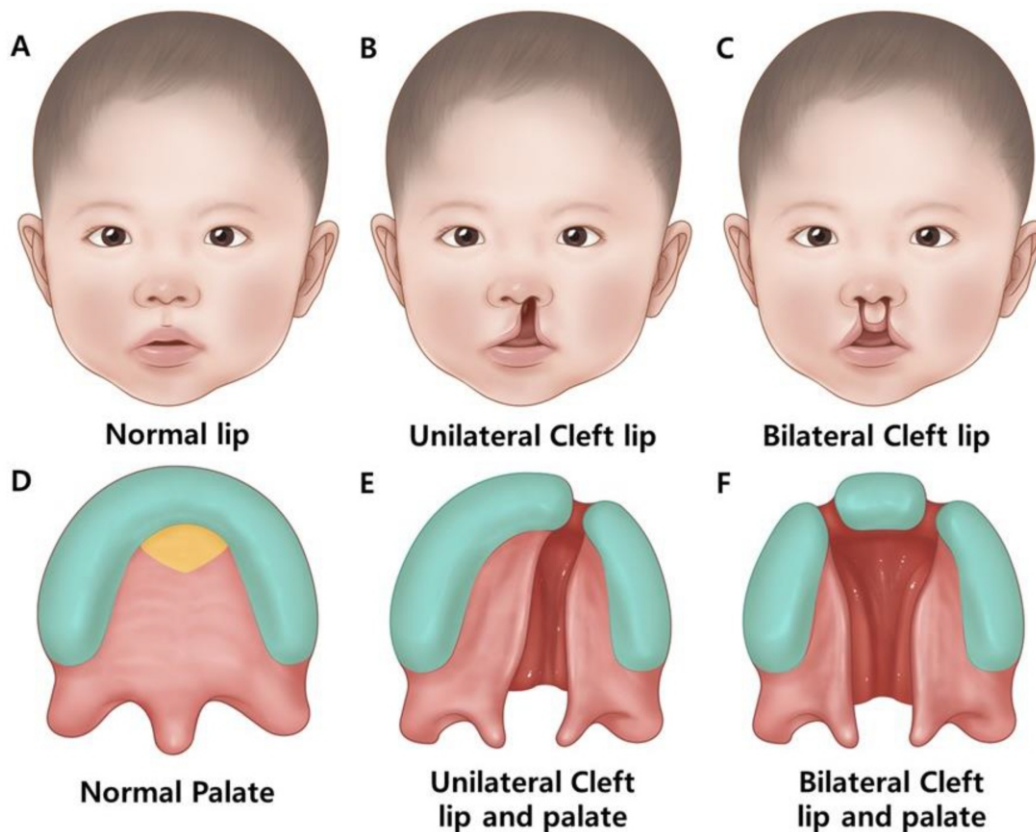
There are possible variation of surgery are single jaw and bimaxilla

Approach groups who requires surgery

Class- I , II ,III deformities and facial asymmetries

Results: Orthognathic surgery has deep impact for improvement of facial harmony and esthetics, restoring of skeletal and dental relationship and occlusal stability,TMJ function,expanding of airway dynamics shows positive effect of different surgical techni ques

Conclusion: Coordination between surgeon, orthodontist and patient has essential impact for good result of treatment because of limitations from surgical and orthodontic point of view to prevent and minimize future complication.



Craniofacial/Cleft lip and palate [CLP]

[CLP]

Management of Orbital dystopia

S.M. Balaji

Presentation type – Plenary session

There are many causes for the defect of the bony orbit. It could be due to fractures of any cause, post tumor/cyst removal or congenital deformities. In any case, the defect may be unilateral or bilateral and very rare along the midline. In any situation, a considerable sum of orbital bone mass may be missing or defective in size. Additional impairments such as those of ears, loss of adjacent structures or uncoordinated growth (if in children) may impede the treatment goals. It is not uncommon to find associated disorders of nervous structures such as meningocele or other neural defects also in developmental causes. In non-trauma cases, very rarely associated cranial bones such as frontal bones may also be involved. Needless to say, if hypertelorism also is a part or resultant deformity, that should also be corrected. The final step would be to correct any abnormal slants. In any case, the goal would be to save the eyeball, if there is functional capacity. The next step would be to close the defects as much as possible to obliterate the defect

functionally as well as anatomically. This would help to evolve proper feeding, swallowing, speech, prevent repeated nasal/sinus infections etc., Next stage would be reconstruction of the associated soft tissue defects. If involving nasal cavity, late rhinoplasty may be required to complete the nasal defect. The timing of the surgery needs to be extremely customized. The presentation will take through the 30 years of experience in orbital dystopia correction from simple trauma related defects and missing orbital bones to complex, multiple Tessier's orofacial clefting. Appropriate example from the author's surgical experience will help to draw meaningful algorithm to plan and surgically treat the patients

[CLP]

Decannulation dilemmas: timing tracheostomy tube removal in children with craniofacial deformities.

S.M. Balaji

Presentation type – Plenary session

During early phases of life and active growth, children born with severe craniofacial deformities often face significant challenges in maintaining airway patency. These challenges can range from obstructive sleep apnea to life-threatening airway blockages. In certain situations, a planned or emergency tracheostomy may be necessary to ensure adequate airway volume and facilitate unassisted breathing. Tracheostomy is often the choice that is practiced globally, as it is perfected over the centuries and provides concrete and immediate relief. However, the prolonged use of a tracheostomy tube can introduce its own set of complications. These can include infection, granulation tissue formation, tracheomalacia, tracheal stenosis, and even tracheoesophageal fistula. These complications can significantly impact the child's quality of life and may require additional medical interventions. In addition, the presence of tracheostomy tubes may hamper normal social interaction, physiological and psychological wellbeing of children. One of the most contentious issues in this context is the timing of tracheostomy decannulation in children with long-term tracheostomy. Decannulation, or the removal of the tracheostomy tube, is a critical step towards restoring natural breathing or wean to unassisted natural breathing. However, the optimal timing for this procedure remains a subject of debate. Factors such as the child's overall health, the nature and severity of the craniofacial deformity, the presence of comorbid conditions, and the child's ability to protect their airway must all be carefully considered. The impact of the long term presence of tube, biological and structural changes, adaptations (behavioural) of the child and care giver's resilience shall form a factor for the decision. This presentation will explore the author's perspectives on this critical aspect, drawing on extensive experience in managing such cases. The author will discuss the various factors that influence the decision to decannulate and will present strategies for managing the potential complications associated with long-term tracheostomy. The goal is to provide a comprehensive overview that

can guide clinicians in making informed decisions about tracheostomy management in children with severe craniofacial deformities.

[CLP]

Preservation Palatoplasty: Principles and Advantages of a Novel Approach

A.L. Ivanov, S.A. Sukacheva

Presentation type – Plenary session

Preservation palatoplasty is a surgical technique for cleft palate repair that emphasizes the conservation of key anatomical structures. Unlike traditional methods, it preserves the integrity of the tensor veli palatini muscle and its aponeurosis, avoiding maneuvers such as fracturing the pterygoid hamulus, detaching the aponeurosis, dissection in the Ernst space, and deep undermining of the lateral pharyngeal walls.

We developed a specific maneuver for mobilizing and stretching the nasal-side mucoperiosteal flap. This allows for midline closure without excessive dissection or tension, even in wide clefts. In our series, the cleft width index ranged from 0.3 to 0.7.

This approach minimizes trauma, reduces postoperative edema and scarring, and improves functional outcomes. The limited extent of dissection may also reduce complication risks and preserve vascular supply. Additionally, we apply this principle in hemi-uvula preservation: retaining one half of the uvula enables soft palate lengthening equal to the uvular base, restoring more natural anatomy and potentially improving velopharyngeal competence.

Postoperative recovery was assessed by respiratory status and time to resume oral feeding. No respiratory complications were observed in the preservation group, while up to 50% of patients in the control group experienced breathing disturbances. Oral intake resumed, on average, 22 minutes after extubation in the preservation group, compared to up to several days in controls.

We also observed a significant reduction in wound dehiscence and residual defects, likely due to decreased tissue trauma and swelling. The technique improves comfort for both surgeon and anesthesiologist, enhancing intraoperative confidence and reducing the likelihood of severe postoperative airway or feeding complications.

These findings support preservation palatoplasty as a safe, anatomically respectful, and effective alternative to conventional cleft palate repair techniques and suggest it may be recommended as a standard approach.

[CLP]

Staged reconstructive surgical interventions in patients with congenital cleft lip and palate

Eshiev AM, Yuldashev IM. Bishkek, the Kyrgyz Republic.

Presentation type – symposium

Among dental diseases, congenital pathologies of face region have always attracted particular attention from researchers. At present, the requirements for the quality and effectiveness of dental care have significantly increased. In Kyrgyzstan, the issue of treatment and rehabilitation of children with congenital cleft lip and palate remains relevant due to the insufficient availability of qualified specialized care.

Aim of this study is to improve the effectiveness of surgical interventions in the treatment of congenital clefts of the lip, palate, and alveolar ridge of the maxilla, as well as to perform rhinoplasty in order to restore the aesthetic appearance of patients.

Methodology: A modified cheiloplasty are performed at the age of 6 months, between 12 and 18 months, uranoplasty From 9 to 11 years of age, autogenous bone grafting. At the age of 16 years, open rhinoplasty (all methods have patents of the Kyrgyz Republic). Totally one year performed 150 to 180 surgical procedures for the correction of congenital cleft lip and palate

Conclusions. The surgical techniques applied, demonstrate clinical effectiveness at different stages of child development. Each of these procedures is tailored to the patient's age and anatomical characteristics, which contributes to achieving favorable outcomes.

As a result of this comprehensive approach and the implementation of modern surgical methods, a significant improvement in the quality of life of our patients has been observed, as confirmed by positive feedback from their families and the successful outcomes of the rehabilitation process. Therefore, the clinic's activities in the field of congenital cleft lip and palate correction not only provide confidence in the future for our young patients but also ensure consistently positive results, establishing the institution as a reliable center of specialized medical care.

[CLP]

Management of Obstructive sleep apnea in children and adults

Adi Rachmiel

Presentation type – plenary session

Introduction: Obstructive sleep apnea (OSA) may appear in the pediatric population, in adolescents patients or in adults.

OSA in pediatric populations is often associated with congenital craniofacial malformations due to hypoplastic mandible and decreased pharyngeal airway. Some showed respiratory distress and some were tracheotomy dependent.

The adult OSA is a developing situation due to hypoplastic jaws associated with hyper laxity of the muscles and obesity.

Materials and methods: The pediatric OSA Patients were treated by mandibular distraction osteogenesis. Patients were treated by using external or internal distraction devices.

The adolescence OSA patients manifest short hypoplastic mandibular ramus and steep occlusal plane and were treated by Counter clockwise maxillo mandibular advancement usually by mandible first. The adult OSA of none syndromic patients were treated by Maxillo mandibular advancements (MMA) using conventional orthognathic methods.

Results: In all pediatric patients, an increase in mandibular length and pharyngeal airway was obtained. When using external distraction devices, an average mandibular elongation of 30mm was obtained. Using internal devices, the average advancement was 23mm.

The internal devices are more comfortable to the child with a precise and predictable vector of lengthening. However, there is a need for a second operation to remove them under general anesthesia. Final airway was 5 times larger in size.

In Adults, MMA surgery advanced the maxillomandibular complex with significant increase of the airway.

Conclusions: Internal devices are more comfortable to the child with a precise and predictable vector of lengthening. They leave less visible skin scar and should be considered as a first choice. Their main disadvantage is the need for a second operation for removal. External devices may be used with the main drawback of child discomfort and the risk of pin loosening that results in replacement or shortening of the retention period. In Adults- MMA improved the airway and decreased OSA symptoms.

[CLP]

Cleft Do's and Don't's

Reha S. Kisnisci

Presentation type – plenary session

Fundamental aim is to establish a desirable surgical repair of primary unilateral cleft lip and palate progressed into what would be described as a long-term success.

It is well understood that what might be achieved in surgery may not ensure sustaining the clinical outcome post operatively. Therefore, all aspects of the deformity should be lucidly understood in depth. Main issue is directing the main focus on superficial appearance yet undervaluing what is beneath might also have a role for subsequent outcome.

The presentation demonstrates our approach from surgical details and reconstructive strategies to long term results.

[CLP]

***PLEC* is a novel gene for congenital insensitivity to pain and isolated dental anomalies**

Nik Kantaputra

Presentation type – plenary session

Pain is a defense mechanism mediated by nociceptors that warns living organisms of noxious or harmful stimuli. Congenital insensitivity to pain is a rare human condition in which affected individuals do not experience pain throughout their lives. Individuals with congenital insensitivity to pain typically present with a number of distinctive features, including lack of pain perception, decreased temperature sensitivity, increased susceptibility to *Staphylococcus aureus* infections, loss of sense of smell, urinary incontinence, and delayed pupillary light reflexes. They may also have corneal scarring, acro-osteolysis, and Charcot joints.

This study aimed to identify the molecular etiology of congenital insensitivity to pain in two Thai patients. Clinical, radiographic, histopathologic, immunohistochemical, and molecular studies were performed. The patients were found to have congenital insensitivity to pain, self-mutilation, acro-osteolysis, cornea scarring, reduced temperature sensation, tooth agenesis, root maldevelopment, and underdeveloped maxilla and mandible. The skin biopsy revealed fewer axons through transmission electronmicrography. Whole exome and Sanger sequencing identified a rare homozygous variant c.4039C>T; p.Arg1347Cys in *PLEC*, a cytolinker protein. This p.Arg1347Cys variant is located in the spectrin repeat 9 region of the plakin domain. The substitution with a cysteine is expected to disrupt the stabilizing bonds and decrease the stability of the spectrin repeat 9 unit. *Plectin* is abundantly expressed and functions as the key cytoskeleton interlinking molecule. It is involved in signaling processes, that affect a number of fundamental functions in the spinal cord and brain. Whole mount *in situ* hybridization and immunohistochemical studies suggested that *PLEC* is important for the development of the maxilla and mandible, cornea, and distal phalanges and that abnormal corneas and acro-osteolysis in our patients may be of developmental origin. *Plec* expression in the spinal dorsal horn of mouse embryos, indicating that *Plectin* is expressed in spinal dorsal horn neurons, where pain sensation and sensory signals which are transmitted from the periphery occur. The decreased expression of vimentin and the lack of neurofilament expression in the skin of our patients may contribute to these phenotypes, as the proper formation of the neurofilament axon network is important for the establishment and maintenance of axon caliber and nerve conduction velocity. The findings of tooth agenesis and root maldevelopments led us to investigate whole exome sequencing results of 362 patients with isolated dental anomalies. We found extremely rare (allele frequency <0.00009) or novel variants in 12 patients with mesiodens or supernumerary teeth, 18 patients with tooth agenesis, nine patients with shortened roots, and a patient with microdontia. The presence of dental anomalies in these patients with *PLEC* variants supports the potential involvement of *PLEC* in tooth development. This is the first report demonstrating an association between the *PLEC* variant and congenital insensitivity to pain in humans. (The research is supported by Chiang Mai University).

[CLP]

Distraction fronto-orbital and fronto-facial monobloc advancement with once removed 'floating forehead'

S. Nishimoto, K. Kawai, H. Ishise, K. Nakajima, M. Kakibuchi

Presentation type – symposium

Background: Hirabayashi and Sugawara developed a method of gradual distracting fronto -orbital bone without elevation from the underlying dura. This approach did not change the relationship between the supraorbital and frontal area.

Aims and Objectives: Methods were devised to combine 'floating forehead' with distraction.

Methods: The frontal bone and supraorbital bar are removed once, distracters were placed between the reshaped supraorbital bar and the temporal bone, and the frontal bone, which was loosely fixed to the supraorbital bar, was laid on the dura.

Results and Findings: Intraoperative dural injuries were highly frequent, but they could be identified intraoperatively, and no postoperative spinal fluid leakage was observed. Cases after more than 20 years of follow-up with additional surgeries will be presented.

Conclusions: Gradual distraction fronto-orbital advancement with 'floating forehead' was an good option for syndromic craniosynostosis patients.

[CLP]

Evaluation of Bone Healing via Fractal Analysis Following Le Fort I Osteotomy in Cleft Lip and Palate Patients Undergoing Orthognathic Surgery

M.Guliyev,A.E.Demirbaş, C.Topan, G.Çoban, A.Alkan

Presentation type – oral presentation

Background: Cleft lip and palate are among the most common congenital craniofacial deformities. Orthognathic surgery, especially Le Fort I surgery, plays an important role in the treatment of these developmental disorders.

Aims and Objectives: In this study, bone healing after Le Fort I osteotomy was evaluated using fractal analysis in patients who underwent orthognathic surgery after cleft lip and palate repair.

Methods: The DICOM data of these patients who underwent Le Fort I osteotomy were transferred to ImageJ software, and the bone structure of the maxillary lateral walls and pterygomaxillary area was evaluated using fractal analysis based on the box counting method.

Results and Findings: The results show a decrease in fractal values in the T1 period and a partial recovery of these values in T2. However, the difference between the initial T0 and the 12th month T2 was not found to be statistically significant.

Conclusions: The results showed that high-quality bone formed 12 months after Le Fort I surgery in patients with cleft lip and palate who underwent orthognathic surgery, and that fractal analysis could be an effective tool for objectively evaluating bone healing.

[CLP]

Modern Surgical Approaches to Congenital and Secondary Palatal Defects

Hayal Ashuraliyev

Presentation type – symposium

Objective: The aim of this presentation is to analyze contemporary surgical techniques used in the management of congenital cleft palate and secondary palatal defects, highlighting their advantages, limitations, and clinical outcomes.

Materials and Methods: Clinical data from recent surgical cases involving cleft palate repair were reviewed. The efficacy of various reconstructive methods — including Von Langenbeck, Furlow, and Bardach techniques — was compared. Postoperative outcomes such as speech quality, feeding ability, and aesthetic results were evaluated to assess overall treatment success.

Results: The implementation of modern microsurgical and tissue-engineering techniques has significantly improved the correction of secondary palatal defects. Postoperative complications were reduced, and both speech and functional recovery outcomes demonstrated marked improvement.

Conclusion: Personalized surgical planning combined with modern reconstructive technologies enhances patient quality of life and decreases the need for secondary interventions. Future integration of biomaterials and 3D reconstruction methods holds great promise for advancing the management of palatal anomalies.

[CLP]

Surgical Treatment of Cleft Lip and Palate in Children

H.B. Mammadov, PhD in Medical Sciences A.A. Yusubov

Azerbaijan Medical University, Training and Surgical Clinic, Department of Oral and Maxillofacial Surgery, Baku, Azerbaijan

Presentation type – oral presentation

Introduction: One of the most common maxillofacial defects in children is congenital cleft lip and palate. It ranks second after congenital clubfoot among developmental deformities. Belonging to the more severe types of anatomical and functional disorders, this pathology occupies the 4th–

7th positions among all congenital anomalies. The defect is associated not only with obvious aesthetic impairments but also with disturbances in breathing, sucking, and swallowing functions.

Aim of the Study: The aim of the study is to determine the most optimal timing for surgical intervention in cleft lip and palate, both from aesthetic and functional perspectives.

Materials and Methods: The research was conducted on 14 patients who underwent surgical treatment at the Department of Oral and Maxillofacial Surgery, Training and Surgical Clinic of Azerbaijan Medical University during 2024–2025. We developed and applied the following approaches for the surgical treatment of congenital cleft lip and palate:

- In children with unilateral cleft lip, primary cheilorhinoplasty is performed at 3 months of age after preoperative preparation.

- In children with bilateral cleft lip, primary cheilorhinoplasty is performed at 4–5 months, staphyloplasty at 7–8 months, and uranostaphyloplasty at 1 year 3 months.

Results: At present, there is a wide range of approaches regarding the selection of the most optimal time and method of treatment for children born with congenital cleft lip and palate. Treatment usually begins immediately after birth and continues for many years. Unfortunately, the desired results are not always achieved. The main reason for delayed surgical intervention is the potential development of secondary anatomical and functional disorders. On the other hand, late intervention may lead to more severe deformities of the facial skeleton observed at birth.

Conclusion: Full social adaptation of children born with congenital cleft lip and palate is possible only if surgical treatment is carried out at sufficiently early ages. In our opinion, this approach provides the most optimal aesthetic and functional outcomes.

[CLP]

Surgical Treatment of Oronasal Fistulas Following Uranostaphyloplasty

Ramazanov E.V. A.A. Yusubov

Department of Oral and Maxillofacial Surgery, ATU -TCK

Presentation type – oral presentation

Introduction: Among congenital anomalies, cleft lip and palate are the most common, accounting for 30–35% [5]. The medical, social, and psychological rehabilitation of children born with this defect remains a serious problem worldwide, including in developed European countries and the United States. Effective resolution of this issue depends on the consistent and long-term implementation of comprehensive medical and social measures.

Aim: To determine the most optimal timing of surgical intervention for cleft lip and palate, both from an aesthetic and functional perspective.

Materials and Methods: The study was conducted on 46 patients who underwent surgical treatment at the Department of Oral and Maxillofacial Surgery, Educational Surgical Clinic of

Azerbaijan Medical University, during the years 2020–2025. Based on our experience, specific surgical approaches for congenital cleft lip and palate were developed and applied. In infants with unilateral cleft lip, following preoperative preparation, primary cheilorrhinoplasty was performed at the age of 3 months. In cases of bilateral cleft lip, primary cheilorrhinoplasty was carried out at 4–5 months of age, followed by staphyloplasty at 7–8 months. Finally, uranostaphyloplasty was performed at the age of 1 year and 3 months.

Results: The analysis of the medical and social aspects of this problem indicates that considerable progress has already been achieved in the field. However, despite these advancements, there is still a substantial need to further improve the surgical, orthodontic, and speech therapy approaches for the management of congenital cleft lip and palate, as well as to develop novel surgical and orthodontic techniques. The regular implementation of comprehensive rehabilitation measures in children born with this defect contributes to favorable anatomic-functional outcomes and ensures their ability to integrate into family and society as fully adapted individuals.

Conclusion: The full social adaptation of children born with congenital cleft lip and palate is achievable only when surgical treatment is performed at sufficiently early ages. In our view, this approach offers the best opportunity to obtain optimal aesthetic and functional results.

[CLP]

Distraction Osteogenesis in Oral & Maxillofacial Surgery

Hamid-Reza Sarajian

Presentation type – plenary session

The principle of distraction of the extremities was developed by Ilizarov between 1950–1985. In the late 1980s miniaturized distractors were produced for hand surgery. McCarthy performed the first transbuccally fixed distraction of mandible. Wangarir performed the first enoral mandibular distraction in the mid-1990s. Enoral distraction methods are invisible and do not restrict the quality of the life. Since this time were developed a variety of distractors for use in maxillofacial surgery.

The use of a distractor is not always necessary. Conventional osteotomies are for the most of the cases sufficient but they have anatomical and physiological limits. Distraction is advised when the advantages of distraction are bigger than the conventional osteotomy.

Distraction osteogenesis is a technically sensitive and powerful tool with considerable complication rates.

[CLP]

Correlation in-between cranial base orbital morphology in patients with craniofacial abnormalities.

Presentation type – oral presentation

Introduction. Early ossification of cranial sutures could lead to different types of craniofacial abnormalities, such as syndromic craniosynostoses. Their management requires multidisciplinary team of maxillofacial and plastic surgeons, and ophthalmologists. Specific interest shows management of the patients with Cruzon syndrome who shows maldevelopment of upper and middle zones of the face, associating to decreasing of the orbital depth (Od), resulting in exophthalmos. The gold standard of their surgical treatment is four-wall osteotomy of the orbits, osteotomy of frontal, zygoma and maxillary bone and its single unit advancement (monobloc) by distractor devices. Achievement of necessary functional and esthetic outcomes requires adequate preoperative planning. The aim of the current study was to determine correlation between cephalometric indexes of the orbits and dentoalveolar system in patients with Cruzon syndrome.

Materials and methods. Current study was performed in department of oral and maxillofacial surgery, Azerbaijan Medical University in period of 2015-2022. Control group included CT scan data of 60 healthy, while main 10 of Cruzon patients who underwent virtual surgeries. Cephalometry and virtual surgery were done by Materialise Mimics, while statistics by MedCalc 20.104 software.

Results. In healthy average: Od 39,73 mm, SNA 82,22, SN 69,08. In Cruzon patients preoperatively average: Od 29,14, SNA 66,86, SN 56,09 and postoperatively: 37,49, 70,48 and 65,67 respectively. In healthy: Od to SNA ratio = 0,48 and Od to SN ratio = 0,66. In Cruzon patients preoperatively Od to SNA ratio = 0,439 and Od to SN ratio = 0,51, postoperatively 0,53 and 0,57 respectively.

Conclusions. The relationship in-between morphological indexes of orbits, dentoalveolar system and anterior cranial base was detected, that determines necessary monobloc advancement distance in reconstructive surgery of Cruzon patients.

Digital Technologies in OMFS

[DT]

[DT]

3D Reconstruction of Atrophic Jaws using CAD/CAM Technology – From Planning to Execution

Ori Blanc

Presentation type – symposium

Background: Aging, maxillofacial trauma, periodontal disease, cysts, lesions and ablative surgery can result in decreased alveolar bone volume. In the maxilla, limited bone quantity and quality, especially in the posterior region results in low success rates for dental implants. In the mandible, inferior alveolar nerve position complicates the possibility of reconstruction using dental implants. Various methods for bone augmentation have been described such as conventional techniques utilizing autografts and allografts. Lately the use of CAD/CAM technology is rising among different professions including maxillofacial surgery. In-house planning is becoming more abundant and has its advantages. **Methods:** Different methods utilizing CAD/CAM technology will be presented. These include 3D planning of reconstruction and guided surgical aids for accurate placement of bone grafts combined with patient specific implants as well as conventional, pterygoid and zygomatic implants. **Results:** Effectiveness of bone augmentation in different methods will be presented. 95% of Implants have undergone proper osseointegration. Soft tissue healed properly with normal probing pocket depth. All integrated implants were prosthetically restored successfully. **Conclusions:** Patient specific treatment results in superior results. Bone grafts allow for reconstruction of the contour, support soft tissue and allow for placing conventional dental implants for restoration of function. Zygomatic implants allow for immediate loading in cases of severely atrophic maxilla. In the extramaxillary approach the emergence of the implant head is more prosthetically correct in comparison to the intrasinus approach, thus leading to better dental hygiene and decreased mechanical resistance.

[DT]

Reconstruction of the craniofacial complex using patient specific tailored treatments

Dekel Shilo

Presentation type – symposium

Objectives: Demonstrate the sequence for treating mistreated or untreated cases using in-house planning and printing of surgical guides (SG) and patient specific implants (PSI), including new approaches for superior results

Materials and Methods: Segmentation was performed using the D2P software. SG and PSI planning were performed using the Geomagic-Freeform. Following the stereolithography file production the clinician could create his own SG and PSI. SG can be created for refracturing, reduction or repositioning. Screw hole preparation in SG allows for proper PSI positioning or for bone graft harvesting and recontouring. A new method for 3D analysis is demonstrated.

Results: Thirty cases were performed using this method. Newly developed surgical guides for different purposes are presented. All patient specific implants fitted well. Intra -oral approach and Robust implants show a higher tendency for complications.

Conclusion: The method is described as well as a unique advanced 3D analysis, allowing for objectively assessing the results. Planned and final positions were compared and showed

exceptional accuracy allowing for the elimination of human errors which are common in 3D sensitive procedures. This method can easily be applied to different secondary reconstruction procedures requiring realignment.

[DT]

Regeneration of critical size defects using biodegradable scaffolds

Dekel Shilo

Presentation type – symposium

Objectives: Creating bone de novo is probably the biggest aspiration of the Maxillofacial surgeon. This study aimed at establishing a new bioprinted scaffold allowing for creation of bone in critical size defects.

Materials and Methods: A composite of biodegradable materials was established, incorporating a polymer for initial integrity of the scaffold. Next, we incorporated particles of materials which promote proliferation and differentiation of mesenchymal stem cells (MSC). In addition, a novel method for slow release of osteogenic proteins was established and studied. Following in-vitro studies to confirm the potency of the scaffold, an in-vivo model in rabbits was used for regeneration of critical size bony defects in the mandible.

Results: A method for mixing the materials was established followed by histological and quantitative microbiological methods exhibiting the proliferation and differentiation of MSC's in - vitro. 18 rabbits were operated on and divided into three different experimental groups, each receiving a scaffold with or without the slow release of osteogenic proteins in two different concentrations. In-vitro studies showed potential in all experimental groups for both proliferation of MSC's and for differentiation into osteoblasts. In-vivo results showed great potential for creating de novo bone in critical size defects.

Conclusions: The novel scaffold presented here shows great potential for patient specific bone regeneration in critical size defects. Studies need to be performed for better control over the rate of degradation, allowing for faster regeneration with homogenic bone formation. Potential Applications are numerous in fields such as orthopedics, neurosurgery, maxillofacial and dentoalveolar surgery.

[DT]

Digital vs. Conventional Technologies in Implant Prosthodontics: Enhancing Accuracy, Comfort, and Clinical Outcomes

Elchin Abbasov

Presentation type – symposium

In implantology, accurate impression taking and prosthetic procedures are crucial for the success and longevity of dental implants. Traditional conventional methods involve physical impressions using materials like silicone or polyether, which are then used to create stone models for prosthetic fabrication. While widely practiced, these methods can be uncomfortable for patients and are susceptible to errors such as material distortion or inaccuracies during cast production, which may affect the fit and function of the final prosthesis.

Digital methods, on the other hand, utilize intraoral scanners to capture precise digital impressions, eliminating the need for physical materials. These digital impressions offer several advantages, including enhanced patient comfort, improved accuracy, and faster data transfer to dental laboratories. The digital workflow allows prosthetic components to be designed and fabricated with computer-aided design and manufacturing (CAD/CAM) technology, enabling better customization and fit.

Furthermore, digital impressions facilitate real-time adjustments and virtual articulation, improving prosthetic planning and reducing chair time. However, digital systems require significant investment in technology and operator training. Additionally, certain clinical situations may still necessitate conventional impression techniques due to anatomical or financial constraints.

In summary, digital impression techniques and CAD/CAM-based prosthetics are transforming implantology by improving precision and patient experience in the prosthetic phase. While conventional methods remain reliable and accessible, the shift toward digital workflows is becoming increasingly important for optimizing implant-supported restorations. The choice between digital and conventional approaches should consider clinical indications, patient preferences, and available resources.

TMJ disorders [TMJ]

[TMJ]

Diagnostic Aspects of Temporomandibular Joint Arthrosis

Ahmadov E.T., Guliyev A.H., Jafarov M.A., Aliguliyev V.G.

Azerbaijan Medical University, Department of Oral and Maxillofacial Surgery

Presentation type – symposium

Relevance. Among temporomandibular joint pathologies, arthrosis and arthrosis associated with internal derangements are the most frequently encountered conditions. Arthrosis is associated with considerable patient morbidity, leading to functional impairment and a significant reduction in quality of life. The inadequate assessment of organic changes, misinterpretation of clinical findings, and insufficient evaluation of intra-articular relationships contribute to significant diagnostic challenges. The aim of this study is to investigate the key diagnostic aspects relevant to the management of temporomandibular joint arthrosis.

Materials and Methods. The material of the study comprised 76 patients, the majority of whom were female. In all patients, following conventional clinical and laboratory examinations, indicators of the active inflammatory phase, pathological serological proteins, serum vitamin D levels, and calcium concentrations were determined.

The activity of polymorphonuclear elastase (PMNE), an informative marker of connective tissue structures, was dynamically assessed in peripheral blood. In addition, the bone-specific alkaline phosphatase (BAP) and β -CrossLaps (BCL) osteomarkers were investigated in patients both before and after treatment.

Among radiological methods, magnetic resonance imaging (MRI) and various programs of orthopantomography were applied.

In the course of complex treatment, consultations with an orthopedic dentist, orthodontist, rheumatologist, and endocrinologist were taken into account. Particular attention was given to the differentiation of four nosological forms of arthrosis and nine nosological forms of internal derangements.

Results. The diagnostic methods applied enabled accurate differential diagnosis, comprehensive elucidation of the final diagnosis, and the implementation of treatment that was both radical and pathogenetically justified. Appropriately administered therapy effectively prevented recurrences and resulted in significant improvement of clinical parameters.

Conclusion. In the diagnosis of arthrosis, all of these aspects should be rigorously considered, as they possess substantial clinical significance and form the foundation for the effectiveness of subsequent therapeutic interventions. Adequately implemented treatment facilitated the restoration of normal joint function and was associated with substantial improvement in the overall clinical status of patients.

[TMJ]

TMJ Reconstruction with TMJ Prostheses

Presentation type – plenary session

Sajjad Walji

Background: The number of Alloplastic temporomandibular joint replacement (TMJR) procedures is expected to increase 58 % by year 2030. Mercuri et al 2016; JOMS 2016 :74: 1531-8.

End-stage temporomandibular joint (TMJ) pathology often necessitates total joint replacement (TJR) when conservative treatments fail. This study evaluates the clinical outcomes of TMJ reconstruction using the Zimmer Biomet prosthesis, focusing on pain relief, functional recovery, complications, and quality of life (QoL).

Methods: A retrospective analysis was conducted on 30 patients who underwent TMJ reconstruction with a Zimmer Biomet prosthesis over a 10-year period. Pain levels were assessed using the Visual Analog Scale (VAS), with pre-operative scores averaging 8 and post-operative scores averaging 3. Maximum mouth opening (MMO) improved from a pre-operative range of 1–20 mm to an average of 35 mm postoperatively. Oral intake difficulty scores improved from 8 (severe difficulty) to 3 (mild difficulty). Maximum voluntary bite force (MVBF) was also evaluated. **Results:** Postoperatively, patients experienced significant pain reduction and improved oral function. However, MVBF remained lower than in healthy individuals, indicating some functional limitations. Complications occurred in four patients: two experienced mild facial nerve paresis (affecting the corner of the mouth and eyebrow elevation), and two developed synovial entrapment with pain symptoms. Despite these issues, overall patient satisfaction was high. According to the literature, QoL significantly improves after TMJ prosthesis reconstruction, with patients reporting enhanced ability to eat, speak, and engage in social activities, along with psychological benefits due to pain relief and improved jaw function.

Conclusion & Future Perspectives: Zimmer Biomet TMJ prostheses effectively reduce pain and restore function in patients with severe TMJ pathology. While mobility and masticatory function improve significantly, reduced bite force remains a limitation. Future advancements may focus on prosthesis design, material improvements, and regenerative approaches to enhance joint function and long-term outcomes. Further research is needed to optimize rehabilitation strategies and improve post-operative bite force recovery while maximizing QoL improvements.

[TMJ]

Custom vs stock total temporomandibular joint replacement prosthesis

Mustafa Sancar ATAÇ

Presentation type – plenary session

Currently accepted indications for total joint replacement systems are; severe degenerative joint disease, recurrent ankylosis, irreparable condyle fracture, avascular necrosis, neoplasia requiring extensive resection, congenital disorders, failure of previous autologous grafting procedures.

In TMJ replacement surgeries, studies have all shown successful outcomes of the Custom and Stock total prosthetic systems that are produced by milling Technologies more than 35 years. Besides dramatical advancement of digital and manufacturing via 3D printing Technologies are also having successful clinical outcomes for recent years.

In this presentation, the evaluation of custom and stock total TMJ replacement prosthesis from manufacturing line to clinical applications will be presented.

[TMJ]

Retrospective Evaluation of Complications Associated with Temporomandibular Joint Lavage

Salman Rahimov, Canay Yılmaz Asan, Ahmet Emin Demirbaş, Nükhet Küt

Presentation type – oral presentation

Background. Arthrocentesis and arthroscopy are minimally invasive techniques frequently used in managing intra-articular temporomandibular disorders. Although generally considered safe, they may lead to certain complications, as with any surgical procedure.

Aims and Objectives. This study aims to retrospectively assess complications related to temporomandibular joint (TMJ) lavage. Patient records from 2014 to 2025 at the Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Erciyes University, were reviewed.

Methods. Demographic data, clinical findings, and complications—including pain, extravasation, bleeding, and facial paralysis—were recorded and analyzed statistically. A total of 264 patients (250 female, 14 male) were included. Arthrocentesis was performed on

Results and Findings. 227 patients, and arthroscopy on 37. Of those undergoing arthrocentesis, 85 were treated under local anesthesia and 142 under general anesthesia. Pain during the procedure occurred in 51 patients treated with local anesthesia. Extravasation was noted

Conclusions. In 32 cases, facial paralysis in 5, bleeding in 24, and external auditory canal perforation in 2. TMJ arthrocentesis is a minimally invasive procedure that can be performed under local or general anesthesia. Pain and extravasation were the most common.

[TMJ]

Stromal vascular fraction for the treatment of temporomandibular joint internal derangement

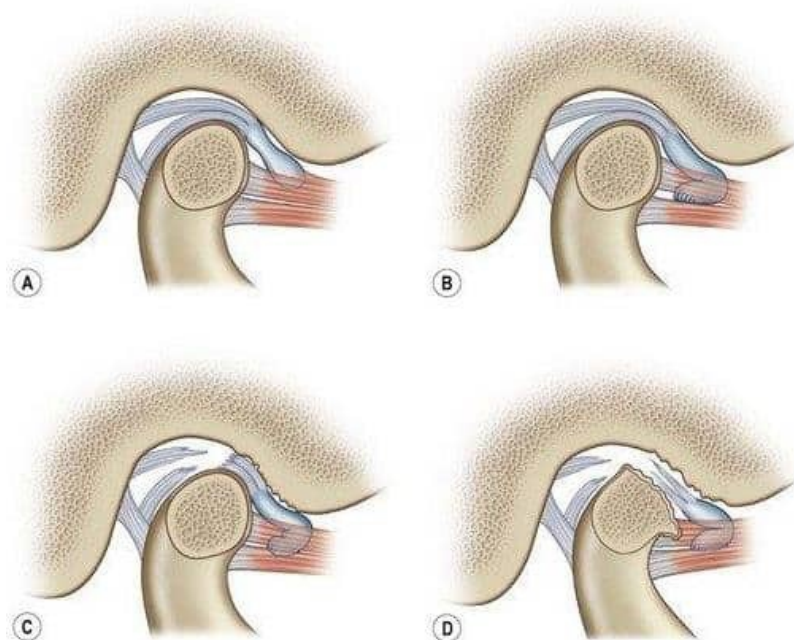
Z.B. Gonen, C.A. Kemaloglu, F. Cavdar Boyraz, H. Demir, S. Doğan

Presentation type – oral presentation

Temporomandibular joint (TMJ) internal derangement is a condition that markedly impairs quality of life.

The aim objective of this study was to evaluate the clinical efficacy of intra-articular injection of autologous stromal vascular fraction (SVF) in patients with TMJ internal derangement. A total of 10 patients who had not responded to at least three weeks of anti-inflammatory medication and

splint therapy were included in the study. Autologous stromal vascular fraction (SVF) was obtained abdominal fat using a minimal manipulation technique and injected into the superior joint compartment. Clinical evaluation parameters included the maximum mouth opening (MMO), lateral, protrusive movements, sounds and measurements of pain and comfort assessed using a Likert-type visual analogue scale (VAS) before treatment and 15th day, first month, 3rd and 6th months intervals. Statistics were computed using $P < .05$ was considered This approach demonstrated potential efficacy in alleviating pain enhancing mandibular function, and eliminating joint sounds ($p < 0.00$), while maintaining a favorable safety profile. The intra-articular administration of stromal vascular fraction (SVF) represents a promising minimally invasive therapeutic option.



OMF Trauma surgery [TS]

[TS]

The Evolution in correction of Posttraumatic Enophthalmos

Zoe Nicolaou

Presentation type – Plenary session

Management of post traumatic enophthalmos and diplopia resulting from orbital bone loss post significant challenges in reconstructive surgery. This presentation reviews the pertinent anatomy of the orbit, diagnostic modalities, indications for surgery and surgical approaches as they relate

to the treatment of posttraumatic enophthalmos. Particularly, evaluates the effectiveness of patient specific titanium implants (PSIs) for addressing these conditions. Successful repair of late posttraumatic enophthalmos is likely related to the precision with which orbital anatomy can be restored. Will be presented in details several patients who underwent late reconstruction via PSI for unilateral complex orbital bone loss. These implants were customized via 3D mirroring techniques on the basis of high-resolution 3Dimensional computed tomography, 3DCBCT scans of the patients' unaffected orbits. All patients presented with significant preoperative enophthalmos. Orbital volume notably improved post surgically. Functional improvements were evident as both enophthalmos and diplopia resolved. By ensuring anatomical accuracy, patient specific titanium implants tailored from patient specific imaging and fabricated via advanced 3D printing technology, provide a precise, effective and reliable solution for reconst ructing complex orbital defects and performing complicated revision surgeries

[TS]

Effects of photobiomodulation therapy on mandibular movements in the surgical treatment of mandible fractures

Luz JGC, Cruz CN, Serrano AS

Presentation type – Plenary session

Surgical treatment of mandibular fractures aims at patient rehabilitation and function. Complications such as limitations of mandibular movements can be observed during the postoperative period. This study aimed to evaluate the effects of photobiomodulation therapy (PBMT) on mandibular fractures after surgical treatment, with longitudinal observation of mandibular movements as the primary outcome.

In this randomized clinical trial, we compared the PBMT group (n=18) with a control group (n=15) with mandibular fractures who underwent surgical intervention. The sessions were performed 24 hours after the surgical procedure, and repeated weekly for 5 weeks after hospital discharge. Mouth opening, laterality sum, and maximal protrusion were measured in the same periods in both groups. The Statistical Package for the Social Sciences (SPSS) version 25.0 (IBM Software Group) was used for statistical analyses. The level of significance was set at $p \leq 0.050$.

There was a progressive increase in mandibular movements in both groups, but significantly higher values, particularly in mouth opening and protrusion, were observed in the PBMT group. Additionally, when considering the fracture location, a progressive increase in mouth opening occurred in most locations, while improvements in lateral movements were observed in condylar fractures. Additionally, significant improvements in mouth opening were observed in both intra-oral and extra-oral approaches.

The present study concluded that PBMT showed better mandibular movements recovery after surgical treatment, mainly in maximum opening movement, irrespective of the surgical access, with limited influence of the fracture location.

[TS]

Volumetric Changes Following Conservative and Surgical Treatment of Condylar Fractures

Francesco Lemma

Presentation type – Plenary session

Objective: To evaluate condylar anatomical changes after mandibular condyle fractures that influence joint function and occlusion, and to identify risk factors associated with remodeling.

Materials and Methods: A retrospective study was conducted on patients treated with open reduction and rigid fixation at the Maxillofacial Surgery Department of Venice-Mestre Hospital. Inclusion criteria: preoperative CT, postoperative CT within 30 days (t1), and follow-up CT after ≥ 12 months (t2). 3D models of the condyles were created using 3D Slicer and superimposed to assess changes in volume and height. Bone remodeling was compared between surgically and conservatively treated patients. Outcomes were correlated with the Helkimo Index, a VAS scale for occlusion, and patient-specific variables.

Results: Volumetric variation had no impact on occlusion. Conversely, condylar height loss >1 mm was associated with occlusal changes but not with functional impairment. Surgically treated patients showed greater morphological stability compared to conservative treatment. Artificial intelligence significantly reduced processing time during 3D model generation.

Conclusions: Condylar remodeling—especially height loss—can negatively impact occlusion, while greater volumetric changes affect joint function. Surgical treatment provides better control over remodeling than conservative management. Further studies with larger samples are needed to define clinically relevant thresholds.

[TS]

Management of Traumatic Dental Avulsion in a Pediatric Patient Following Electric Scooter Accident: A Clinical Case Report

Huseyn Huseyzadeh

Presentation type – symposium

With the increasing popularity of electric scooters, pediatric trauma cases related to their use have become more frequent. During the summer months, dental practitioners often encounter maxillofacial injuries caused by scooter accidents. Among these, dental luxations, crown and root fractures, and complete avulsions are the most prevalent. The key determinants of prognosis in such cases are the provision of immediate first aid, appropriate extra-oral storage of the avulsed tooth, and the correct choice of treatment at the clinic. These factors are crucial for ensuring the

long-term survival of the tooth, maintaining its function, and preventing unfavorable complications such as color change or root resorption.

This report presents the case of a 9-year-old child who sustained a maxillofacial trauma after falling from an electric scooter. The maxillary right central incisor (tooth 11) was completely avulsed, while luxation was observed in teeth 21, 22, and 12. The avulsed tooth was recovered from the grass approximately one hour after the accident, but the patient sought dental care only after 7–8 hours. Initial management included splinting and clinical observation. However, due to the intake of solid food, resorption was noted in the periodontal ligament and apical region. Under microscopic control, the apex was sealed with mineral trioxide aggregate (MTA), endodontic treatment was completed, and the splinting period was extended. This case highlights the importance of timely first aid and evidence-based clinical decision-making in the management of dental avulsion in children, particularly in the context of the rising incidence of scooter-related injuries.

[TS]

Reconstruction of the maxillofacial complex following gunshot wounds

Ori Blanc

Presentation type – symposium

Reconstructing the craniofacial complex following gunshot wounds is extremely challenging due to the unique anatomy, presence of vital structures and the immediate and accumulating effects of gunshot wounds. In craniofacial reconstruction, restoration of aesthetics and function is the primary goal. Auto-grafts are the gold standard for craniofacial skeletal reconstruction. Development of computer assisted design and computer assisted manufacturing systems allows for precise preoperative planning and designing of patient specific implants preoperatively for aiding in reconstruction. Methods: different cases of facial bone reconstruction following gunshot wounds are presented. Maxillary and mandibular deficiencies were reconstructed using 3D technology, bone grafts and dental implants. Results: Primary stability was achieved in the primary care stage using minimal fixation due to the devastating effects of gunshot wounds. Following tissue healing a secondary reconstruction was conducted using bone grafts and 3D technology for establishing proper occlusion relations, concomitant with restoration of continuity and contour of the jaws. Finally, pre-prosthetic procedures and dental implants were used to restore function and aesthetics. Conclusions: Individual computer-assisted design & computer assisted manufacturing systems for facial defects resulting from gunshot wounds in primary and secondary setups are effective in reconstruction and rehabilitation. Results are promising and exhibit excellent aesthetic and functional outcomes.

[TS]

Applications of Handheld Point-of-Care Ultrasound in the Craniomaxillofacial Trauma Setting

Andrei Krasovsky

Presentation type – symposium

Philips Lumify portable hand-held ultrasound (US) device is a point-of-care ultrasound (POCUS) solution that is readily available and useful in a variety of clinical situations. It helps clinicians evaluate a wide range of medical conditions and make fast, real-time decisions.

In the craniomaxillofacial (CMF) trauma field, POCUS can be very helpful in assessing zygomatic complex fractures, isolated fractures of the zygomatic arch, and fractures of the mandible. Lumify hand-held US is used during the initial clinical examination of suspected fractures in the CMF region, and it is readily available and helpful in various clinical situations. It allows the clinician to decide whether to proceed with a CT scan in the context of an equivocal clinical examination. Moreover, the applicability of portable US extends further to the operating room, enabling the surgeon to provide simultaneous and repeatable feedback on the accuracy of fracture reduction.

Using POCUS in the setting of CMF trauma was found to be an accurate tool for fracture detection in cases of zygomatic complex fractures (infra-orbital rim and frontozygomatic suture), isolated zygomatic arch fractures, and fractures of the symphysis, para-symphysis, and body of the mandible. Using POCUS in the operating room shortens the surgery time by immediately evaluating and confirming the alignment accuracy of the bony segments after the reduction and virtually heralding the end of the operation.

POCUS should be considered part of the armamentarium of the maxillofacial surgeon in the trauma care setting.

[TS]

Short- and long-term results of orbital floor fractures treatment.

Vugar Gurbanov

Presentation type – symposium

Isolated fractures of the orbital walls, or BOFs, may lead to functional disorders of the visual apparatus and aesthetic deformity. Debilitating double vision and facial disfiguring due to an altered position of the eye may affect patients' daily living skills and quality of life and they may find it difficult to perform important aspects of daily life, for instance, working or driving. The management of these fractures is often challenging, since not all fractures demand surgery, as some patients may have symptoms which subside or may never develop symptoms. Due to a lack of evidence there are still considerable differences in opinion regarding the criteria for

surgery. Selection for surgery depends on a thorough multidisciplinary clinical examination and an evaluation of the orbital damage on a computed tomography (CT) scan. Objective imaging parameters combined with a valid clinical examination are essential for surgical decision-making and the selection of patients for surgery is crucial. Knowledge relating to the causes of double vision and enophthalmos is essential to improve patient outcomes. The physical forces resulting in a blowout fracture of the orbit produce soft-tissue damage in addition to the bony fractures. An intraorbital edema may lead to detectable changes in orbital morphometrics. When measuring the human orbit, most studies rely on the similarity of the contralateral orbit for comparison. However, the orbits may not be symmetrical with regards to all morphometrics. In our article, we shared the near-term and long-term follow-ups of patients with blow-out fractures we treated between 2017 and 2025. When we compared the complications encountered in our patients with the literature, we observed similar results. It has been observed that patient age, the materials used, and surgical experience are important criteria in the treatment of blow-out cases.

[TS]

Management of Mandibular Condylar Process Fractures in Children and Adolescents

Zygmunt Stopa

Department for Cranio-Maxillofacial Surgery, Medical University of Warsaw, Poland

Presentation type – Plenary session

Introduction: Fractures of the mandibular condylar process are among the most common injuries of the mandible in the pediatric population. Due to the unique anatomy and continuous growth of the mandible in children and adolescents, management of these fractures requires special consideration. The main goal of treatment is to restore function, maintain symmetry, and prevent growth disturbances or temporomandibular joint (TMJ) dysfunction. The choice between conservative and surgical treatment depends on the fracture location, degree of displacement, and the stage of skeletal development.

Conservative Treatment

Conservative management is preferred in cases of nondisplaced or minimally displaced fractures, particularly in younger patients with high bone remodeling capacity. It consists of functional therapy with early mobilization, a soft diet, and physiotherapy aimed at maintaining mandibular movement and preventing joint ankylosis. In selected cases, a functional removable orthodontic appliance is used as part of conservative therapy. Such an appliance helps to guide mandibular movement, maintain correct occlusal relationships, and stimulate symmetrical mandibular growth during the healing period. It also assists in functional rehabilitation by encouraging controlled movement of the condyle within the glenoid fossa, promoting proper remodeling and preventing secondary deformities. Regular clinical and radiographic follow-up is essential to monitor bone healing, mandibular growth, and occlusal development. In many cases, conservative treatment allows for full restoration of function without the need for surgical intervention.

Surgical Treatment

Surgical management is indicated in cases of significant displacement, loss of vertical ramus height, or functional impairment. The choice of surgical approach depends on the level of the fracture. For subcondylar and condylar neck fractures, an intraoral approach assisted by endoscopy is employed. This minimally invasive technique reduces surgical trauma and eliminates visible scarring while ensuring adequate visualization and precise reduction.

For fractures of the mandibular head, a preauricular approach is used, providing direct access to the joint area and allowing accurate anatomical repositioning of fragments. Early postoperative physiotherapy is essential to regain full mandibular motion and prevent stiffness.

Conclusion: Proper management of condylar process fractures in children and adolescents requires an individualized approach that considers both functional and developmental aspects. Conservative treatment — including functional therapy and, when indicated, the use of a removable orthodontic appliance — remains the first-line option in most cases. Endoscopy-assisted intraoral or preauricular surgical techniques provide effective and esthetic solutions for more complex fractures. Long-term follow-up is crucial to ensure proper mandibular growth, joint function, and facial symmetry.

