SPLINT CAD-CAM CUSTOM MADE IN MAXILLARY VOLUMETRIC ORTHOGNATHIC SURGERY

Calò F[1], Lagioia R[1], Rizzo A[1], Inchingolo AM[1], Di Venere D[1], Laforgia A[1], Corsalini M[1], Inchingolo AD[1], Marinelli G[1], Dipalma G[1], Inchingolo F[1], Palermo A[2]

[1]Complex Operative Unit of Odontostomatology (Director: Prof. G. Favia), Specialization School in Orthognatodontics (Director: Prof. F. Inchingolo), Interdisciplinary Department of Medicine D.I.M. University of Bari Aldo Moro, Bari, Italy
[2]Department of Experimental Medicine, University of Salento, Lecce, Italy

Aim: Orthognathic Surgery (OGS) has progressed significantly with technological advancements, such as 3D digital imaging and CAD/CAM technology. These innovations allow for personalized surgery by creating custom surgical splints, improving precision, and reducing invasiveness. At the University Maxillofacial Surgery department, CAD/CAM technology and Piezosurgery® are used to optimize surgery planning and perform targeted osteotomies with less impact on soft tissues. This study aimed to assess the use of CAD/CAM Custom Made technology in treating maxillofacial dysmorphia.

Methods: the study included 24 patients, with 10 (7 females, 3 males, aged 21-28) receiving orthognathic treatment using CAD/CAM for custom surgical splints. Patients underwent orthodontic preparation with clinical exams, digital analysis, cephalometry, and Cone Beam imaging. Dental arch models were scanned to design surgical splints for accurate bone repositioning. Post-surgery, patients received orthodontic treatment for stabilization, with clinical and radiographic follow-ups.

Results and conclusions: innovations in OGS, especially digital imaging and CAD/CAM, improve precision, reduce surgical time, and enhance stability. Piezo surgery offers minimally invasive osteotomies, and custom-made CAD/CAM splints increase surgical accuracy. Results from 10 patients showed a 10% reduction in surgery time and improved maxillary stability. Larger studies are needed to confirm these findings.

STURGE WEBER SYNDROME, PATIENT WITH SEVERE PHENOTYPE AND ITS CLINICAL MANAGEMENT: CLINICAL CASE

Ciccarese D[1], Lauria P[1], Inchingolo AM[1], Di Venere D[1], Laforgia A[1], Corsalini M[1], Inchingolo AD[1], Marinelli G[1], Dipalma G[1], Inchingolo F[1], Palermo A[2]

[1]Complex Operative Unit of Odontostomatology (Director: Prof. G. Favia), Specialization School in Orthognatodontics (Director: Prof. F. Inchingolo), Interdisciplinary Department of Medicine D.I.M. University of Bari Aldo Moro, Bari, Italy
[2]Department of Experimental Medicine, University of Salento, Lecce, Italy

Aim: Sturge-Weber Syndrome (SWS), which causes neuroectodermal abnormalities, affects 3% of the population. It is the result of a mosaic mutation in the GNAQ gene, which is responsible for the regulation of intracellular signals. The presence of the “Nevus flammeus” and pink angiomas that follow the trigeminal nerve, often on the forehead and eyelid. Angiomas may also affect the soft tissues, maxillary areas, mandibles, trunk and limbs. Oral lesions, which are often ipsilateral to the skin lesions, mainly affect the lips and cheeks. Angiomas and gingival hyperplasia aggravate the phenomenon of self-biting, making chewing more difficult.

The clinical manifestations, evolutions and therapy in the oro-facial districts of a patient with SWS with severe are the subject of this case study.

Methods: patient, 25 years old, affected by hemiplegia, hemiparesis, glaucoma, severe mental deficit and with nodular-appearing angiomas all over the face, blind in the right eye. EEC showed deficits especially on the right. MRI with contrast showed bilateral cerebral atrophy, leptomeningeal angiomatosis, enlargement of the choroid plexus. The patient had severe and diffuse gingival hyperplasia as well as angiomas on the gingival, labial, lingual and buccal mucosa that did not allow him to feed. It was decided to operate the patient under general anesthesia and infiltration of the surgical site with 2% adrenaline. For surgical resection, the Nd-Yag laser with 400 micron fiber, frequency at 40 Hertz, energy 130 mJ, power 4W was used. Hemostasis was checked with ac. Tranexamic and using laser at frequency of 200 Hz, energy at 20 mJ, power 4W.

Results and conclusions: the use of Nd-Yag in surgical resection has made possible a reduced surgical timing, a bloodless operating field, a reduced recurrence rate, better compliance, reduced healing time with better quality.

Doi: 10.19256/abstract.cduo.01.2025

GUIDED SURGERY IN PEDIATRIC AMELOBLASTOMA: A MINIMALLY INVASIVE APPROACH

Pavan E[1], Erlicher L[1], Damilano M[1], Bosotti LG[1], Negri G[2], Gallo F[3], Borgonovo AE[1]

[1]Department of Aesthetic Dentistry, University of Milan, Istituto Stomatologico Italiano, Milan, Italy
[2]Dental technician, private practitioner, Milan, Italy
[3]Medical Director, Maxillofacial Department, Istituto Stomatologico Italiano, Milan, Italy

Aim: ameloblastoma is a rare odontogenic tumor that can affect pediatric patients. This study aims to describe the surgical management of a complex case in a young patient, emphasizing the importance of preoperative planning and guided surgery to ensure a minimally invasive approach and reduce intraoperative risks.

Methods: a pediatric patient presented with an ameloblastoma in the retromolar trigone of the third quadrant, related to tooth 3.8. A customized surgical guide, mounting on teeth 3.4 and 3.5, was preoperatively designed. The procedure included an intrasulcular incision from tooth 3.7 distally, soft tissue skeletonization, and precise positioning and stabilization of the guide. A minimally invasive ostectomy was performed using piezoelectric surgery to preserve critical anatomical structures. Simultaneously teeth 3.7 and 3.8, contiguous to the lesion, were extracted, followed by meticulous site debridement.

Results: the use of a preoperative surgical guide allowed for a controlled and precise bone resection, minimizing invasiveness and preserving vital structures. The piezoelectric technique ensured enhanced surgical accuracy and reduced the risk of complications. Postoperative healing was uneventful, with no signs of recurrence at follow-up.

Conclusions: preoperative digital planning and guided surgery play a crucial role in the management of pediatric ameloblastoma, enabling a safer and less invasive approach. The integration of piezoelectric surgery contributes to preserving noble structures while ensuring effective lesion removal. This case underscores the importance of advanced surgical techniques to optimize patient outcomes in complex pediatric cases.

ER:YAG LASER SURGERY, ND:YAG LASER PHOTOBIOMODULATION AND CROSS-LINKED HYALURONIC ACID: AN INNOVATIVE COMBINED APPROACH FOR THE TREATMENT OF MEDICATION-RELATED OSTEONECROSIS OF THE JAWS (MRONJ)

Albertini V[1], Iaria R[1,2], Venuti A[1], Pontiroli A[1], De Francesco P[1,2], Giovannacci I[1], Meleti M[1], Vescovi P[1]

[1]Oral Medicine and Oral Surgery Laser Unit, University Center of Dentistry, School of Specialty in Oral Surgery, Department of Medicine and Surgery, University of Parma, Parma, Italy
[2]PhD Program in Molecular Medicine (XL Cycle), University of Parma, Parma, Italy

Aim: Medication-Related OsteoNecrosis of the Jaws (MRONJ) is a drug-related complication observed in patients undergoing antiresorptive or antiangiogenic therapy. The treatment remains debated, with no consensus on a specific protocol.

The objective of this paper is to describe and verify the efficiency of an innovative approach combining laser therapy – Er:YAG for bone ablation and Nd:YAG for photobiomodulation – and cross-linked Hyaluronic Acid (xHyA).

Methods: a 72 years-old patient, with a medical history of prostate adenocarcinoma and bone secondaries under Denosumab treatment, affected by MRONJ of the left jaw.

Initially, antibiotic therapy with Amoxicillin and Metronidazole was prescribed for three weeks.

Afterwards, the treatment involved traditional surgical osteotomy and vaporization of necrotic bone using Er:YAG Laser.

Additionally, an xHyA gel carried by syringe was applied at the surgical wound. The advantage of xHyA lies in its bacteriostatic and anti-inflammatory effect as well as in its many properties such as promotion of clot stabilization, osteogenesis, angiogenesis.

Lastly, Low-Level Laser Therapy (LLLT) was administered using Nd:YAG Laser.

Results: the patient reported no postoperative discomfort. Furthermore, at the 3-month follow-up, successful healing was observed.

Conclusions: according to our results, the combined approach showed positive clinical outcomes.

The synergy between surgical and conservative treatment proved effective in managing MRONJ.

Laser therapy and xHyA enhanced the clinical and biological advantages of these different techniques.

MANAGING OF AN ADULT SKELETAL CLASS II DEEP BITE: THE ROLE OF ORTHODONTICS AND SURGERY

Fumei A, Stella G, Amin A, Astarita V, Tartaglia F, Ghaly H, Garagiola U

Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan Italy; Fondazione IRCCS Maxillo-Facial Surgery and Dental Unit, Ca' Granda Ospedale Maggiore Policlinico, Milan Italy

Aim: skeletal class II may often represent an overlooked diagnostic challenge for many orthodontists.
This case report aims to describe the necessity of a combined orthodontic and orthognathic surgical approach to a skeletal class II deep bite adult patient to achieve the best possible results.
Methods: the patient came to our attention expressing aesthetic as well as functional concerns and was later diagnosed as a skeletal class II deep bite. Orthodontic treatment alone, by restoring the considerably reduced anteroinferior vertical dimension to the appropriate height, would only worsen the existing condition. Thus, the combination of orthodontic treatment and orthognathic surgery was deemed the most suitable treatment alternative. Following pre-surgical orthodontics, sagittal split mandibular ramus osteotomy was performed to advance and post-rotate the mandible.
Results: the combined treatment approach led to the desirable results, both in terms of aesthetics and function. By revising the nasolabial and mentolabial angles a more suitable chin position was obtained, also resulting in the nasolabial folds minimized appearance. Function too appeared to be improved through masticatory muscles Electromyography (EMG) as well as on a clinical level.
Conclusions: in adult patients presenting severe dentofacial deformities, a combined orthodontic and orthognathic surgical approach must be considered, as it frequently turns out to be the most successful treatment option in both aesthetic and functional terms.

THE RESORBABLE DERMAL FILLER OF SADDLE NOSE DEFORMITY IN A SUBJECT AFFECTED BY WEGENER'S GRANULOMATOSIS: A CASE REPORT

Alla I, Guidone C, Ascani G, Lorusso F

Department of Innovative Technologies in Medicine and Dentistry, University G. d'Annunzio Chieti-Pescara, Chieti, Italy

Aim: this case report aims to describe the use of an absorbable dermal filler to correct saddle nose deformity in a patient affected by granulomatosis with polyangiitis (Wegener's granulomatosis), a rare autoimmune disorder that often leads to cartilage and bone resorption in the nasal region.
Methods: a 57-year-old patient with a 25-year history of Wegener's granulomatosis underwent hyaluronic acid filler injections (Skin-F 26) to restore nasal contour. The procedure involved local anesthesia and application of the Italian Technique, followed by injections into the columella and supratip areas. A second session was performed four months later. Nasal angles and projection were evaluated through standardized photographic analysis and Goode index.
Results: the patient showed significant aesthetic improvement without major complications. Only mild, transient redness and swelling were observed. The nasal structure and projection were maintained over multiple follow-ups, with repeat treatments every 6 months. No adverse effects were reported during an 18-month follow-up.
Conclusions: hyaluronic acid dermal filler appears to be a safe and effective non-surgical option for temporary correction of saddle nose deformity in patients with granulomatosis with polyangiitis, provided careful multidisciplinary evaluation and disease management.

ULTRASOUND-GUIDED LOW-DOSE HYALURONIDASE IN THE MANAGEMENT OF ACUTE VASCULAR COMPLICATIONS FROM HYALURONIC ACID FILLERS: A CASE SERIES

Calabria E[1], Giudice A[1], Urso SU[2]

[1]Department of Health Science, School of Dentistry, Magna Graecia University of Catanzaro, Catanzaro, Italy
[2]Private practice, Zola Predosa, BO, Italy

Aim: vascular complications from Hyaluronic Acid (HA) fillers may result in tissue necrosis and long-term aesthetic or functional consequences. Standard treatment involves high doses of hyaluronidase administered without imaging guidance, increasing the risk of local and systemic side effects. This study aimed to evaluate the safety and effectiveness of a low-dose, ultrasound-guided hyaluronidase protocol for managing acute vascular complications.

Methods: five female patients aged 26-38 presented with clinical signs of vascular compromise following recent facial HA filler treatments. Four were treated within 1-6 days, and one at 38 days post-injection. All cases underwent doppler ultrasound evaluation to localize the filler-induced vascular compression or occlusion. Hyaluronidase was injected under real-time ultrasound guidance in the area of HA accumulation, using the lowest effective dose. Follow-up included clinical examination and repeat ultrasound at 24 hours and 20 days.

Results: the four patients treated early achieved complete resolution of symptoms with a mean total hyaluronidase dose of 87±44 IU (range: 30-150 IU). The fifth patient, treated at a later stage, reported notable symptomatic improvement and regression of tissue damage with a single 30 IU injection. No adverse effects, neither local nor systemic, were observed in any of the cases.

Conclusion: the early diagnosis and targeted treatment of vascular complications using ultrasound guidance allows for the use of significantly lower doses of hyaluronidase than traditionally recommended. This protocol appears to be not only effective but also safe, with a reduced risk of drug-related side effects. The integration of ultrasound into routine management of filler complications may support a more precise and conservative therapeutic paradigm in aesthetic medicine.

IN SILICO EVALUATION OF MANDIBLE CUSTOMIZED DISTRACTION OSTEOGENESIS

Bizzoca ME[1], Di Cosola M[1], Musella G[1], Caponio VCA[1], Cantore S[2], Ballini A[1], Lo Muzio L[1]

[1]Department of Clinical and Experimental Medicine, University of Foggia, Foggia, Italy
[2]Department of Mechanics, Mathematics and Management, Polythecnic of Bari, Bari, Italy

Aim: Mandibular Symphyseal Osteogenetic Distraction (DOMS) is an orthopedic clinical procedure for the treatment of transverse mandibular deficiency in pediatric patients i.e. presenting hemifacial microsomia or mandibular micrognathia. The aim of the present research is the study of the in silico mandibular symphyseal displacement osteogenesis process, with the use of three different devices.

Methods: different loading conditions and different types of orthopedic distractor devices are considered. The structural response is studied by varying the distractor opening to compare the stability coefficient. The adopted computational model which includes geometric nonlinearity has been validated on the basis of experimental data reported in the literature.

Results: in this work, three different devices (tooth-borne, bone-borne, hybrid) were compared in DOMS. The tooth-borne distractor consists of two bands respectively applied to the first molar and the first premolar on both sides of the arch. The bone-borne device consists of a steel frame (1.1 mm in diameter) fixed to the basal bone region using screws. The expansion of the distractor is guaranteed by the opening of the screws. Finally, the hybrid device which consists of a steel frame whose segments are partly fixed to the basal bone and partly to the cusps.

Conclusions: it has been found that tooth-borne and hybrid devices allow clinicians to better control the actual movement transmitted to the jaw during the subsequent orthodontic therapeutic phase. The hybrid device is the most stable under the action of functional loads (chewing).

SURGICAL MANAGEMENT OF PEDIATRIC OBSTRUCTIVE SLEEP APNEA: EFFICACY, OUTCOMES AND ALTERNATIVES

Palumbo I[1], Guglielmo M[1], Riccaldo L[1], Inchingolo AM[1], Di Venere D[1], Laforgia A[1], Corsalini M[1], Inchingolo AD[1], Marinelli G[1], Dipalma G[1], Inchingolo F[1], Palermo A[2]

[1]Interdisciplinary Department of Medicine (D.I.M.), University of Bari Aldo Moro, Bari, Italy
[2]Department of Experimental Medicine, University of Salento, Lecce, Italy

Aim: Obstructive Sleep Apnea (OSA) is the most prevalent sleep-related breathing disorder. OSA affects approximately 2 million Italians, although only 3% receive a diagnosis and correct treatment. This review aims to provide an overview to guide clinical decision making, ensuring that patients receive the most appropriate treatment for their specific condition.

Methods: this systematic review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines and registered at PROSPERO under the ID CRD42024593760. A search on PubMed, Scopus, and Web of Science was performed to find papers that matched the topic, using the following Boolean keywords: ("obstructive sleep apnea" OR "OSA" OR "sleep apnea, obstructive") AND ("surgery" OR "surgical" OR "surgical techniques" OR "surgical treatment" OR "operative" OR "surgical procedures") AND ("treatment" OR "therapy" OR "management").

Result: the electronic database search found 20337 publications. After the screening and eligibility phase, 15 papers were chosen for the qualitative analysis.

Conclusions: Adenotonsillectomy (AT) significantly improves secondary outcomes like behavioral issues and quality of life, compared to Watchful Waiting With Supportive Care (WWSC). Alternative approaches such as tonsillotomy and Adenopharyngoplasty (APP) offer promising results, with less postoperative discomfort and lower complication rates. However, further large-scale studies are needed to refine surgical techniques, assess long-term outcomes, and optimize individualized treatment strategies for OSA.

DOES THE USE OF BUCCAL FAT PAD-DERIVED STEM CELLS DEMONSTRATE EFFICACY IN THE REGENERATION OF ORO-MAXILLOFACIAL BONE DEFECTS? A SYSTEMATIC REVIEW

De Francesco P[1,2], Vescovi P[1], Meleti M[1], Galli C[1], Sala R[1], Giovannacci I[1]

[1]Oral Medicine and Oral Surgery Laser Unit, University Center of Dentistry, School of Specialty in Oral Surgery, Department of Medicine and Surgery, University of Parma, Parma, Italy
[2]PhD Program in Molecular Medicine (XL Cycle), University of Parma, Parma, Italy

Aim: reconstructing bone defects in oral and maxillofacial surgery is challenging. Autografts, while common, have limitations. Tissue engineering, using mesenchymal stem cells, offers a promising alternative. Buccal Fat Pad-derived Stem Cells (BFPSCs) are advantageous due to easy harvesting and strong osteogenic potential. This review explores BFPSCs' properties and osteogenic capacity for maxillofacial bone regeneration, focusing on clinical evidence.

Materials: this systematic review, following PRISMA guidelines, analyzed in vivo studies (2015-2025) using human BFPSCs for maxillofacial bone regeneration. PubMed/MEDLINE, EMBASE, and Cochrane databases were searched using MeSH terms and keywords. Studies were included if they reported clinical, histological, or radiological assessments of bone regeneration.

Results: a total of 363 English articles published between 2015 and 2025 were initially identified. Following duplicate removal, 348 articles were screened by title and abstract, resulting in 8 articles for full-text review. Of these 8, 6 were included in the final analysis, with 2 excluded due to full-text unavailability.

Conclusions: BFPSCs show promise for maxillary bone regeneration due to easy harvesting and minimal invasiveness. However, larger, long-term randomized controlled trials are needed to validate these findings and standardize protocols for BFPSC use with scaffolds or other graft materials.

THE ROLE OF SENTINEL LYMPH NODE BIOPSY IN THE MANAGEMENT OF SQUAMOUS CELL CARCINOMA OF THE LOWER LIP: A SYSTEMATIC REVIEW

Setti G[1], Cinelli E[1], Marraffa D[1,2], Ruozzi M[1,2], Salgarelli AC[3], Consolo U[1], Bellini P[1]

[1]Dentistry and Oral Maxillo-facial Surgery, Surgical, Medical and Dental Department of Morphological Sciences, University of Modena and Reggio Emilia, Modena, Italy
[2]Oral Surgery Specialty School (MSClinDent), University of Modena and Reggio Emilia, Modena, Italy
[3]Maxillofacial Surgery Unit, Carlo Poma Hospital, Mantova, Italy

Aim: this systematic review investigates the significance of Sentinel Lymph Node Biopsy (SLNB) in managing early-stage Squamous Cell Carcinoma (SCC) of the lower lip, emphasizing diagnostic accuracy and clinical outcomes.
Methods: adhering to PRISMA guidelines, a comprehensive literature search was performed using PubMed and Scopus databases (2002-2024) focusing on the use of SLNB in patients with T1-T2 N0 lip cancer. Inclusion criteria included cohort studies, clinical trials, and case series, whereas reviews and articles not published in English or Italian were excluded. Eleven studies were ultimately selected following the screening of 1,207 records and quality appraisal utilizing the NHLBI assessment tool.
Results: analysis indicated that SLNB is a reliable diagnostic technique for detecting occult metastases in patients presenting with clinically node-negative lip cancer. The procedure exhibited favorable clinical outcomes, notably reduced morbidity and diagnostic accuracy comparable to more invasive methods. Most reviewed studies reported high sentinel node identification rates and consistently reliable staging results.
Conclusions: SLNB emerges as a valuable minimally invasive method for staging early-stage lower lip SCC, providing precise nodal evaluation and reducing unnecessary surgical morbidity. These findings advocate for its adoption in clinical practice, although further research is warranted to refine technical protocols.

COMPLICATIONS OF SEGMENTAL LEFORT I OSTEOTOMY IN THE UPPER JAW: LONG TERM RESULTS

Mottaran S, Signoriello A, Gualtieri M, D'Alba L, Faccioni P, Pardo A, Lombardo G, D'Agostino A

Dentistry and Maxillo-Facial Surgery Unit, Department of Surgery, Dentistry, Paediatrics and Gynaecology (DIPSCOMI), University of Verona, Verona, Italy

Aim: to evaluate long-term complications in the upper jaw following segmental LeFort I osteotomy.
Methods: this retrospective study included 52 patients who underwent multisegmented LeFort I osteotomy with vertical osteotomies between lateral and canine elements at Maxillofacial Department of University of Verona (Italy) between 2008 and 2015. At follow-up examinations the following parameters were measured: tooth discoloration, mobility, Probing Pocket Depth (PPD), Gingival Recession (GR), pain at palpation, percussion, Cold Test (CT), Electric Pulp Test (EPT) and External Root Resorption (ERR). Data collection and Statistical Analysis was done using Excel 365 and StataCorp programs.
Results: 52 patients (412 teeth) were evaluated with a mean follow-up period of 42 months. 0,93% required root canal therapy following surgery, 12,53% didn't respond to the CT and 1,53% of teeth were insensitive to both CT and the EPT. A statistically significant correlation was found between negative CT and lateral incisors element ($p = 0.02$). Only one PPD ≥ 5 mm was found. No dental elements showed mobility greater than grade 1. The presence of GRs in canine elements was statistically significant ($p = 0.02$). No vascular complications or necrosis of upper maxillary jaw, non-union of bone segments or oronasal fistulas were reported.
Conclusions: a proper pre-surgical orthodontic plan can help to minimize damage and piezoelectric surgery may reduce complications. Literature suggests a higher risk of pulp damage, especially near osteotomy lines, while in this study was observed a higher frequency of GR.

INFLUENCE OF ZAGA ANATOMY AND REHABILITATION TYPE ON THE ACCURACY OF DIGITALLY PLANNED ZYGOMATIC IMPLANT PLACEMENT: A RETROSPECTIVE STUDY

Finamore R[1], Cosentino V[1], Greco V[1], Madonna A[1], Parrotta S[1], Bianco E[1], Zingari F[2], Salviati M[1], Bennardo F[1], Barone S[1], Giudice A[1], Gallo F[3]

[1]Unit of Oral Surgery and Pathology, School of Dentistry, Magna Graecia University of Catanzaro, Catanzaro, Italy
[2]Ospedale Galeazzi-Sant'Ambrogio, Milan, Italy
[3]Istituto Stomatologico Italiano, Milan, Italy

Aim: this 3D analysis assessed the accuracy of Zygomatic Implant (ZI) placement using a static surgical guide in correlation with ZAGA classification and the rehabilitation type.
Methods: pre-surgical CT scans were used to create virtual surgical plane, exported as .stl files, and to define the ZAGA classification of each implant. A CT scan was taken 6 months post-surgery, and segmentation of the ZIs was performed. The 3D analysis on 3DSlicer software compared planned and placed ZIs, measuring linear and angular displacements at the apex and base of each model. Displacements were correlated with the ZAGA classification and the Type of Rehabilitation (ToR) (if quad, twin, or mono ZIs).
Results: the study included 45 patients and 150 zygomatic implants, all placed using bone-supported surgical guides with no bone modifications. The implant survival rate was 100% at 6 months. Most patients received quad rehabilitation with 4 implants, and there was strong overlap between planned and placed implants. The mean surface displacement was 0.43 mm on the right and 0.45 mm on the left. Deviations were minimal for both anterior and posterior implants, with slightly higher deviations for posterior implants. According to ZAGA classification, surface displacement increased from class 0 to 4. No significant differences were found among ToR ($p > 0.289$).
Conclusions: the study underscores the accuracy of fully guided surgery in zygomatic implant placement, suggesting its involvement in the decision-making process, revealing better accuracy in minor ZAGA classes, and no difference between ToR.

DEEP LEARNING THREE-DIMENSIONAL ANALYSIS OF MANDIBULAR CONDYLAR REMODELING AFTER SKELETAL CLASS III ORTHOGNATHIC SURGERY

Barone S[1], Cevidanes L[2], Salviati M[1], Greco V[1], Madonna A[1], Cosentino V[1], Finamore T[1], Bennardo F[1], Antonelli A[1], Giudice A[1]

[1]Department of Health Science, Magna Graecia University of Catanzaro, Catanzaro, Italy
[2]Department of Orthodontics and Pediatric Dentistry, University of Michigan, Ann Arbor, MI, USA

Aim: this retrospective study investigated morphometric changes in the mandibular condyles of skeletal Class III patients after two-jaw orthognathic surgery, using a deep learning-based 3D analysis and virtual surgical planning.
Methods: pre-operative (T1) and 12-18 months post-operative (T2) Cone-Beam Computed Tomography (CBCT) scans of 17 patients (mean age: 24.8 years; 34 condyles) were analysed using 3DSlicer software. Deep-learning algorithms used to automate CBCT orientation, condylar registration, bone segmentation, and landmark identification. Voxel-based superimposition and automated shape analysis identified remodeling patterns in the condyles, focusing on bone resorption and apposition across different surfaces (superior articular surface, lateral and medial poles). The correlation between these changes and the post-operative condylar movements was investigated. Statistical analysis was conducted with a significance level of $\alpha = 0.05$.
Results: overall remodeling was minimal (less than 1 mm), both for right and left condyles. Small but significant bone resorption was observed on the superior articular surface, while bone apposition on the lateral pole. These changes were significantly associated with medial condylar displacement ($p < 0.05$).
Conclusions: the automated 3D analysis identified specific patterns of condylar remodeling in Class III orthognathic patients, showing minimal overall changes but notable regional differences. These findings underscore the importance of meticulous preoperative planning to ensure optimal condylar positioning and post-operative stability.

RETROSPECTIVE COHORT STUDY EVALUATING LYMPH NODE RATIO AS A PROGNOSTIC MARKER IN LARYNGEAL SQUAMOUS CELL CARCINOMA

Musella G[1], Tisci A[1], Nocini R[2], Bertossi D[3], Bizzoca ME[1], Fanelli F[1], Sepodes B[4], Almeida V[4], Lo Muzio L[1], Caponio VCA[1,5]

[1]Department of Clinical and Experimental Medicine, University of Foggia, Foggia, Italy
[2]Unit of Otorhinolaryngology, Head & Neck Department, University of Verona, Verona, Italy
[3]Department of Maxillo Facial Surgery, Head & Neck Department, University of Verona, Verona, Italy
[4]Serviço de Anatomia Patológica dos Hospitais da Universidade de Coimbra, Coimbra, Portugal
[5]Department of Life Sciences, Health and Healthcare Professions, Link Campus University, Rome, Italy

Aim: to assess the prognostic significance of Lymph Node Ratio (LNR) in patients with Laryngeal Squamous Cell Carcinoma (LSCC) undergoing laryngectomy with neck dissection, and to evaluate its association with other pathological features.

Methods: a retrospective analysis was conducted on 60 LSCC patients treated between 2012 and 2024. LNR was calculated as the number of metastatic lymph nodes divided by the total number examined. Clinicopathological variables including extranodal extension and perineural invasion were analyzed. Survival outcomes were evaluated using Kaplan–Meier analysis and Cox regression models.

Results: the mean follow-up was 52.4 months. Higher LNR correlated with lymphovascular and perineural invasion, distant metastasis, and positive surgical margins. However, in multivariate analysis, LNR was not an independent predictor of overall survival (HR = 2.51, 95% CI: 0.65-9.9) or relapse-free survival (HR = 1.3, 95% CI: 0.22-4.68). No statistically significant survival benefit was observed when LNR was added to the prognostic model.

Conclusions: LNR did not independently predict survival outcomes in LSCC but showed strong associations with other aggressive pathological features. Future multicenter studies are needed to standardize LNR thresholds and clarify its prognostic role.

CONSERVATIVE TWO-STAGE SURGICAL THERAPY FOR UNICYSTIC AMELOBLASTOMA: CLINICAL, RADIOGRAPHIC, AND IMMUNOHISTOCHEMICAL OUTCOMES

Setti G[1], Caramaschi S[2,3], Sola A[1], Ruozzi M[1,4], Gozzoli M[2], Marraffa D[1,4], Consolo U[1], Bellini P[1]

[1]Dentistry and Oral Maxillo-facial Surgery, Surgical, Medical and Dental Department of Morphological Sciences, University of Modena and Reggio Emilia, Modena, Italy
[2]Pathology Unit, Department of Medical and Surgical Sciences for Children and Adults, University of Modena and Reggio Emilia, Modena, Italy
[3]Clinical and Experimental Medicine PhD Program, Department of Biomedical, Metabolic, and Neural Sciences, University of Modena and Reggio Emilia, Modena, Italy
[4]Oral Surgery Specialty School (MSClinDent), University of Modena and Reggio Emilia, Modena, Italy

Aim: the aim of this study was to evaluate the efficacy of conservative two-stage surgical therapy (marsupialization or decompression followed by enucleation) in three patients diagnosed with Unicystic Ameloblastoma (UA) through analysis of radiographic outcomes, histopathological findings, and immunohistochemical changes in the expression of BRAF and p53 markers.

Methods: patients diagnosed with UA at our institution between January 2018 and December 2023 were included. The conservative treatment protocol involved marsupialization or decompression followed by subsequent enucleation. Radiographic imaging, histological slides, and immunohistochemistry for BRAF and p53 markers were analyzed pre- and post-intervention.

Results: none of the patients experienced recurrence. Post-marsupialization radiographs demonstrated healing of previously resorbed bone cortices. Histologically, there was a marked reduction in the neoplastic epithelial component, limited to sparse residual epithelial islands embedded within a predominantly fibrous stroma. Immunohistochemical evaluation showed that, in two patients, BRAF expression increased at T2, whereas p53 expression decreased. In the third patient, BRAF expression remained negative at both time points, while p53 expression increased at T2.

Conclusions: conservative two-stage surgical treatment effectively reduced the neoplastic component of unicystic ameloblastoma and promoted bone healing. Changes in BRAF and p53 protein expression following marsupialization may correlate with clinical outcomes, suggesting potential roles as biomarkers for therapeutic monitoring.