ABSTRACT BOOK

International Conference of Periodontology and Implantology

ICPI 2026

Innovation and Clinical Excellence in Periodontology and Implant Dentistry

12–13 June 2026 | Tirana, Albania

Organised by:
Albanian Society of Periodontology and Implant Dentistry (ASPID)
Western Balkans University

Western Balkans University | Hotel Plaza Tirana

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WELCOME REMARKS

OPENING SPEECH OF THE CHAIR

Assoc. Prof. Dr. Brunilda Gashi Cenkoglu

Distinguished guests, esteemed professors, respected colleagues, dear students, and dear friends,
Today is a truly special day for me. It is with great pride, pleasure, and gratitude that I welcome you to the First International Conference of Periodontology and Implantology — ICPI 2026.
This conference is the result of an important collaboration between the Albanian Society of Periodontology and Implant Dentistry, which I have the honor of leading as President, and Western Balkans University, where I proudly serve as Dean of the Faculty of Dental Medicine.
This gathering represents much more than a scientific event. It is a significant milestone in the advancement of dental education, clinical excellence, and scientific research in Albania and beyond.
Today, we bring together leading clinicians, researchers, educators, and students from different countries, united by a common goal: to advance knowledge, share experience, and strengthen professional collaboration in the fields of periodontology and implant dentistry. Such exchanges are essential for the continued growth of our profession and for improving the quality of care we provide to our patients.
We are deeply honored to welcome distinguished professors and lecturers from Albania and abroad. Their presence elevates the scientific value of this conference and reflects the growing international recognition of our professional community.
In periodontology and implant dentistry, one of the most important challenges of our time is achieving the delicate balance between preserving natural dentition whenever possible and embracing the remarkable advances in implant therapy and regenerative technologies. Modern dentistry is no longer centered solely on replacing what has been lost; it is increasingly focused on prevention, preservation, regeneration, and personalized patient care.
Our vision is to address these challenges through collaboration, innovation, and evidence-based practice. By embracing minimally invasive techniques, patient-specific treatment protocols, interdisciplinary approaches, and digital technologies, we can achieve more predictable outcomes while preserving both function and aesthetics.
Through this conference, we aim not only to reflect on the remarkable progress of our profession, but also to build upon it and contribute to an even stronger future for periodontology and implant dentistry.
It is my great pleasure to extend a warm welcome to our distinguished international guests and honored speakers.
I would like to warmly welcome Professor Gil Alcoforado, President of the European Association for Osseointegration, whose leadership and contributions have had a profound impact on implant dentistry across Europe and beyond.
I am equally honored to welcome Professor Christof Pertl, an internationally respected academic and clinician, whose guidance and support have greatly influenced my academic path, professional development, and vision for international collaboration.
Throughout his distinguished academic career, he has contributed to prestigious institutions such as St Thomas' Hospital, King's College London, Harvard University, and the University of Pennsylvania, reflecting his outstanding contribution to oral surgery, implant dentistry, and academic education.
A special welcome also goes to Professor Hakan Özyuvacı, one of the most renowned oral and maxillofacial surgeons in Türkiye, whose guidance, dedication to education, and commitment to clinical excellence have been a great source of inspiration throughout my professional journey.
I would also like to express my sincere appreciation to Professor William Papaioannou, President of the Hellenic Society of Periodontology and Implant Dentistry, whose encouragement, professional guidance, and generous support have been instrumental in the establishment and development of our Society.
In addition, I extend my heartfelt gratitude to all our international and national lecturers who have accepted our invitation and contributed their expertise to this important scientific event. Their commitment to education and scientific exchange is what makes conferences such as this possible.

I would also like to take this opportunity to express our sincere appreciation to our institutional partners and supporters. Their trust and commitment have played a crucial role in making this conference a reality. I warmly thank our long-standing collaborators at Rodiopharma, our valued partners at Diamant Plus, our friends, mentors, and colleagues from the European Association for Osseointegration, as well as our partners at Dicon and Futura Dent. Their continuous support for education, research, and professional development is deeply appreciated.

Dear colleagues,

This conference is not merely a scientific meeting. It is the beginning of a new chapter — a long, ambitious, and hopefully highly fruitful journey for our Society, for the Faculty of Dental Medicine at Western Balkans University, and for our entire professional community.

Our goal is to create a platform that promotes scientific excellence, lifelong learning, international cooperation, and the highest standards of clinical practice. We believe that by bringing together experts from diverse backgrounds and experiences, we can inspire innovation, encourage critical thinking, and foster lasting professional relationships that will benefit future generations of dentists and specialists.

As we begin this conference, I encourage each of you to take full advantage of the opportunities it offers: to learn from world-renowned experts, to engage in meaningful discussions, to share your own experiences, and to build new collaborations that extend far beyond these conference halls.

I sincerely hope that these two days will be intellectually stimulating, professionally rewarding, and personally memorable for all of us.

Thank you for your presence, your support, and your commitment to advancing our profession!

I wish you an inspiring and successful conference!

Welcome to ICPI 2026!

Thank you!

Assoc. Prof. Dr. Brunilda Gashi Cenkoglu

Chair, ICPI 2026 | President, ASPID | Dean, Faculty of Dental Medicine, Western Balkans University

OPENING SPEECH OF THE CO-CHAIR

Assoc. Prof. Dr. Silvana Bara

Good morning distinguished guests, respected colleagues, honored speakers, dear students, ladies and gentlemen,

It is a great pleasure and a true honor to welcome you to the International Conference of Periodontology and Implantology — ICPI 2026.

On behalf of the Faculty of Dental Medicine at the University of Tirana, I would like to express my sincere appreciation to the Albanian Society of Periodontology and Implant Dentistry and Western Balkans University for organizing this important scientific event and for creating a platform that brings together distinguished professionals, researchers, clinicians, and academics from Albania and many other countries.

This conference represents an important moment for our professional community. Periodontology and implant dentistry continue to evolve rapidly through scientific research, technological innovation, and interdisciplinary collaboration. Events such as ICPI 2026 allow us not only to share knowledge and clinical experience, but also to strengthen cooperation between institutions, universities, and professional organizations dedicated to excellence in oral healthcare.

I am especially pleased to welcome our international and national speakers, whose expertise and contributions will undoubtedly enrich the scientific program of this conference. Your presence here reflects our shared commitment to advancing education, research, and patient-centered clinical practice.

I strongly believe that academic institutions have a responsibility to support scientific dialogue and continuous professional development. Our faculty remains committed to encouraging innovation, critical thinking, and high standards in dental education and clinical care.

Dear colleagues,

Medicine and dentistry today face new challenges and new expectations. Therefore, investing in education, research, and international collaboration is essential for building a healthier future and improving the quality of life for our patients.

I would like to congratulate the organizing committee for their dedication and excellent work in preparing this conference. I also thank all participants for joining us and contributing to the success of this important event.

I wish all of you productive sessions, inspiring discussions, valuable exchanges of ideas, and a memorable experience during ICPI 2026.

Assoc. Prof. Dr. Silvana Bara
Co-Chair, ICPI 2026 | Dean, Faculty of Dental Medicine, University of Medicine, Tirana

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- Dr. Jakup Vrioni
- MSc. Erta Xhanari

KEYNOTE SPEAKERS

Prof. Dr. Gil Alcoforado

Professor of Periodontology, Egas Moniz School of Health and Science, Lisbon, Portugal
Specialty: Periodontology & Implant Dentistry

Presentation: *Orthodontic Intervention in Periodontally Compromised Dentitions: Constraints and Long-Term Results*

Prof. Dr. Gil Alcoforado is a Professor of Periodontology at the Faculty of Dental Medicine, University of Lisbon. He served as Dean of the Faculty (2004–2010). He is President of the European Association for Osseointegration (EAO) and an active member of the European Federation of Periodontology, with over two decades as an invited speaker at international congresses.

Prof. Dr. Christof Pertl

Department of Prosthetic Dentistry, School of Dental Medicine, Karl-Franzens-University Graz, Austria

Specialty: Oral Surgery, Implantology & Endodontics

Presentation: *Dental Implants for the Very Old: Functional Stability and Clinical Success*

Prof. Pertl obtained his MD from the University of Graz (1987) and his DMD from the University of Vienna (1991). He has held academic positions at the University of Graz, University of Pennsylvania (adjunct faculty), and Harvard School of Dental Medicine (visiting associate professor), with postgraduate training at Columbia University and King's College London.

Prof. Dr. William Papaioannou

Professor of Periodontology, School of Dentistry, National and Kapodistrian University of Athens, Greece

Specialty: Periodontology & Peri-implant Diseases

Presentation: *Gingival and Periodontal Diseases and Conditions in Young Individuals: Evidence-Based Diagnosis and Management*

Prof. Dr. William Papaioannou is Professor of Periodontology at the School of Dentistry, National and Kapodistrian University of Athens. He is President of the Hellenic Society of Periodontology and Implant Dentistry, with extensive publications in periodontal microbiology and peri-implant diseases.

INVITED SPEAKERS

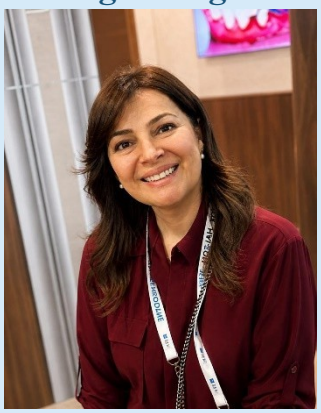
Dr. Nergiz Yılmaz

Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Izmir Katip Celebi University, Turkey
Specialty: Oral and Maxillofacial Surgery

Presentation: *Augmentation Techniques Applicable in Clinical Practice*

Dr. Nergiz Yılmaz is a specialist in Oral and Maxillofacial Surgery at Izmir Katip Celebi University, focusing on bone augmentation, guided bone regeneration, sinus augmentation, and implant placement in anatomically compromised sites.

Dr. Sivge Kurgan



Department of Periodontology, Faculty of Dentistry, Ankara University, Turkey
Specialty: Periodontology

Presentation: *Peri-Implant Soft Tissue Defects: Etiology, Classification, and Contemporary Management Strategies*

Dr. Sivge Kurgan is a Periodontologist at Ankara University, Faculty of Dentistry. Her research focuses on peri-implant soft tissue management, tissue augmentation procedures, and periodontal regeneration.

Dr. Toghrul Aliyev

Oral and Maxillofacial Department, Azerbaijan Medical University, Baku, Azerbaijan
Specialty: Oral and Maxillofacial Surgery

Presentation: *Anatomical Boundaries of the Mandible and Their Influence on Safe Dental Implant Placement*

Dr. Toghrul Aliyev is an Oral and Maxillofacial Surgeon at Azerbaijan Medical University, with expertise in CBCT-based three-dimensional planning and mandibular anatomy for safe implant surgery.

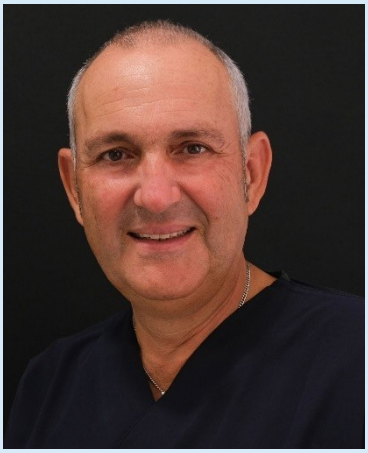
Dr. Francesco Riva

National Council for Economy and Labor (CNEL) – Health Department, Italy | Università Magna Graecia, Catanzaro
Specialty: Oral Surgery / Liquid Biopsy Research

Presentation: *Liquid Biopsy Application in Oral Tumor Early Detection*

Dr. Francesco Riva's research focuses on innovative diagnostic approaches for early oral cancer detection, with emphasis on liquid biopsy, salivary diagnostics, and circulating tumor biomarkers for oral squamous cell carcinoma screening.

Prof. Dr. Hakan Özyuvacı



Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Istanbul University, Turkey
Specialty: Oral and Maxillofacial Surgery

Presentation: *From Traditional to Innovative Techniques in Oral Implantology*

Prof. Dr. Hakan Özyuvacı is one of the most renowned Oral and Maxillofacial Surgeons in Türkiye at Istanbul University, with expertise spanning CAD/CAM digital workflows, immediate implant placement, AI-assisted planning, and CBCT-guided surgery.

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SUBMITTED ABSTRACTS

Total abstracts: 56 | Conference dates: 12–13 June 2026

1 ORTHODONTIC INTERVENTION IN PERIODONTALLY COMPROMISED DENTITIONS: CONSTRAINTS AND LONG-TERM RESULTS

Gil Alcoforado [1]

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Introduction

Management of periodontally compromised dentitions has evolved with increasing patient demand for functional and aesthetic rehabilitation. Interdisciplinary approaches combining periodontics, orthodontics, implantology, and prosthodontics allow preservation of teeth previously deemed hopeless. This study outlines key principles, constraints, and long-term outcomes of orthodontic intervention in such cases.

Materials and Methods

A narrative review and clinical synthesis were performed focusing on interdisciplinary treatment protocols. Emphasis was placed on sequencing periodontal therapy prior to orthodontic movement, biomechanical considerations in reduced periodontal support, management of pathological tooth migration, and integration of implants. Clinical decision-making criteria and aesthetic management of gingival architecture were analyzed.

Results

Successful outcomes depend on strict periodontal control before and during orthodontic treatment. Controlled tooth movement in reduced but healthy periodontium is feasible, enabling correction of migration and improvement in function and aesthetics. Orthodontic therapy contributes to space redistribution, facilitating prosthetic rehabilitation and implant placement. However, limitations include increased risk of attachment loss if inflammation persists, compromised anchorage, and aesthetic challenges such as gingival recession and black triangles. Long-term stability is achievable with adequate retention and maintenance.

Conclusion

Orthodontic treatment in periodontally compromised patients is predictable when integrated within a structured, multidisciplinary plan. Preservation of natural dentition should be prioritized over extraction when biologically feasible. Careful case selection, inflammation control, and coordinated specialist collaboration are critical for optimal long-term results.

Keywords: *Periodontally compromised dentition; orthodontic tooth movement; interdisciplinary treatment; pathologic tooth migration; gingival aesthetics.*

References

1. European Federation of Periodontology. S3 Level Clinical Practice Guideline for Stage I–III Periodontitis. Journal of Clinical Periodontology, 2021.
2. Journal of Clinical Periodontology. Papapanou PN et al. Periodontitis: Consensus Report. 2021.
3. Progress in Orthodontics. Roccuzzo M et al. Orthodontic treatment in periodontally compromised patients: systematic review. 2022.
4. Clinical Oral Implants Research. Tonetti MS et al. Implants in periodontitis patients: long-term outcomes. 2022.
5. Journal of Periodontology. Cortellini P & Tonetti M. Regenerative periodontal therapy and tooth preservation. 2023.

2 DENTAL IMPLANTS FOR THE VERY OLD: FUNCTIONAL STABILITY AND CLINICAL SUCCESS

Christof Pertl [1]

1 Department of Prosthetic Dentistry, School of Dental Medicine, Karl-Franzens-University Graz, Auenbruggerplatz 12, A-8036 Graz, Austria, (C.P), pertl@zahnmedizingraz.at

Introdution

With increasing life expectancy, the demand for stable and functional oral rehabilitation in elderly patients has grown significantly. This presentation explores the shift from conventional dentures to implant-supported solutions, with emphasis on improving functional stability and quality of life in the very old population.

Materials and Methods

A narrative review of current literature (2021 onward) was conducted using databases including PubMed and Scopus. The analysis focused on clinical outcomes of dental implants in elderly patients, particularly implant-retained overdentures, and considered systemic conditions such as osteoporosis, multimorbidity, and polypharmacy. Surgical and prosthetic modifications tailored to geriatric patients were also reviewed.

Results

Recent evidence supports dental implants as a predictable and successful treatment modality in elderly patients, with survival rates comparable to younger populations. Implant-retained overdentures significantly improve masticatory efficiency, nutritional status, and patient satisfaction. Simplified surgical protocols and prosthetic designs enhance treatment feasibility, particularly in patients with reduced manual dexterity. While systemic conditions may influence treatment planning, they are not absolute contraindications when properly managed.

Conclusions

Implant-supported rehabilitation represents a reliable and effective option for the very old. By balancing systemic risks with functional needs, clinicians can enhance oral function, independence, and overall quality of life through individualized, evidence-based treatment approaches.

Keywords: *Dental implants; Elderly patients; Overdentures; Geriatric dentistry; Functional rehabilitation*

References

1. Müller, F., et al. (2021). Oral health in the elderly: a global perspective. The Lancet Healthy Longevity, 2(6), e357–e367.
2. Srinivasan, M., et al. (2022). Implant-supported overdentures in geriatric patients: a systematic review. Journal of Prosthetic Dentistry, 127(4), 569–577.
3. Schimmel, M., et al. (2021). Dental implants in older adults: a systematic review and meta-analysis. Clinical Oral Implants Research, 32(S21), 143–157.
4. Patel, R., et al. (2023). The impact of implant-retained overdentures on quality of life in elderly patients. Gerodontology, 40(2), 145–152.
5. Koka, S., et al. (2022). Medical considerations for dental implants in elderly patients. Dental Clinics of North America, 66(2), 241–255.

3 GINGIVAL AND PERIODONTAL DISEASES AND CONDITIONS IN YOUNG INDIVIDUALS: EVIDENCE-BASED DIAGNOSIS AND MANAGEMENT

William Papaioannou [1]

[1] *National and Kapodistrian University of Athens, School of Dentistry, Department of Preventive and Community Dentistry, Athens, Greece; (W.P.), William.Papaioannou@dent.uoa.gr*

Introdution

Children and adolescents undergo dynamic biological and behavioral changes that directly influence periodontal health. Although often perceived as a low-risk population, young individuals may develop a spectrum of gingival and periodontal conditions ranging from reversible inflammation to aggressive forms of disease. Early detection is critical, as disease trajectories established during youth can significantly affect periodontal outcomes in adulthood.

Materials and Methods

This paper synthesizes findings from a focused workshop organized by the European Federation of Periodontology (EFP) and the European Academy of Paediatric Dentistry (EAPD), together with a targeted review of recent literature. Emphasis was placed on evaluating the applicability of the current periodontal disease classification system to younger populations and on identifying evidence-based diagnostic and therapeutic strategies.

Results

Key findings indicate that periodontal diseases in children and adolescents exhibit clinical characteristics and progression patterns that differ from those observed in adults. Existing classification systems are generally applicable but require contextual adaptation, particularly regarding diagnostic thresholds and disease grading. Behavioral factors, growth-related changes, and patient compliance significantly influence disease expression and treatment outcomes. Preventive strategies, early risk assessment, and minimally invasive interventions were found to be effective in controlling disease progression and improving long-term oral health.

Conclusions

Periodontal care for young individuals requires a personalized, evidence-based approach that takes developmental and behavioral factors into account. Early intervention, combined with interdisciplinary collaboration, plays a crucial role in preventing disease progression and establishing lifelong oral health. Further review and refinement of current classification frameworks for this age group are warranted.

Keywords: *Periodontal diseases; children; adolescents; early diagnosis; preventive dentistry.*

References

1. Mariano Sanz, David Herrera, Panagiotis N. Papapanou, et al. Treatment of stage I–III periodontitis—The EFP S3 level clinical practice guideline. Journal of Clinical Periodontology, 2021;48(S22):4–60.

2. Panagiotis N. Papapanou, Mariano Sanz, Niklaus P. Lang, et al. Periodontitis: Consensus report of workgroup 2 of the 2017 World Workshop (update and interpretation). Journal of Clinical Periodontology, 2021;48(S21):S173–S182.

3. Guglielmo Campus, Denise Cagetti, et al. Epidemiology of gingivitis in children and adolescents: A systematic review. International Journal of Pediatric Dentistry, 2022;32(1):5–19.

4. Søren Jepsen, Filippo Graziani, Iain Chapple, et al. Primary prevention of periodontitis: Managing gingivitis. Journal of Clinical Periodontology, 2023;50(S26):S105–S132.

5. European Federation of Periodontology & European Academy of Pediatric Dentistry Proceedings and consensus statements on periodontal health in children and adolescents. Journal of Clinical Periodontology, 2023–2024 (supplement issues).

4 FROM TRADITIONAL TO INNOVATIVE TECHNIQUES IN ORAL IMPLANTOLOGY

Hakan Ozyuvaci [1]

1 Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Istanbul University, Fatih, Istanbul 34093, Türkiye; (H.O), hakan.ozyuvaci@gmail.com

Introdution

Oral implantology has evolved from conventional delayed protocols to advanced, technology-driven approaches focused on precision, efficiency, and patient-centered outcomes. Innovations such as immediate implant placement, CAD/CAM systems, artificial intelligence (AI), and 3D imaging have transformed clinical practice.

Materials and Methods

A narrative review of recent literature (2021–2025) was conducted, focusing on digital workflows in implantology, including immediate implant placement, CAD/CAM systems (e.g., Protezcad), AI-assisted planning, and Cone Beam Computed Tomography (CBCT). Relevant clinical studies and systematic reviews were analyzed to evaluate advancements and outcomes.

Results

Immediate implant placement demonstrated reduced treatment time and preservation of alveolar bone. CAD/CAM systems improved prosthetic precision, fit, and workflow efficiency while minimizing patient discomfort. AI-assisted tools enhanced diagnostic accuracy and implant positioning through data-driven analysis. Digital immediate systems enabled seamless integration of intraoral scanning, virtual planning, and guided surgery, reducing chair time and errors. CBCT-based 3D imaging provided superior anatomical visualization, improving safety and supporting minimally invasive procedures.

Conclusions

Modern implantology has shifted toward fully digital, minimally invasive workflows that improve accuracy, efficiency, and patient satisfaction. The integration of AI, CAD/CAM, and 3D imaging technologies enables more predictable outcomes and streamlined treatment. Continued innovation is expected to further enhance clinical performance and patient care.

Keywords: *Oral implantology; immediate implant placement; CAD/CAM; artificial intelligence; CBCT*

References

1. Joda T, Gallucci GO, Wismeijer D, Zitzmann NU. Augmented and virtual reality in dental medicine: A systematic review. Clin Oral Implants Res. 2021;32(S21):93–101.
2. Revilla-León M, Özcan M. Additive manufacturing technologies used for processing polymers in implant dentistry. J Prosthodont. 2021;30(7):560–568.
3. Pellegrino G, Mangano C, Mangano R, et al. Digital workflow in implant dentistry: A narrative review. BMC Oral Health. 2022;22:123.
4. Schwendicke F, Samek W, Krois J. Artificial intelligence in dentistry: Chances and challenges. J Dent Res. 2021;100(7):769–774.
5. Tahmaseb A, Wismeijer D, Coucke W, Derksen W. Computer technology applications in surgical implant dentistry: A systematic review. Clin Oral Implants Res. 2022;33(S23):43–62.

5 LIQUID BIOPSY APPLICATION IN ORAL TUMOR EARLY DETECTION

Natalia Malara [1], Francesco Riva [2]

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Introduction

Early detection of oral squamous cell carcinoma (OSCC) is crucial for improving survival rates and prognosis. However, many cases are diagnosed late due to limitations of visual examination and the invasive nature of conventional biopsy. This study aims to evaluate liquid biopsy, particularly saliva-based diagnostics, as a minimally invasive approach for early detection and monitoring of oral cancer.

Materials and Methods

A narrative review of literature published from 2021 onward was conducted using PubMed, Scopus, and Web of Science. Studies focusing on saliva and blood-based biomarkers—including circulating tumor DNA (ctDNA), circulating tumor cells (CTCs), microRNAs (miRNAs), and epigenetic alterations—were analyzed for diagnostic performance and clinical applicability.

Results

Liquid biopsy shows high potential for early OSCC detection through identification of tumor-derived biomarkers in saliva and blood. Saliva offers a unique diagnostic advantage due to its proximity to oral lesions, enabling detection of genetic and epigenetic alterations with improved sensitivity and specificity. Additionally, liquid biopsy supports real-time monitoring of treatment response and early detection of recurrence. Limitations include variability in biomarker expression and interference from inflammatory conditions.

Conclusions

Liquid biopsy represents a promising, non-invasive tool that may significantly improve early diagnosis and personalized management of OSCC. Further standardization is required before routine clinical implementation.

Keywords: *Oral squamous cell carcinoma; liquid biopsy; salivaomics; early detection; biomarkers*

References

- Wan, J. C. M., Massie, C., Garcia-Corbacho, J., et al. (2021). Liquid biopsies come of age: towards implementation of circulating tumour DNA. Nature Reviews Cancer, 21(1), 7–20.
- Rapado-González, Ó., López-Cedrún, J. L., et al. (2021). Salivary biomarkers for cancer diagnosis: recent advances and clinical applications. Cancers, 13(21), 5548.
- Lousada-Fernandez, F., Rapado-González, Ó., et al. (2022). Liquid biopsy in oral cancer: recent advances and challenges. Frontiers in Oncology, 12, 885944.
- Aro, K., Wei, F., Wong, D. T. (2022). Saliva liquid biopsy for point-of-care applications. Frontiers in Public Health, 10, 895677.
- Khan, M. I., et al. (2023). Emerging role of salivary exosomes in oral cancer detection and prognosis. International Journal of Molecular Sciences, 24(5), 4512.

6 PERI-IMPLANT SOFT TISSUE DEFECTS: ETIOLOGY, CLASSIFICATION, AND CONTEMPORARY MANAGEMENT STRATEGIES

Sivge Kurgan [1]

[1] *Department of Periodontology, Faculty of Dentistry, Ankara University, 06500 Çankaya, Ankara, Türkiye; (S.K.), sivgeakgun@gmail.com*

Introdution

This seminar provides a literature-supported overview of the etiology, classification, and contemporary surgical management of peri-implant soft tissue defects, with emphasis on augmentation techniques, treatment timing protocols, and clinical outcomes.

Materials and Methods

Current evidence from contemporary periodontal and dental implant literature was reviewed. The analysis focused on the biological and esthetic factors influencing peri-implant soft tissue stability, including mucosal phenotype, width of keratinized mucosa, wound-healing dynamics, alveolar ridge defects, systemic and genetic patient-related factors, and oral habits. Surgical and non-surgical approaches, together with soft tissue augmentation procedures, were evaluated based on current clinical protocols and evidence-based recommendations.

Results

Peri-implant soft tissue defects represent an increasing clinical challenge due to their impact on implant health and esthetics. Conditions range from insufficient keratinized mucosa and mucosal recession to peri-implant mucositis and peri-implantitis, each requiring individualized management. Esthetics has become a key determinant of treatment success, particularly in the anterior region. Tissue phenotype, mucogingival conditions, and soft tissue thickness significantly influence long-term stability. Management strategies include soft tissue grafting, connective tissue augmentation, apically positioned flaps, coronally advanced techniques, and biomaterial-assisted regenerative approaches. Accurate diagnosis, defect classification, and appropriate timing of intervention are essential for achieving predictable outcomes.

Conclusions

Peri-implant soft tissue defects require careful diagnosis and evidence-based management. Contemporary augmentation and regenerative techniques can improve tissue stability when applied according to defect morphology, individual patient risk factors, and wound-healing principles.

Keywords: *Peri-implant soft tissue defects; peri-implantitis; mucosal recession; keratinized mucosa; soft tissue augmentation; implant esthetics*

References

- Monje, A.; Blasi, G. Significance of keratinized mucosa around dental implants: A systematic review and meta-analysis. Journal of Periodontology. 2022, 93, 174–188.
- Zucchelli, G.; Tavelli, L.; McGuire, M.K.; et al. Mucosal recession defects around implants: A new classification system and treatment considerations. Journal of Clinical Periodontology. 2021, 48, 714–725.
- Schwarz, F.; Derks, J.; Monje, A.; Wang, H.L. Peri-implantitis. Journal of Clinical Periodontology. 2021, 48(Suppl. 21), 238–250.
- Thoma, D.S.; Naenni, N.; Figuero, E.; et al. Effects of soft tissue augmentation procedures on peri-implant health or disease: A systematic review and meta-analysis. Clinical Oral Implants Research. 2022, 33(Suppl. 23), 32–49.
- Tavelli, L.; Barootchi, S.; Avila-Ortiz, G.; et al. Peri-implant soft tissue phenotype modification and its impact on peri-implant health: A systematic review. International Journal of Oral and Maxillofacial Implants. 2022, 37, 879–892.

7 AUGMENTATION TECHNIQUES APPLICABLE IN CLINICAL PRACTICE

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Introdution

Adequate bone volume and soft tissue quality are critical for successful dental implant placement. However, alveolar ridge resorption and anatomical constraints often require augmentation procedures to enable predictable implant therapy. This abstract outlines commonly applied bone augmentation techniques and their clinical relevance.

Materials and Methods

A narrative overview of augmentation techniques used in daily clinical practice is presented, focusing on defect-driven treatment planning and biological principles of bone regeneration. The main approaches discussed include guided bone regeneration (GBR) for localized defects, autogenous block grafting for horizontal and vertical deficiencies, ridge splitting for narrow alveolar ridges, and maxillary sinus augmentation for insufficient posterior maxillary bone height. Key considerations such as case selection, surgical indications, and technique-specific limitations were evaluated.

Results

Each augmentation technique demonstrates specific indications and clinical advantages. GBR is effective for contained defects with moderate bone loss, while autogenous block grafts remain the gold standard for extensive deficiencies due to their osteogenic potential. Ridge splitting offers a minimally invasive option for narrow crests with adequate bone height, allowing simultaneous implant placement in selected cases. Maxillary sinus augmentation reliably increases vertical bone height in the posterior maxilla. When properly selected and executed, these techniques improve primary implant stability and support long-term functional and esthetic outcomes.

Conclusions

Bone augmentation techniques are essential tools in implant dentistry, enabling treatment in anatomically compromised sites. Careful assessment of defect morphology, patient factors, and biological principles is crucial for selecting the appropriate approach. Understanding the advantages and limitations of each technique enhances clinical decision-making and contributes to predictable implant success and patient satisfaction.

Keywords: *Bone augmentation; guided bone regeneration; ridge splitting; sinus augmentation; autogenous graft; implant dentistry*

References

1. Urban, I.A.; Monje, A.; Lozada, J.L.; Wang, H.L. Principles for vertical ridge augmentation in the atrophic posterior mandible: A technical review. Int. J. Periodontics Restorative Dent. 2021, 41, 639–645.

2. Starch-Jensen, T.; Deluiz, D.; Deb, S.; Bruun, N.H.; Tinoco, E.M.B. Maxillary sinus floor augmentation with autogenous bone graft compared with alternative grafting materials: A systematic review and meta-analysis. Clin. Implant Dent. Relat. Res. 2021, 23, 453–466.

3. Troeltzsch, M.; Troeltzsch, M.; Kauffmann, P.; et al. Clinical efficacy of ridge augmentation techniques in implant dentistry: A systematic review. J. Craniomaxillofac. Surg. 2022, 50, 217–228.

4. Sanz-Sánchez, I.; Ortiz-Vigón, A.; Sanz-Martín, I.; Figuero, E.; Sanz, M. Effectiveness of lateral bone augmentation on the alveolar crest dimension: A systematic review and meta-analysis. J. Dent. Res. 2021, 100, 123–132.

5. Milinkovic, I.; Cordaro, L. Are there specific indications for the different alveolar bone augmentation procedures for implant placement? A systematic review. Int. J. Oral Maxillofac. Surg. 2022, 51, 104–119.

8 ANATOMICAL BOUNDARIES OF THE MANDIBLE AND THEIR INFLUENCE ON SAFE DENTAL IMPLANT PLACEMENT

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Introduction / Aim

Successful implant placement in the mandible requires precise assessment of anatomical structures to avoid complications. This review evaluates the influence of key mandibular boundaries on implant planning and highlights the role of CBCT-based three-dimensional assessment.

Introduction

Successful implant placement in the mandible requires precise assessment of anatomical structures to avoid complications. This review evaluates the influence of key mandibular boundaries on implant planning and highlights the role of CBCT-based three-dimensional assessment.

Materials and Methods

A literature review was conducted using PubMed, Scopus, and Google Scholar, focusing on studies published between 2021 and 2025. Keywords included mandibular canal, mental foramen, interforaminal region, and CBCT implant planning. Relevant systematic reviews, clinical studies, and guidelines were included.

Results

The literature confirms that accurate identification of anatomical structures is essential for safe implant placement. CBCT is the gold standard for evaluating bone dimensions and the relationship to vital structures. Recommended safety margins include maintaining at least 2 mm from the mandibular canal and 1.5–2 mm from the mental foramen. While the anterior mandible is generally safer, anatomical variations such as the incisive canal and lingual foramen require caution. In posterior regions, limited bone height often necessitates modified implant selection. Buccolingual bone morphology is critical in preventing cortical perforation and fenestration.

Conclusions

Precise anatomical assessment and individualized implant planning are essential for minimizing complications and achieving predictable outcomes. CBCT-based planning significantly enhances safety and treatment success.

Keywords: *Dental implants; bone morphology; CBCT; planning*

References

1. Tavelli L, Barootchi S, Ravidà A, Oh TJ, Wang HL. Mandibular anatomical considerations for implant placement: Current concepts and clinical implications. Journal of Clinical Medicine. 2021;10(18):4127. https://doi.org/10.3390/jcm10184127

2. Greenstein G, Cavallaro J, Romanos G, Tarnow D. Clinical recommendations for avoiding and managing surgical complications associated with implant dentistry in the mandible. International Journal of Oral & Maxillofacial Implants. 2022;37(2):e45–e56.

3. de Oliveira-Santos C, Souza PHC, De Azambuja Berti-Couto S, et al. CBCT evaluation of mandibular neurovascular structures relevant to implant placement: A systematic review. Clinical Oral Investigations. 2023;27(4):1621–1635. https://doi.org/10.1007/s00784-022-04721-9

4. Monje A, Suarez F, Galindo-Moreno P, Wang HL. Three-dimensional planning in mandibular implant surgery: Accuracy and anatomical risk reduction. Clinical Implant Dentistry and Related Research. 2024;26(1):89–99. https://doi.org/10.1111/cid.13291

5. Romanos GE, Delgado-Ruiz RA, Sculean A. Contemporary CBCT-guided implant planning in anatomically limited mandibular sites. Periodontology 2000. 2025;97(1):145–161. https://doi.org/10.1111/prd.12516

9 UNDERSTANDING THE LANGUAGE OF PERIODONTAL TISSUES

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Introduction

Periodontal wound healing involves coordinated biological and cellular events that determine whether tissues undergo repair or regeneration. Understanding the "language" of periodontal tissues—cell signaling and interactions—is essential for improving clinical outcomes, particularly new attachment formation.

Materials and Methods

This study is a narrative review of recent literature (2021–present) focusing on periodontal wound healing, cellular and molecular signaling, and biomaterials. Special emphasis is placed on soft tissue behavior (epithelium and gingival connective tissue) and their interaction with deeper structures such as periodontal ligament (PDL), bone, and cementum.

Results

Periodontal soft tissues exhibit unique healing characteristics, including rapid response (within 24 hours) and scarless healing. The epithelium and connective tissue function as a coordinated unit, guiding regeneration of deeper tissues. Emerging evidence highlights the importance of molecular signaling pathways, cell-to-cell communication, and biomaterial-mediated modulation in promoting true regeneration rather than repair.

Conclusions

Deciphering periodontal tissue communication is critical for advancing regenerative therapies. Integration of biological principles with biomaterial innovation enhances predictability in achieving new attachment and periodontal regeneration.

Keywords: *Periodontal regeneration; wound healing; cell signaling; biomaterials; gingival healing*

References

1. Sculean A, Bosshardt DD, Gruber R. Periodontal wound healing and regeneration: Current concepts and clinical implications. J Clin Periodontol. 2022;49(Suppl 24):17–28.

2. Ivanovski S, Vaquette C, Gronthos S, Hutmacher DW, Bartold PM. Multiphasic scaffolds for periodontal tissue engineering. J Dent Res. 2021;100(7):669–678.

3. Miron RJ, Fujioka-Kobayashi M, Bishara M, Zhang Y. Use of platelet-rich fibrin in regenerative dentistry: A systematic review. Clin Oral Investig. 2021;25(2):661–670.

4. Nibali L, Koidou VP, Nieri M, Barbato L, Pagliaro U, Cairo F. Regenerative surgery versus access flap for the treatment of intrabony periodontal defects: A systematic review. J Clin Periodontol. 2021;48(3):320–351.

5. Cortellini P, Tonetti MS. Clinical concepts for regenerative therapy in intrabony defects. Periodontol 2000. 2022;88(1):128–146.

10 CHALLENGES OF ULCERATIVE GINGIVITIS IN THE ALBANIAN POPULATION: A LITERATURE REVIEW

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Introduction

Ulcerative gingivitis (UG) is an acute necrotizing periodontal disease characterized by necrosis of the interdental papillae, spontaneous bleeding, pain, and halitosis. It is associated with anaerobic bacteria and several predisposing factors and may represent a public health concern in Albania due to socioeconomic conditions and limited access to dental care.

Materials and Methods

A literature review was conducted using PubMed, Scopus, and Google Scholar, including studies from the past 20 years related to ulcerative gingivitis, risk factors, and treatment. Regional data on oral health in Albania were also considered.

Results

UG is strongly associated with anaerobic microorganisms, particularly spirochetes and fusiform bacteria. Major risk factors include poor oral hygiene, tobacco use, psychological stress, and immunosuppression. In Albania, the prevalence of smoking, irregular dental visits, and limited oral health education appear to contribute to the occurrence of the disease. Early diagnosis and treatment through mechanical debridement and antiseptic mouth rinses have demonstrated favorable outcomes.

Conclusions

Ulcerative gingivitis remains an important condition within the Albanian population. Strengthening preventive programs and improving access to dental care are essential to reducing the burden of the disease.

Keywords: *Ulcerative gingivitis; necrotizing periodontal disease; oral health; risk factors; periodontal therapy.*

References

- PubMed – Necrotizing Ulcerative Gingivitis, a Rare Manifestation as a Sequel of Drug-Induced Gingival Overgrowth: A Case Report (2021) Damdoum M, Varma SR, Jaber MA, Nambiar M. Necrotizing Ulcerative Gingivitis, a Rare Manifestation as a Sequel of Drug-Induced Gingival Overgrowth: A Case Report. Case Reports in Dentistry. 2021;2021:4120148.
- NCBI Bookshelf – Acute Necrotizing Ulcerative Gingivitis (2026 update) Daley JO, DeBlois KW. Acute Necrotizing Ulcerative Gingivitis. StatPearls Publishing; Updated 2026.
- PMC – Necrotizing Gingivitis: Microbial Diversity and Quantification of Protein Secretion in Necrotizing Gingivitis (2021) Gerhard N, Thurnheer T, Belibasakis GN, Attin T. Necrotizing Gingivitis: Microbial Diversity and Quantification of Protein Secretion in Necrotizing Gingivitis. Antibiotics. 2021;10(10):1197.
- PubMed – Microbiological Study of Periodontal Disease in Populations with HIV: a Systematic Review and Meta-Analysis (2023) Valian NK, Houshmand B, Ardakani MT, Mahmoudi S. Microbiological Study of Periodontal Disease in Populations with HIV: A Systematic Review and Meta-Analysis. Clinical Laboratory. 2023;69(5).
- PubMed – Evaluation of Metronidazole Oral Monotherapy in Anaerobic Oral Infections (2024) Dar-Odeh N, Atef A, Flaifl Y, et al. Evaluation of Metronidazole Oral Monotherapy in Anaerobic Oral Infections. International Journal of Clinical Pharmacology and Therapeutics. 2024;62(11):517–524.

11 INSTRUCTIONS AND MOTIVATION OF PERIODONTAL PATIENTS: INCLUSION OF STRESS MANAGEMENT AND HEALTHY LIFESTYLE

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Introduction

Periodontal diseases remain of a large prevalence worldwide in spite of the evolutions in treatment and prevention. The aim of the present work is to observe the evidence on the instructions and motivation of periodontal patients.

Materials and Methods

Review of the classical and latest evidence in fulfilling the aim of the present observation.

Results

Periodontal diseases are known for their complex nature, where the bacterial plaque as a main etiological factor cannot express clinically the disease if other factors that influence the inflammatory and immune response are not present. Among these factors, despite evidence based, often being neglected in everyday practice, reside the emotional and mental aspect of the patient, nutrition, physical activity, etc.

Conclusions For the primary and secondary prevention, active and supportive treatment of periodontitis, it would be useful an individually tailored orientation in harmony with the inner requirements of each patient, involving instruction on oral hygiene, nutrition, physical activity and emotional and mental management.

Key words Periodontitis; periodontal diseases; primary prevention; secondary prevention; stress

References

- Chapple, I. L. C., Bouchard, P., Cagetti, M. G., et al. (2021). Interaction of lifestyle, behaviour or systemic diseases with dental caries and periodontal diseases: consensus report of Group 2 of the Joint EFP/ORCA workshop on the boundaries between caries and periodontal diseases; Journal of Clinical Periodontology, 48(S21), 12–27; https://doi.org/10.1111/jcpe.13485.

- Genco, R. J., & Borgnakke, W. S. (2021). Diabetes as a potential risk for periodontitis: association studies; Periodontology 2000, 83(1), 40–45; https://doi.org/10.1111/prd.12369.

- Cekici, A., Kantarci, A., Hasturk, H., & Van Dyke, T. E. (2021). Inflammatory and immune pathways in the pathogenesis of periodontal disease; Journal of Periodontology, 92(9), 1155–1163; https://doi.org/10.1002/JPER.20-0622.

- Linden, G. J., Herzberg, M. C., & Working Group 4 of the Joint EFP/AAP Workshop (2022). Periodontitis and systemic diseases: a record of discussions of working group 4 of the Joint EFP/AAP Workshop; Journal of Periodontology, 93(2), 171–178; https://doi.org/10.1002/JPER.21-0673.

- D'Aiuto, F., Gkranias, N., Bhowruth, D., et al. (2022). Systemic effects of periodontitis treatment in patients with type 2 diabetes: a randomized controlled trial; The Lancet Diabetes & Endocrinology, 10(8), 550–560; https://doi.org/10.1016/S2213-8587(22)00132-500132-5).

12 CLINICAL RESEARCH CAREER PATHWAYS

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Introduction

Clinical research plays a central role in advancing evidence-based healthcare through the development, evaluation, and implementation of innovative diagnostic and therapeutic strategies. Beyond traditional clinical practice, the field offers diverse professional opportunities in clinical trials, translational science, regulatory affairs, pharmacovigilance, data management, and medical science liaison activities. This lecture aims to provide an overview of contemporary clinical research career pathways and the evolving competencies required for success in this multidisciplinary environment.

Materials and Methods

A narrative review and educational framework were developed using recent literature, institutional guidelines, and current trends in clinical research careers. Key domains analyzed included academic research, industry-sponsored clinical trials, digital health technologies, precision medicine, and real-world evidence generation. Emphasis was placed on identifying essential skills, training pathways, and strategic career development opportunities for healthcare professionals.

Results

Clinical research careers increasingly require interdisciplinary competencies, including scientific communication, critical appraisal, data interpretation, ethical research conduct, and regulatory knowledge. Emerging sectors such as digital health, artificial intelligence-assisted research, and personalized medicine have expanded career opportunities beyond conventional academic roles. Participation in research projects, publication activities, networking, and structured mentorship were identified as important factors supporting career progression and professional development.

Conclusions

Clinical research offers dynamic and expanding career pathways for healthcare professionals seeking involvement in innovation and evidence generation. Early engagement in research activities, acquisition of transferable skills, and awareness of emerging fields may facilitate successful integration into academic, clinical, or industry-based research careers.

Keywords: *Clinical research; career pathways; translational science; precision medicine; digital health*

References

- World Health Organization. Global Competency Framework for Clinical Research. WHO; 2022.
- European Medicines Agency. Clinical Trials Regulation and Research Workforce Development. EMA; 2023.
- Dorsey ER, Topol EJ. State of Telehealth and Digital Medicine Research. N Engl J Med. 2022;386(10):944–954.
- Collins FS, Varmus H. A New Initiative on Precision Medicine. N Engl J Med. 2021;385(6):507–509.
- Sherman RE, Anderson SA, Dal Pan GJ, et al. Real-World Evidence — What Is It and What Can It Tell Us? N Engl J Med. 2021;375(23):2293–2297.

13 MANAGEMENT OF EXTREME MAXILLARY ATROPHY USING CONVENTIONAL AND ZYGOMATIC IMPLANTS

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Introduction

This presentation aims to describe the management of patients with extreme maxillary atrophy using fixed maxillary prostheses supported by conventional implants combined with zygomatic implants placed using the sinus slot technique.

Materials and Methods

Patients presenting with severe maxillary atrophy and insufficient bone volume for conventional implant-supported rehabilitation were treated using a combined surgical and prosthetic approach. Conventional implants were placed in available residual anatomical structures of the maxilla, while zygomatic implants were inserted according to the sinus slot technique to maximize implant anchorage and prosthetic support. Treatment planning was performed using radiographic and digital diagnostic protocols to evaluate residual bone anatomy and optimize implant positioning for fixed prosthetic rehabilitation.

Results

The combined use of conventional and zygomatic implants allowed rehabilitation of severely atrophic maxillae without the need for extensive bone grafting procedures. The sinus slot technique facilitated accurate placement of zygomatic implants while improving prosthetically driven implant positioning and reducing surgical complexity. Fixed implant-supported prostheses provided restoration of esthetics, masticatory function, and patient comfort. Favorable clinical outcomes and prosthetic stability were observed during postoperative evaluation, with satisfactory functional and esthetic rehabilitation.

Conclusions

The combination of conventional and zygomatic implants represents a predictable treatment modality for patients with extreme maxillary atrophy. The sinus slot technique may provide improved surgical access, optimized implant positioning, and effective support for fixed prosthetic rehabilitation while minimizing the need for extensive reconstructive procedures.

Keywords: *Extreme maxillary atrophy; zygomatic implants; sinus slot technique; fixed prosthesis; implant rehabilitation; maxillary reconstruction*

References

1. Aparicio, C.; Manresa, C.; Francisco, K.; et al. Zygomatic implants: Indications, techniques and outcomes, and the zygomatic success code. Periodontol. 2000 2022, 88, 41–58.

2. Chrcanovic, B.R.; Albrektsson, T.; Wennerberg, A. Survival and complications of zygomatic implants: An updated systematic review. J. Oral Maxillofac. Surg. 2021, 79, 1352–1371.

3. Davó, R.; Pons, O.; Rojas, J.; et al. Immediate function with zygomatic implants: A systematic review and meta-analysis. Clin. Implant Dent. Relat. Res. 2021, 23, 521–537.

4. Bedrossian, E.; Stumpel, L.; Beckely, M.L.; Indresano, T. The zygomatic implant: Preliminary data on treatment of severely resorbed maxillae. Int. J. Oral Maxillofac. Implants 2021, 36, e45–e53.

5. Pellegrino, G.; Tarsitano, A.; Marchetti, C. Rehabilitation of the extremely atrophic maxilla with zygomatic implants: Clinical considerations and surgical techniques. J. Prosthodont. Res. 2022, 66, 210–218.

14 ROLE OF AUTOLOGOUS PLATELET GEL (APG) IN BONE HEALING

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Introduction

The aim of the present study is to evaluate the influence and efficacy of autologous platelets on bone regeneration in a rabbit defects model.

Materials and Methods

A total of 12 critical size tibial defects were produced in six New Zealand rabbits: A total of six defects were filled with autologous platelet gel (APG) and six defects were maintained as untreated controls. No membranes used to cover the bone osteotomies. The histology and histomorphometry were performed at four weeks on retrieved samples of both groups.

Results

No complications were reported in any of the animals nor for the defects produced. A significantly higher lamellar and woven bone percentage was reported for the APG group with a lower level of marrow spaces ($p < 0.05$). Evidence of newly formed bone was found in the superficial portion of the bone defect of APG samples where no aspects of bone resorption were observed.

Conclusions

The evidence of the present research revealed that APG increases new bone formation restricted to the cortical portion and induces more rapid healing in rabbit bone defects than in untreated defects.

Keywords: *Autologous platelet gel; new bone formation; bone repair; platelet derivates*

References

1. Miron RJ, Fujioka-Kobayashi M, Bishara M, Zhang Y, Hernandez M. Platelet-rich fibrin and soft/hard tissue regeneration: Current knowledge and future perspectives. Periodontology 2000. 2021;85(1):75–99.

2. Ghanaati S, Herrera-Vizcaíno C, Al-Maawi S, Lorenz J, Nelson K, Schwarz F. Fifteen years of platelet rich fibrin (PRF) in dentistry and orofacial surgery: How high-quality research has contributed to clinical translation. J Clin Med. 2022;11(3):602.

3. Castro AB, Cortellini S, Temmerman A, Pinto N, Teughels W, Quirynen M. Characterization of the effect of platelet concentrates on bone regeneration: A systematic review and meta-analysis. Clin Oral Investig. 2021;25(4):1939–1954.

4. Li X, Wang Y, Zhang C, Gao Z, Xiao Y. The role of platelet concentrates in bone regeneration: A systematic review and meta-analysis of randomized controlled trials. Stem Cell Res Ther. 2023;14:45.

5. Alves R, Grimalt R. A review of platelet-rich plasma: History, biology, mechanism of action, and classification. Skin Appendage Disord. 2021;7(1):18–24.

15 GINGIVAL HYPERTROPHY IN CASES OF ORTHODONTIC TREATMENT WITH FIXED APPLIANCES

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Introduction

To evaluate gingival hypertrophy associated with fixed orthodontic appliances and identify contributing factors.

Materials and Methods

A narrative review of studies published between 2021–2025 was conducted using orthodontic and periodontal literature. Studies assessing gingival enlargement during fixed orthodontic treatment were included.

Results

Fixed appliances were associated with increased plaque accumulation, poor oral hygiene, and gingival inflammation, leading to gingival hypertrophy. Prolonged treatment duration and elastomeric ligatures were additional risk factors. Most cases improved after periodontal therapy and improved oral hygiene.

Conclusions

Gingival hypertrophy is a frequent complication during fixed orthodontic treatment. Proper oral hygiene and regular periodontal monitoring are essential for prevention and management.

Keywords: *Gingival hypertrophy; fixed appliances; orthodontics; oral hygiene; periodontal health.*

References

- Vincent-Bugnas S, et al. Prioritization of predisposing factors of gingival hyperplasia during orthodontic treatment: the role of amount of biofilm. BMC Oral Health. 2021;21:84.
- Almansob YAM, et al. Comprehensive evaluation of factors that induce gingival enlargement during orthodontic treatment. Niger J Clin Pract. 2021;24(11):1649–1656.
- Soliz MA, Ortiz MJ, Carvajal AS. Prevalence of gingival enlargement in patients with fixed orthodontic aparatology: A cross-sectional observational study. World J Adv Res Rev. 2021;9(2):45–55.
- Narulita D, Megawati V. Gingival enlargement in fixed orthodontic appliance users: Literature review. Stomatognatic J Dent Med. 2023;20(1):1–7.
- Rashid ZJ, et al. Incidence of gingival changes following treatment with fixed orthodontic appliances: A systematic review. Healthcare. 2022;10(8):1373.

16 BONE AUGMENTATION IN THE MAXILLA: TECHNIQUES AND CLINICAL CONSIDERATIONS IN THE ANTERIOR AND POSTERIOR REGIONS

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Introduction

Bone deficiencies in the maxilla represent a major challenge in implant dentistry due to the high aesthetic demands of the anterior region and anatomical limitations of the posterior maxilla. Successful implant rehabilitation requires accurate diagnosis, three-dimensional treatment planning, and appropriate augmentation strategies tailored to the clinical defect. This presentation aims to review current augmentation techniques and clinical considerations in the anterior and posterior maxilla through selected case-based examples.

Materials and Methods

A series of clinical cases involving anterior and posterior maxillary bone augmentation were analyzed. Treatment planning included clinical examination and cone-beam computed tomography evaluation. Surgical approaches presented include guided bone regeneration, particulate and block grafting procedures, sinus floor elevation techniques, staged augmentation, and implant placement protocols. Attention was given to flap management, soft tissue handling, and factors influencing healing and long-term stability.

Results

In the anterior maxilla, augmentation procedures successfully improved ridge dimensions and soft tissue support, contributing to favorable aesthetic outcomes. In the posterior maxilla, sinus augmentation and staged implant approaches enabled implant placement in areas with limited residual bone height caused by sinus pneumatization and ridge resorption. Clinical cases demonstrated predictable bone regeneration and functional rehabilitation when treatment selection was adapted to the defect morphology and patient-specific conditions.

Conclusions

Bone augmentation in the maxilla is a predictable and effective procedure when based on careful diagnosis, appropriate case selection, and precise surgical execution. A case-based clinical approach enhances understanding of the indications, limitations, and management strategies necessary to achieve long-term functional, biological, and aesthetic success in implant therapy.

Keywords: *Bone augmentation; maxillary sinus lift; guided bone regeneration; implant dentistry; maxillary defects*

References

- Urban IA, Monje A, Wang HL. Vertical Ridge Augmentation and Soft Tissue Reconstruction in Implant Therapy. Periodontol 2000. 2023;91(1):198–216
- Sanz-Sánchez I, Ortiz-Vigón A, Sanz-Martín I, Figuero E, Sanz M. Effectiveness of Lateral Bone Augmentation on the Alveolar Crest Dimension: A Systematic Review and Meta-analysis. J Dent Res. 2022;101(1):18–27
- European Federation of Periodontology. Clinical Practice Guidelines for Regenerative Therapy and Implant Site Development. 2023
- Starch-Jensen T, Becktor JP. Maxillary Sinus Floor Augmentation: A Review of Selected Treatment Modalities. J Oral Maxillofac Res. 2021;12(2):e3
- Wang HL, Al-Shammari K. HVC Ridge Deficiency Classification: Updated Clinical Applications in Implant Site Development. Implant Dent. 2022;31(4):245–252

17 THE CHOICE OF ARTIFICIAL TEETH IN REMOVABLE DENTURES AND THEIR IMPORTANCE IN THE AESTHETICS AND FUNCTION OF REMOVABLE DENTURES

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Introduction

To evaluate the selection of artificial anterior teeth in removable dentures and their importance in the esthetic and functional success of prosthetic rehabilitation.

Materials and Methods

A total of 253 patients were rehabilitated with complete and partial removable dentures at the Prosthodontics Department of the University Dental Clinic. The selection of anterior teeth was based on contemporary esthetic principles and theories related to facial morphology, jaw dimensions, facial profile, and individual patient characteristics. Ivoclar and Major artificial teeth were used during denture fabrication. Tooth dimensions were determined according to Pound's formulas using a facial indicator.

Results

Triangular tooth forms were selected in 38% of patients, oval forms in 41%, and square forms in 21% of cases. The individualized selection of anterior teeth improved facial harmony, denture esthetics, and patient satisfaction, while contributing positively to phonetics and masticatory function.

Conclusions

Artificial tooth selection is a collaborative process involving the clinician, dental technician, and patient. Proper adaptation of anterior tooth morphology to facial and individual patient characteristics is essential for achieving optimal esthetic and functional outcomes in removable prosthodontics. These principles should also be considered in fixed prosthetic restorations and veneers.

Keywords: *Removable dentures; artificial teeth; esthetics; prosthodontics; anterior teeth*

References

1. Ahmed N, et al. Comparison of canine-guided occlusion with other occlusal schemes in removable complete dentures: A systematic review. Prosthesis. 2021;3(1):85–98.
2. Srinivasan M, et al. CAD-CAM removable complete dentures: A systematic review and meta-analysis. J Dent. 2021; 113:103777.
3. Takaichi A, et al. A systematic review of digital removable partial dentures. J Prosthodont Res. 2022;66(1):53–67.
4. Silva NCS, et al. Does occlusal morphology of artificial teeth improve chewing of removable denture wearers? J Prosthodont. 2024.
5. Yoshimoto T, et al. Factors affecting masticatory satisfaction in patients with removable partial dentures. Int J Environ Res Public Health. 2021;18(12):6620

18 FULL-ARCH IMPLANT- AND PROSTHESIS-SUPPORTED REHABILITATION: FUNCTIONAL, ESTHETIC AND PSYCHOSOCIAL CONSIDERATIONS

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Introduction

Full-arch implant-supported prosthetic rehabilitation represents one of the most advanced approaches in oral rehabilitation, aiming to restore masticatory function, esthetics, comfort, and quality of life in edentulous patients or those with failed previous rehabilitations. This presentation aimed to evaluate the functional, esthetic, and psychological significance of comprehensive oral rehabilitation using dental implants and prosthetic restorations.

Materials and Methods

A review of contemporary literature was conducted on implant-supported full-arch rehabilitation, prosthetic complications, peri-implant diseases, and their impact on patient quality of life. Clinical concepts related to functional restoration, esthetic integration, and the management of failed implant rehabilitations were also analyzed according to modern implantology and prosthodontic protocols.

Results

Current evidence demonstrates that implant-supported full-arch rehabilitation significantly improves masticatory efficiency, speech, esthetics, and patient satisfaction. Successful outcomes depend on accurate diagnosis, prosthetic planning, implant distribution, occlusal management, and maintenance of peri-implant health. Peri-implantitis and mechanical complications remain the primary causes of treatment failure. An interdisciplinary surgical, prosthetic, and periodontal approach contributes to long-term stability and enhanced patient comfort. Psychological and social benefits, including increased self-confidence and improved social interaction, were consistently reported as important components of successful rehabilitative outcomes.

Conclusions

Modern full-arch rehabilitation should be considered a multidisciplinary treatment approach aimed not only at oral reconstruction but also at restoring function, esthetics, emotional well-being, and overall quality of life. Careful treatment planning and long-term maintenance are essential for achieving predictable and sustainable outcomes.

Keywords: *Full-arch rehabilitation; dental implants; implant-supported prostheses; peri-implantitis; quality of life.*

References

- Sailer I, Karasan D, Todorovic A. Prosthetic failures in dental implant therapy. Periodontology 2000. 2022.
- Ramanauskaite A, Becker K, Wolfart S, et al. Efficacy of rehabilitation with different approaches of implant-supported full-arch prosthetic designs: A systematic review. Journal of Clinical Periodontology. 2021.
- Delucchi F, De Giovanni E, Pesce P, et al. Framework materials for full-arch implant-supported rehabilitations: A systematic review. Materials. 2021.

- Sharma SK, Mohan S, Sharma N, et al. A review of the risk factors involved in the late failure of dental implants. 2022.
- Săndulescu M. Peri-implantitis, biofilm contamination and peri-implant bone loss. GERMS. 2022.

19 MINIMALLY INVASIVE TECHNIQUE IN TREATING ODONTOGENIC CYSTS

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Introduction
Odontogenic cysts may cause significant bone destruction, displacement of adjacent structures, and functional impairment when untreated. Minimally invasive approaches such as decompression have gained increasing attention as conservative treatment options for large cystic lesions. Decompression reduces intracystic pressure, promotes bone regeneration, and may decrease surgical morbidity. This study presents the clinical outcomes of decompression therapy in the management of odontogenic cysts treated at the Oro-Maxillofacial Surgery Department, "Mother Teresa" University Hospital, Tirana.

Materials and Methods
Seven patients with odontogenic cystic lesions were managed using decompression protocols. Cases included residual, radicular, and follicular cysts in both adult and pediatric patients. Preoperative biopsy and radiographic evaluation were performed in all cases. Decompression devices included thermoformed cannulas, resin devices, and suction cannulas fixed to adjacent teeth.
Follow-up consisted of clinical and radiographic assessment of cyst size reduction and bone healing.

Results
Clinical improvement and radiographic reduction were observed in all cases. The mean reduction in cystic cavity size was 36.25%, with initial changes evident after approximately three months of treatment. Larger cystic lesions demonstrated faster reduction rates compared to smaller lesions. Pediatric patients showed favorable bone regeneration and normal eruption of permanent teeth. Symptoms such as pain and paresthesia resolved during follow-up. All patients subsequently underwent second-stage surgical management under improved clinical conditions.

Conclusions
Decompression represents a predictable and minimally invasive approach for the management of large odontogenic cysts. The technique promotes bone healing, reduces lesion size, and improves conditions for definitive surgical treatment while minimizing morbidity.

Keywords: *Odontogenic cysts; decompression; minimally invasive surgery; bone regeneration; maxillofacial surgery*

References
- Pogrel MA. Decompression and Marsupialization as Conservative Treatments for Odontogenic Cysts and Tumors. Oral Maxillofac Surg Clin North Am. 2021;33(3):325–336.
- Nakamura N, Mitsuyasu T, Mitsuyasu Y, Taketomi T, Higuchi Y, Ohishi M. Marsupialization for Odontogenic Keratocysts: Long-Term Follow-Up Analysis. J Oral Maxillofac Surg. 2022;80(4):712–719.
- World Health Organization. WHO Classification of Head and Neck Tumours. 5th ed. 2022.

- Wang E, Zheng X. Clinical Efficacy of Decompression for Large Jaw Cystic Lesions Using Digital Technology. Int J Oral Maxillofac Surg. 2025;54(1):44–51.
- Nguyen TT, Tran PT, Le HD. Treatment of Odontogenic Cysts Using a Minimally Invasive Approach: A Case Series from Vietnam. J Stomatol Oral Maxillofac Surg. 2024;125(2):101–108.

20 VIRTUAL SURGICAL PLANNING, THE FUTURE OF ORAL AND MAXILLOFACIAL SURGERY

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Introduction

Nowadays, the surgical guide or guide plays an important role in implant positioning. Guided implant surgery uses a planning program that allows the matching, or superimposition, of the DICOM radiological image and the clinical STL image. The main goal of this surgical technique is to help the doctor preserve the anatomical structures, but also with the new virtual advances it allows him to perform an immediate aesthetic procedure much less invasively. Material and Methods In this study, an online search was made in the PubMed/Medline database. This was done to review the latest research and advances in guided implant surgery. We also selected some of our clinical cases to demonstrate the benefits and limitations of this technique.

Material and Methods

In this study, an online search was made in the PubMed/Medline database. This was done to review the latest research and advances in guided implant surgery. We also selected some of our clinical cases to demonstrate the benefits and limitations of this technique.

Results

Guided implant surgery improves accuracy in implant positioning and reduces surgical invasiveness. Clinical cases showed shorter operative times, better postoperative recovery, and precise prosthetic planning. Despite minor limitations related to data matching and guide fabrication, the technique demonstrated high predictability and overall clinical effectiveness.

Conclusions

Guided surgery has improved conventional implant surgery and can be used to anticipate anatomical obstacles. Furthermore, the intervention is much shorter in time, less invasive, and traceability is much simpler. Key words: implants, guided implant surgery, surgical guide.

References

1. Tahmaseb A, De Clerck R, Wismeijer D; Computer-guided implant placement: 3D planning, surgical guides, and accuracy; Journal of Clinical Medicine, 2021;10(18):4097; https://doi.org/10.3390/jcm10184097.

2. Putra RH, Yoda N, Astuti ER, Sasaki K; The accuracy of computer-guided implant placement: A systematic review and meta-analysis; Clinical Oral Implants Research, 2022;33(1):1–15; https://doi.org/10.1111/clr.13833.

3. Moraschini V, Velloso G, Luz D, Barboza ESP; Implant survival rates, marginal bone level changes, and complications in full-arch rehabilitations with guided surgery: A systematic review; International Journal of Oral and Maxillofacial Surgery, 2021;50(7):932–942; https://doi.org/10.1016/j.ijom.2020.11.021.
4. Chen Z, Li J, Sinjab K, Mendonça G; Accuracy of static computer-assisted implant surgery: A systematic review and meta-analysis; Journal of Prosthetic Dentistry, 2023;129(2):197–206; https://doi.org/10.1016/j.prosdent.2021.08.014.
5. Vercruyssen M, Coucke W, Naert I, Jacobs R, Teughels W, Quirynen M; Depth and lateral deviations in guided implant surgery: A clinical study comparing fully guided and partially guided systems; Clinical Implant Dentistry and Related Research, 2022;24(3):345–353; https://doi.org/10.1111/cid.13087.

21 ORTHODONTIC TREATMENT AND THE OVERLOOKED PERIODONTIUM – A CASE SERIES AND NARRATIVE REVIEW

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Introduction
The relationship between orthodontic tooth movement and periodontal tissue integrity is well established; however, pre-treatment periodontal phenotype assessment remains inconsistently applied in both fixed appliance and clear aligner therapy (CAT). Thin gingival phenotype, limited buccal bone thickness, and pronounced gingival scalloping are recognized risk factors for orthodontically induced gingival recession (GR). This study aimed to evaluate the periodontal consequences of initiating orthodontic treatment without systematic phenotype assessment.

Materials and Methods
A preliminary case series of patients presenting with post-orthodontic GR following treatment with fixed appliances or CAT without documented periodontal phenotype evaluation was reviewed. Clinical findings, recession classifications (Cairo RT1/RT2), and surgical management approaches were analyzed. A focused narrative literature review was also conducted regarding phenotype-related risk factors, buccal bone assessment, and mucogingival outcomes associated with orthodontic treatment.

Results
Patients with thin periodontal phenotype and reduced buccal bone support consistently developed clinically significant GR during or after orthodontic treatment, regardless of the appliance system used.
Surgical treatment with connective tissue grafts (CTG) combined with coronally advanced flap (CAF) resulted in satisfactory root coverage and increased keratinized tissue at short-term follow-up. Literature findings supported the association between phenotype-blind orthodontic treatment and increased mucogingival complications.

Conclusions
Comprehensive periodontal phenotype assessment, including evaluation of gingival biotype, scallop pattern, and buccal bone morphology, should be considered mandatory before orthodontic treatment. Interdisciplinary protocols integrating periodontal evaluation into orthodontic planning may reduce preventable mucogingival complications and the need for corrective periodontal surgery.

Keywords: *Periodontal phenotype; gingival recession; clear aligner therapy; fixed orthodontic appliances; connective tissue graft*

References

1. Crego-Ruiz M, Jorba-García A. Assessment of the periodontal health status and gingival recession during orthodontic treatment with clear aligners and fixed appliances: a systematic review and meta-analysis. Med Oral Patol Oral Cir Bucal. 2023;28(4):e330–e340. doi:10.4317/medoral.25760

2. Alsulaimani L, Qali M. Relationship between cone-beam CT evaluation and clinical evaluation before and after orthodontic treatment and the rate of gingival recession: a systematic review. Cureus. 2024;16(6):e62536. doi:10.7759/cureus.62536

3. Weinberg E, Kolerman R, Kats L, Cohen O, Masri D, Sebaoun A, Slutzkey G. Coronally advanced flap with connective tissue graft for treating orthodontic-associated Miller Class III gingival recession of the lower incisors: a one-year retrospective study. J Clin Med. 2022;11(1):235. doi:10.3390/jcm11010235

4. Gül İ, Çolak R, Cicek O. Evaluation of the effect of periodontal health and orthodontic treatment on gingival recession: a cross-sectional study. BMC Oral Health. 2025. doi:10.1186/s12903-025-06449-6

5. Elsayed SA, Elshazly TM, Hassan AH, Alotaibi A. BMC Oral Health. 2024;24:232. doi:10.1186/s12903-024-03991-z

22 LATERAL REPOSITIONING OF THE INFERIOR ALVEOLAR NERVE IN ATROPHIC POSTERIOR MANDIBLE

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Introduction

Rehabilitation of the atrophic posterior mandible is challenging due to limited bone height and proximity to the inferior alveolar nerve (IAN). Lateral repositioning of the IAN enables placement of standard-length implants without extensive bone grafting, offering an alternative to augmentation procedures.

Materials and Methods

A review-based analysis and case-oriented evaluation were conducted, focusing on surgical techniques, implant placement, and outcomes of IAN lateralization. Comparisons were made with grafting and graftless approaches for managing posterior mandibular atrophy.

Results

IAN lateralization allowed successful implant placement with survival rates ranging from 94.5% to 100%. The technique offers advantages such as single-stage surgery, reduced treatment time, and improved primary stability. However, temporary neurosensory disturbances, including paresthesia and hypoesthesia, were observed.

Conclusions

IAN lateral repositioning is an effective option for implant placement in atrophic mandibles, with high success rates. Careful case selection and surgical experience are essential to minimize complications.

Keywords: *Inferior alveolar nerve; atrophic mandible; dental implants; repositioning; graftless.*

References

- Aloy-Prósper A, et al. Inferior alveolar nerve lateralization for implant placement: A systematic review. J Clin Med. 2022
- de Vicente JC, et al. Neurosensory outcomes after inferior alveolar nerve repositioning. Med Oral Patol Oral Cir Bucal. 2023
- Alikhasi M, et al. Treatment options for atrophic posterior mandible: A review. Clin Implant Dent Relat Res. 2022
- Urban IA, et al. Advances in bone augmentation techniques in implant dentistry. Periodontology 2000. 2023
- Nkenke E, Neukam FW. Autogenous bone harvesting and grafting in implant dentistry: Current perspectives. Int J Implant Dent. 2022

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23 ORTHOGNATHIC SURGERY IN THE CORRECTION OF FUNCTION AND ESTHETICS IN JAW DEVELOPMENTAL ANOMALIES

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Introduction

This presentation aims to describe the role of orthognathic surgery in the correction of functional and esthetic problems associated with developmental jaw anomalies, with emphasis on interdisciplinary treatment planning and orthodontic-surgical cooperation.

Materials and Methods

Different clinical cases involving severe jaw developmental abnormalities were evaluated through clinical examination, cephalometric analysis, radiographic assessment, and interdisciplinary treatment planning. Particular emphasis was placed on cooperation between the oral and maxillofacial surgeon and the orthodontist in establishing functional occlusion, facial harmony, and long-term treatment stability. Cephalometric measurements served as the basis for surgical planning, alongside evaluation of additional functional, esthetic, and psychological factors.

Results

Severe developmental anomalies of the jaws may lead not only to difficulties in mastication, speech, and oral function, but also to significant facial disharmony affecting the patient's psychological well-being and social interaction. Comprehensive orthodontic and surgical planning enables correction of skeletal discrepancies, improvement of facial esthetics, and restoration of functional occlusion.
Cephalometric analysis remains an essential diagnostic tool for determining skeletal relationships and planning surgical movements; however, treatment success also depends on evaluation of soft tissue profile, facial proportions, airway considerations, temporomandibular joint function, and patient expectations. Interdisciplinary management contributes to predictable functional and esthetic outcomes.

Conclusions

Orthognathic surgery represents an effective treatment modality for correcting severe jaw developmental anomalies and improving both function and facial esthetics. Successful outcomes require detailed cephalometric evaluation, individualized treatment planning, and close collaboration between the surgeon and orthodontist to achieve stable and satisfactory results.

Keywords: *Orthognathic surgery; jaw anomalies; cephalometric analysis; facial esthetics; orthodontic-surgical treatment; functional rehabilitation*

References

1. Proffit, W.R.; Turvey, T.A.; Phillips, C. Orthognathic surgery: A hierarchy of stability. Int. J. Adult Orthodon. Orthognath. Surg. 2021, 36, 109–116.
2. Posnick, J.C. Orthognathic surgery and facial aesthetics: Integrated treatment planning. Oral Maxillofac. Surg. Clin. North Am. 2022, 34, 1–15.
3. Al-Hiyali, A.; Ayoub, A.; Ju, X.; et al. Three-dimensional assessment of facial changes following orthognathic surgery: A systematic review. J. Craniomaxillofac. Surg. 2021, 49, 869–878.
4. Ko, E.W.C.; Hsu, S.S.P.; Wang, Y.C.; Chen, Y.R. The role of orthognathic surgery in improving quality of life and psychosocial outcomes. Clin. Oral Investig. 2022, 26, 4125–4134.
5. Ferri, J.; Schlund, M.; Bricout, N.; Nicot, R. Contemporary concepts in orthognathic surgery and multidisciplinary treatment planning. J. Stomatol. Oral Maxillofac. Surg. 2021, 122, 210–218

24 GUIDED QUAD ZYGOMA REHABILITATION IN AN EXTREMELY ATROPHIC MAXILLA: A CASE REPORT USING A DIGITAL WORKFLOW AND EARLY LOADING

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Introduction

This case report aims to present the use of guided Quad Zygoma rehabilitation combined with a digital workflow and early loading protocol for the graftless treatment of an extremely atrophic maxilla after failed regenerative procedures.

Materials and Methods

A patient with severe maxillary atrophy and an almost absent premaxilla presented after unsuccessful sinus lift and bone augmentation procedures. Following clinical and radiographic evaluation, virtual implant planning was performed and a custom surgical guide was fabricated. Under general anesthesia, four zygomatic implants were placed according to the Quad Zygoma concept using guided surgery. Multi-unit abutments were connected, and a digital impression was obtained immediately after surgery. A CAD/CAM PMMA provisional bridge was designed and fabricated through a fully digital workflow and delivered after 7 days as part of an early loading protocol.

Results

Guided surgery enabled accurate implant positioning in a highly compromised anatomical situation and facilitated prosthetically driven rehabilitation. The digital workflow allowed efficient prosthetic fabrication and timely provisionalization. The provisional restoration demonstrated satisfactory fit, stability, esthetics, and function, without immediate surgical or prosthetic complications.

Conclusions

Guided Quad Zygoma rehabilitation may represent a predictable graftless treatment option for patients with extreme maxillary atrophy and previous grafting failures. The integration of guided surgical planning and digital prosthetic workflows can improve accuracy, treatment efficiency, and controlled early loading in complex maxillary rehabilitations.

Keywords: *Zygomatic implants, extreme maxillary atrophy, guided surgery, multi-unit abutments, PMMA, early loading*

References

- Quad Zygoma: A Revised Approach for the Rehabilitation of the Atrophic Maxilla Aparicio C, Manresa C, Francisco K, Claros P, Alández J, González-Martín O, Albrektsson T. “Quad Zygoma: A Revised Approach for the Rehabilitation of the Atrophic Maxilla.” Journal of Clinical Medicine. 2021;10(16):3555. DOI: 10.3390/jcm10163555.
- Zygomatic implants in rehabilitation of severe maxillary atrophy: a systematic review Chrcanovic BR, Albrektsson T, Wennerberg A. “Zygomatic implants in rehabilitation of severe maxillary atrophy: a systematic review.” Oral and Maxillofacial Surgery. 2022;26(2):157–174. DOI: 10.1007/s10006-021-00986-6.
- Digital workflow for zygomatic implant rehabilitation in severely atrophic maxilla Wang F, Huang W, Zhang Z, Li Y. “Digital workflow for zygomatic implant rehabilitation in severely atrophic maxilla.” BMC Oral Health. 2023;23:418. DOI: 10.1186/s12903-023-03075-9.
- Immediate loading with zygomatic implants for rehabilitation of the atrophic maxilla Maló P, de Araújo Nobre M, Lopes I, Ferro A, Gravito I. “Immediate loading with zygomatic implants for rehabilitation of the atrophic maxilla: 5-year prospective study.” Clinical Implant Dentistry and Related Research. 2021;23(4):567–576. DOI: 10.1111/cid.13012.
- Guided surgery and digital prosthetic workflow in zygomatic implant rehabilitation de Almeida EO, Pellizzer EP, Goiato MC, Santiago JF Jr. “Guided surgery and digital prosthetic workflow in zygomatic implant rehabilitation: a clinical report.” International Journal of Implant Dentistry. 2024;10(1):14. DOI: 10.1186/s40729-024-00491-2.

25 IMMEDIATE FULL-ARCH MANDIBULAR REHABILITATION WITHIN 24 HOURS USING DIGITAL DENTISTRY: A CLINICAL CASE REPORT

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Introduction
This clinical case report presents a fully digital workflow for immediate full-arch mandibular rehabilitation, emphasizing rapid functional and esthetic restoration within 24 hours. The patient’s primary expectation was simple: “to bite into an apple within 24 hours.” The objective was to demonstrate how digital dentistry enables immediate functional rehabilitation within a single day.

Materials and Methods
A 52-year-old patient underwent complete implant-supported mandibular rehabilitation. Following tooth extractions, six implants were placed with sufficient primary stability to allow immediate loading. Scan bodies were connected to the multi-unit abutments (MUAs), and a digital impression was obtained using the Medit i700 intraoral scanner. The data were processed in exocad DentalCAD software for the design of a full-arch provisional prosthesis, ensuring passive fit, proper occlusion, and esthetics. A CAD/CAM-fabricated PMMA provisional prosthesis was delivered within 24 hours. Clinical evaluation included assessment of prosthesis fit, implant stability, and healing progression.

Results
All implants achieved sufficient primary stability. The provisional PMMA prosthesis demonstrated satisfactory passive fit and functional occlusion. The patient reported immediate improvements in chewing ability, comfort, and esthetics. No biological or mechanical complications were observed during the two-month follow-up period.

Conclusions
Immediate full-arch mandibular rehabilitation using a digital workflow is a predictable and time-efficient treatment approach. It enhances accuracy, streamlines prosthesis fabrication, and improves patient satisfaction.

Keywords: *Immediate loading; full-arch rehabilitation; mandible; digital dentistry; PMMA prosthesis.*

References

1. Papaspyridakos P, De Souza A, Bathija A, Kang K, Chochlidakis K. Complete digital workflow for mandibular full-arch implant rehabilitation in 3 appointments. Journal of Prosthodontics. 2021;30(6):548–552. doi:10.1111/jopr.13356
2. Yang JW, Liu Q, Yue ZG, Hou JX, Afrashtehfar KI. Digital workflow for full-arch immediate implant placement using a stackable surgical guide fabricated using selective laser melting technology. Journal of Prosthodontics. 2021;30(7):645–650. doi:10.1111/jopr.13375
3. Abdelaziz MS, Tella EA. Digital design and manufacture of a stackable implant surgical guide for immediate loading in completely edentulous full-arch cases: A dental technique. Quintessence International. 2023;54(9):750–755. doi:10.3290/j.qi.b4325369
4. Martins J, Rangel J, Nobre MA, Ferro A, Nunes M, Almeida R, Guedes CM. A new full digital workflow for fixed prosthetic rehabilitation of full-arch edentulism using the All-on-4 concept. Medicina. 2024;60(5):720. doi:10.3390/medicina60050720
5. Ahmed WM, Alqarni H. Maxillary and mandibular implant rehabilitation using a completely digital workflow: A technique. Journal of Prosthetic Dentistry. 2024;132(4):687.e1–687.e5. doi:10.1016/j.prosdent.2024.05.008

26 SOFT TISSUE CONSIDERATIONS BEFORE IMPLANT PLACEMENT

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Introduction

To evaluate the dimensional changes of alveolar soft and hard tissues following tooth extraction, as well as the effectiveness of alveolar ridge preservation and regenerative procedures prior to implant placement.

Materials and Methods

An electronic search was conducted in the MEDLINE and CENTRAL databases to identify randomized clinical trials and prospective studies investigating alveolar tissue changes following tooth extraction. Using the keywords “alveolar soft and hard tissues after extraction,” 33 relevant studies were selected for analysis.

Results

Six months after tooth extraction, horizontal bone loss ranging from 29% to 63% and vertical bone loss ranging from 11% to 22% were observed, corresponding to approximately 3.8 mm of horizontal loss and 1.2 mm of vertical loss. Bone graft materials combined with cross-linked membranes demonstrated superior outcomes in preserving soft tissue thickness and buccal vertical height. Soft tissue grafts were found to be more effective in maintaining horizontal ridge width, whereas non-cross-linked membranes yielded less favorable results. Alveolar ridge preservation procedures reduced horizontal bone loss by 1.5–2.4 mm and vertical bone loss by 1.0–2.5 mm. The formation of mature bone after 4–6 months was considered adequate for implant placement.

Conclusions

The management of soft and hard tissues prior to implant placement is essential for long-term implant success. Alveolar ridge preservation and regenerative procedures contribute significantly to minimizing bone resorption and creating optimal conditions for implant therapy.

Keywords: *Dental implant; alveolar ridge preservation; soft tissue; bone regeneration; tooth extraction.*

References

1. Canullo L, Pesce P, Antonacci D, Ravidà A, Galli M, Khijmatgar S, Tommasato G, Sculean A, Del Fabbro M. Soft tissue dimensional changes after alveolar ridge preservation using different sealing materials: a systematic review and

network meta-analysis. Clin Oral Investig. 2022 Jan;26(1):13-39. doi: 10.1007/s00784-021-04192-0. Epub 2021 Oct 20. PMID: 34669038; PMCID: PMC8791918.
2. Del Fabbro M, Tommasato G, Pesce P, Ravidà A, Khijmatgar S, Sculean A, Galli M, Antonacci D, Canullo L. Sealing materials for post-extraction site: a systematic review and network meta-analysis. Clin Oral Investig. 2022 Feb;26(2):1137-1154. doi: 10.1007/s00784-021-04262-3. Epub 2021 Nov 25. PMID: 34825280; PMCID: PMC8816783.
3. Slagter KW, Meijer HJA, Hentenaar DFM, Vissink A, Raghoebar GM. Immediate single-tooth implant placement with simultaneous bone augmentation versus delayed implant placement after alveolar ridge preservation in bony defect sites in the esthetic region: A 5-year randomized controlled trial. J Periodontol. 2021 Dec;92(12):1738-1748. doi: 10.1002/JPER.20-0845. Epub 2021 Apr 3. PMID: 33724473.
4. Gamal N, Shemais N, Al-Nawawy M, Ghallab NA. Post-extraction volumetric analysis of alveolar ridge contour using subepithelial connective tissue graft in esthetic zone: a randomized controlled clinical trial. Clin Oral Investig. 2023 Nov;27(11):6503-6512. doi: 10.1007/s00784-023-05255-0. Epub 2023 Sep 19. PMID: 37726486; PMCID: PMC10630239.
5. Ucer C, Khan RS. Alveolar Ridge Preservation with Autologous Platelet-Rich Fibrin (PRF): Case Reports and the Rationale. Dent J (Basel). 2023 Oct 23;11(10):244. doi: 10.3390/dj11100244. PMID: 37886929; PMCID: PMC10605266.

27 THE BARUTI–DEMIRAQI 2.0 APPROACH: PAOO WITH HARD AND SOFT TISSUE GRAFTING ENHANCED BY ARTIFICIAL INTELLIGENCE

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Introduction
To present the Baruti–Demiraqi 2.0 Approach, an advanced Periodontally Accelerated Orthodontic Osteotomy (PAOO) protocol integrated with Artificial Intelligence (AI) and hard and soft tissue grafting, aimed at improving orthodontic and periodontal outcomes in adult patients.

Materials and Methods
The protocol combines CBCT imaging, intraoral scanning, and AI-assisted analysis for automated anatomical segmentation, assessment of cortical bone morphology, and identification of areas at risk for dehiscence and gingival recession. AI-assisted digital planning was used to optimize corticotomy design, graft placement, and orthodontic biomechanics utilizing advanced fixed appliances and/or clear aligners. Postoperative monitoring included continuous clinical and radiographic evaluations.

Results
Preliminary clinical observations demonstrated improved surgical precision, increased buccal bone thickness, reduced risk of periodontal dehiscence, and more efficient orthodontic tooth movement. AI-assisted planning minimized operator-dependent variability and enhanced treatment predictability in periodontally compromised or high-risk cases.

Conclusions
The Baruti–Demiraqi 2.0 Approach represents an innovative multidisciplinary model that integrates surgical biology, grafting procedures, and Artificial Intelligence-driven orthodontic planning to improve precision, safety, and long-term periodontal stability in adult orthodontic therapy.

Keywords: *Baruti–Demiraqi 2.0 Approach; artificial intelligence; PAOO; bone graft; soft tissue graft.*

References

- Orthodontics Khanagar SB, et al. Developments, application, and performance of artificial intelligence in dentistry – A systematic review. J Dent Sci. 2021.
- Periodontology Binderman I, et al. PAOO and regional acceleratory phenomenon in modern orthodontics. Clin Oral Investig. 2022.
- Digital Dentistry Schwendicke F, et al. Artificial intelligence in dental imaging: A review. Dentomaxillofac Radiol. 2021.
- Periodontology Zuhr O, Hürzeler M. Plastic-esthetic periodontal surgery and soft tissue management. Quintessence Publishing. 2022.
- Orthodontics Jiang Y, et al. Artificial intelligence-assisted clear aligner therapy: Current perspectives and future directions. Angle Orthod. 2023.

28 THE USE OF PRF IN DENTAL IMPLANT SURGERY: A MODERN APPROACH FOR LONG-TERM SUCCESS

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Introduction

To analyze the role of PRF as an autologous regenerative biomaterial in implant surgery by evaluating its effect on the preservation of vertical alveolar dimensions after tooth extraction and on the creation of favorable conditions for dental implant placement and osseointegration.

Materials and Methods

This study was designed as a descriptive and comparative study. Seven systemically healthy patients with indications for tooth extraction and subsequent implant treatment were included. Following extraction, A-PRF was applied, prepared from 10 mL of venous blood without anticoagulants and centrifuged at 1300 rpm for 14 minutes. PRF was combined with a xenogeneic bone graft to form “sticky bone” and applied into the extraction socket prior to dental implant placement.
Vertical dimensional changes of the alveolar ridge were evaluated using panoramic radiography or cone-beam computed tomography immediately after extraction and at 1, 2, and 3 months postoperatively. Statistical analysis was performed using the Friedman test and the Wilcoxon signed-rank test, with a significance level set at $p < 0.05$.

Results

The results demonstrated a significant increase in vertical alveolar height in all analyzed cases, particularly during the first two months following PRF application. Alveolar regeneration percentages ranged from 73.1% to 92.3%. The second month showed the highest regeneration values, while a biological stabilization of alveolar dimensions was observed during the third month.

Conclusions

The use of PRF, especially when combined with a bone graft, appears to be effective in enhancing alveolar regeneration and preserving vertical ridge height after tooth extraction. PRF acts as a supportive biological tool that improves peri-implant tissue healing and creates favorable conditions for dental implant osseointegration.

Keywords: *Platelet-Rich Fibrin, implant surgery, alveolar regeneration, osseointegration, bone graft, sticky bone.*

References

1. Elbanna L, Alqahtani A, Alharbi N. Fundamentals of dental implantology: a comprehensive overview. Saudi J Oral Dent Res. 2025;10(8):308–315.
2. Javed F. Guided implant surgery: principles and practice. Dent Update. 2024;51(3):187–194.
3. Rehner A, Silva LF, Costa FO. Advances in dental implants: trends in nanomaterials and surface modifications. Bioengineering (Basel). 2025;9(3):140.
4. Dimofte M, Ionescu A, Grigorescu D. Modern oral implantology: developments, challenges, and clinical perspectives. Romanian J Oral Rehabil. 2025;17(1):12–24.
5. Goker F, Demircan S, Yilmaz HG. Outcomes of dental implants in routine clinical practice: a retrospective study. Int J Dent. 2025;2025:1–9.

29 PIEZOGRAPHY IMPRESSION: IMPRESSION MATERIALS

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Introduction
This presentation aims to evaluate the role of impression materials used in piezography and their impact on denture stability, functional adaptation, and patient comfort in complete removable prosthodontics.

Materials and Methods
A review of contemporary literature and clinical cases on piezography, neutral zone recording, and impression materials in removable prosthodontics was conducted. The evaluated materials included silicones, zinc oxide–eugenol, tissue conditioners, polyethers, and thermoplastic materials. Ideal characteristics such as low viscosity, extended working time, accurate detail reproduction, and dimensional stability were analyzed. Piezography was applied during the stages of functional impression making, maxillomandibular relationship recording, and clinical try-in procedures.

Results
Piezography enabled accurate recording of the neutral zone and improved functional integration between the denture and the periprosthetic musculature. Silicones were found to be the most commonly used materials due to their dimensional stability and precise detail reproduction. Clinical cases demonstrated improved denture stability, phonetics, patient comfort, and reduced denture displacement during function.

Conclusions
Piezography is a valuable functional technique in removable prosthetic rehabilitation, particularly in complex edentulous cases. Appropriate material selection is essential for long-term stability and accurate neutral zone registration. Silicones remain the most recommended materials for clinical use.

Keywords: *Removable dentures; piezography; neutral zone; impression materials.*

References

- Awuti S, Wang TM, Ariani N, Naveau A, Somogyi-Ganss E, Sumita YI. Piezography approach to denture fabrication for a partial glossectomy patient: A clinical report. International Journal of Maxillofacial Prosthetics. 2021;4:37–42.
- Michelinakis G, Apostolakis D, Kamposiora P, Papavasiliou G, Özcan M. The direct digital workflow in fixed implant prosthodontics: a narrative review. BMC Oral Health. 2021;21:37.
- Thilakumara IP. Impression techniques in prosthodontics. The General Dental Practitioner. 2021;38:30–35.
- Alyari M, Khachidze N. Role of impression materials in dentistry. Caucasus Journal of Health Sciences and Public Health. 2021;5(2).
- Jei JB, KV A. Evolution of impression tray and materials: A literature review. Journal of Clinical Prosthodontics and Implantology. 2021;3(2):1–41.

30 NON-SURGICAL PERIODONTAL THERAPY: EFFECTIVENESS AND LIMITATIONS IN THE MANAGEMENT OF PERIODONTITIS

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Introduction
The aim of this review is to evaluate the effectiveness and limitations of non-surgical periodontal therapy (NSPT) in the management of periodontitis.

Materials and Methods
A narrative review of the literature was conducted using PubMed and Scopus databases. Recent clinical trials and systematic reviews evaluating the clinical outcomes of NSPT in patients with periodontitis were included.

Results
The findings demonstrate that NSPT, primarily consisting of scaling and root planing, is effective in reducing bacterial load, decreasing inflammation, and improving clinical parameters such as probing pocket depth and clinical attachment level, particularly in mild to moderate forms of periodontitis. Patient education and maintenance of proper oral hygiene significantly enhance treatment outcomes. However, in advanced stages of the disease, deep periodontal pockets and complex anatomical structures may limit complete biofilm removal, leading to residual periodontal pockets and an increased risk of disease recurrence. Adjunctive therapies, including local antimicrobials and host modulation agents, may further improve clinical outcomes in selected cases.

Conclusions
NSPT remains the cornerstone of periodontal treatment and provides favorable clinical results in the management of periodontitis. Nevertheless, its limitations should be recognized in advanced cases, where surgical intervention may be necessary to achieve optimal long-term outcomes.

Keywords: *Periodontitis; non-surgical periodontal therapy; scaling and root planing; bacterial biofilm; periodontal health*

References
- Periodontology Sanz M, Herrera D, Kebschull M, et al. Treatment of stage I–III periodontitis—The EFP S3 level clinical practice guideline. J Clin Periodontol. 2021;48(Suppl 22):4–60.
- Graziani F, Karapetsa D, Alonso B, Herrera D. Nonsurgical and surgical treatment of periodontitis: how many options for one disease? Periodontol 2000. 2022;90(1):183–194.
- Jepsen S, Caton JG, Albandar JM, et al. Periodontal manifestations of systemic diseases and current treatment concepts. J Periodontol. 2021;92(6):789–804.

- Nibali L, Koidou VP, Nieri M, et al. Regenerative surgery versus access flap for the treatment of intrabony periodontal defects: a systematic review. J Clin Periodontol. 2021;48(3):320–351.
- Suvan J, Leira Y, Moreno Sancho FM, et al. Subgingival instrumentation for treatment of periodontitis: systematic review and network meta-analysis. J Clin Periodontol. 2023;50(S26):110–130.

31 ANALYSIS OF THE IMMUNE MICROENVIRONMENT IN THE PERI-IMPLANT REGION: The Role of Inflammatory Cytokines in Tissue Homeostasis and Remodeling

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Introduction
This narrative review aimed to evaluate the role of inflammatory cytokines in maintaining peri-implant tissue homeostasis, osseointegration, and peri-implant disease progression, while identifying potential diagnostic biomarkers and therapeutic targets.

Materials and Methods
A narrative review was conducted using a PRISMA-based article selection strategy. Recent systematic reviews, meta-analyses, and experimental studies published within the last five years were analyzed through PubMed, Scopus, and Web of Science databases. The review focused on biological and immunological mechanisms in peri-implant tissues, particularly cytokine expression in peri-implant crevicular fluid (PICF) and tissue samples.

Results
Balanced immune activation after implant placement supports healing and successful osseointegration. Dysregulation of this response leads to increased levels of IL-1β, IL-6, TNF-α, and RANKL, alongside reduced IL-10 and osteoprotegerin (OPG). Elevated RANKL/OPG ratios promote osteoclast activation, connective tissue destruction, and progressive peri-implant bone loss, characteristic of peri-implantitis. Macrophage polarization, bacterial biofilm dysbiosis, and implant surface characteristics further influence the inflammatory microenvironment.

Conclusions
Inflammatory cytokines are central regulators of peri-implant immune homeostasis and tissue remodeling. Analysis of cytokine profiles in PICF may provide a valuable approach for early diagnosis of peri-implant diseases. Additionally, modulation of the immune microenvironment through implant surface optimization and host-modulation therapies represents a promising strategy for prevention and treatment.

Keywords: *Peri-implant tissues; cytokines; immune microenvironment; osseointegration; peri-implantitis; inflammation; tissue remodeling; RANKL/OPG; biomarkers.*

References
1. Liu S, Chen G. Modulation of the Immune-Inflammatory Microenvironment by Implant Material Properties in Peri-Implantitis. Int J Mol Sci. 2026;27:3006.
2. Oliveira JA, de Oliveira Alves R, Nascimento IM, Hidalgo MAR, Scarel-Caminaga RM, Pigossi SC. Pro- and anti-inflammatory cytokines and osteoclastogenesis-related factors in peri-implant diseases: systematic review and meta-analysis. BMC Oral Health. 2023;23(1):420.
3. Rakic M, Monje A, Radovanovic S, et al. Inflammatory biomarkers associated with peri-implantitis: a systematic review. Clin Oral Investig. 2022.

4. Salomón V, Yáñez A, et al. Immuno-inflammatory aspects in peri-implant diseases. Int J Mol Sci. 2021;22(12):6418.
5. Theodoridis C, Doulkeridou C, Menexes GC, Vouros I. Comparison of RANKL and OPG levels in peri-implant crevicular fluid between healthy and diseased peri-implant tissues: A systematic review and meta-analysis. Clinical Oral Investigations. 2021;26(5):1403–1414.

32 MASTERING IMPLANT SURGERY: PRINCIPLES FOR LONG TERM SUCCESS

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Introduction
To present the biological and surgical principles that determine long-term success in implant therapy and to provide a practical framework for clinical decision-making in esthetic and functionally demanding cases.

Materials and Methods
A narrative review of contemporary evidence and clinical protocols was performed, focusing on implant site development, three-dimensional implant positioning, hard and soft tissue management, and prosthetically driven treatment planning. Current approaches to immediate, early, and delayed implant placement, ridge preservation, bone augmentation, atraumatic extraction, and provisionalization were analyzed within a biologically oriented treatment concept. Clinical cases were used to illustrate the application of these principles.

Results
Long-term implant success was strongly associated with accurate diagnosis, adequate buccal bone thickness, favorable soft tissue phenotype, and prosthetically guided implant positioning. Immediate and early implant placement may provide predictable outcomes when appropriate case selection and risk assessment are applied. Ridge preservation and augmentation procedures using contemporary biomaterials contributed to maintaining peri-implant hard and soft tissue stability. Surgical precision combined with periodontal and prosthetic integration reduced the risk of buccal bone loss, soft tissue recession, and esthetic complications.

Conclusions
Successful implant therapy depends on the integration of biological principles, comprehensive treatment planning, and meticulous surgical execution. Technology enhances treatment possibilities; however, long-term outcomes remain primarily determined by sound clinical decision-making before implant placement. Implant success begins with diagnosis and planning rather than surgery alone.

Keywords: *Implant surgery; Implant placement; Peri-implant tissues; Treatment planning.*

References
- International Team for Implantology. ITI Treatment Guide, Volume 15. Berlin: Quintessence Publishing; 2023.
- Hämmerle Christoph H. F., et al. Evidence-based knowledge on immediate implant placement and loading. Clin Oral Implants Res. 2022.
- Avila-Ortiz Gustavo, et al. Soft tissue phenotype modification and peri-implant outcomes: systematic review. J Clin Periodontol. 2023.
- Tonetti Maurizio S., et al. Contemporary concepts in implant therapy and peri-implant health. J Clin Periodontol. 2024.
- European Federation of Periodontology. Clinical Practice Guidelines for Implant Therapy. 2025.

33 SHORT IMPLANTS VERSUS BONE AUGMENTATION IN THE ATROPHIC POSTERIOR MAXILLA: AN EVIDENCE-BASED APPROACH TO CLINICAL DECISION-MAKING

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Introduction

This presentation evaluates the role of short implants (≤8 mm) as an alternative to sinus floor elevation and bone augmentation in the rehabilitation of the atrophic posterior maxilla. The aim is to provide an evidence-based clinical decision-making approach based on residual bone height, bone quality, and prosthetic considerations.

Materials and Methods

A narrative review of recent randomized controlled trials, systematic reviews, and meta-analyses published from 2021 onward was conducted using PubMed and Scopus databases. Evidence regarding implant survival, marginal bone loss, biological and prosthetic complications, patient morbidity, and treatment duration was analyzed. Clinical cases and previously published research on short implants and sinus augmentation were also reviewed to support the proposed treatment algorithm.

Results

Current evidence demonstrates that short implants show survival rates comparable to standard implants placed with sinus floor elevation in medium- and long-term follow-up. Short implants were associated with reduced surgical morbidity, shorter treatment times, lower costs, and fewer postoperative complications. Favorable outcomes were consistently reported in cases with residual bone height sufficient for placement of implants ≥6 mm. However, bone augmentation remains advantageous in severe vertical atrophy, unfavorable crown-to-implant ratios, and complex prosthetic situations.

Conclusions

Short implants represent a predictable and minimally invasive first-line treatment option for selected cases of atrophic posterior maxilla. Bone augmentation procedures should be reserved for specific anatomical and prosthetic indications to optimize long-term clinical outcomes while minimizing patient morbidity.

Keywords: *Marginal bone loss; graftless rehabilitation; minimally invasive implantology; crown-to-implant ratio; treatment planning; randomized controlled trials*

References

- Monje A, Chan HL, Fu JH, Suarez F, Galindo-Moreno P, Wang HL. Short dental implants versus longer implants placed in augmented bone area: a systematic review and meta-analysis. Journal of Dentistry. 2021
- Thoma DS, Zeltner M, Hüsler J, Hämmerle CHF, Jung RE. EAO consensus conference: short implants versus sinus floor elevation procedures in the posterior maxilla. Clinical Oral Implants Research. 2021
- Ravidà A, Wang IC, Barootchi S, Askar H, Tavelli L, Wang HL. Meta-analysis comparing clinical outcomes of short implants and standard implants with sinus floor elevation. International Journal of Oral & Maxillofacial Implants. 2022
- Stacchi C, Lombardi T, Ottonelli R, Berton F, Perinetti G, Traini T. Short implants in partially edentulous posterior maxilla: long-term outcomes and complications. Clinical Implant Dentistry and Related Research. 2022
- Papaspyridakos P, De Souza A, Vazouras K, Gholami H, Pagni G, Weber HP. Survival rates of short dental implants and sinus augmentation procedures: systematic review and network meta-analysis. Journal of Prosthodontics. 2023

34 PERI-IMPLANTITIS: PREVENTION, DIAGNOSIS AND STRATEGIES FOR THE LONG-TERM PROTECTION OF DENTAL IMPLANTS

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Introduction
This study aims to provide a contemporary literature-based overview of peri-implantitis, focusing on prevention, diagnosis, and therapeutic strategies for the long-term protection and maintenance of dental implants.

Materials and Methods
A narrative review of contemporary scientific literature was conducted using studies published in international journals related to implantology and periodontology. Clinical studies, systematic reviews, and clinical guidelines addressing peri-implantitis prevention, diagnosis, and treatment were analyzed. Included studies evaluated etiological factors, diagnostic approaches such as peri-implant probing depth, bleeding on probing, and radiographic bone loss assessment, as well as non-surgical and surgical treatment modalities. Clinical cases from our practice were also used to support findings reported in the literature.

Results
Peri-implantitis is a chronic inflammatory disease associated with progressive peri-implant bone loss and may ultimately lead to implant failure if left untreated. The condition is primarily related to bacterial biofilm accumulation, although additional risk factors include history of periodontitis, poor oral hygiene, smoking, diabetes mellitus, and prosthetic or surgical complications. Current evidence demonstrates that long-term implant protection depends on early diagnosis, regular professional maintenance, patient education, and effective control of local and systemic risk factors. Both non-surgical and surgical therapies may improve clinical outcomes, while multidisciplinary management and periodic monitoring are essential for maintaining implant stability.

Conclusions
Peri-implantitis remains a major biological complication affecting dental implants. Early detection, preventive maintenance, and individualized therapeutic strategies are fundamental for preventing disease progression and ensuring the long-term success of implant-supported rehabilitations.

Keywords: *Peri-implantitis; dental implants; periodontitis; implant maintenance; peri-implant disease; implant rehabilitation*

References
1. Schwarz, F.; Derks, J.; Monje, A.; Wang, H.L. Peri-implantitis. J. Clin. Periodontol. 2021, 48(Suppl. 21), 238–250.
2. Berglundh, T.; Armitage, G.; Araujo, M.G.; et al. Peri-implant diseases and conditions: Consensus report of workgroup 4 of the 2017 World Workshop. J. Periodontol. 2021, 92(Suppl. 1), S313–S318.
3. Monje, A.; Blasi, G. Significance of keratinized mucosa around dental implants: A systematic review and meta-analysis. J. Periodontol. 2022, 93, 174–188.
4. Renvert, S.; Persson, G.R.; Pirih, F.Q.; Camargo, P.M. Peri-implant health, peri-implant mucositis, and peri-implantitis: Case definitions and diagnostic considerations. Clin. Oral Implants Res. 2022, 33(Suppl. 23), 7–15.
5. Heitz-Mayfield, L.J.A.; Salvi, G.E. Peri-implant mucositis and peri-implantitis: A current understanding of their diagnoses and clinical implications. Int. J. Oral Maxillofac. Implants 2021, 36, 569–578.

35 GINGIVITIS IN ORTHODONTIC PATIENTS

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Introduction
This study aimed to evaluate the prevalence and severity of gingivitis among orthodontic patients and to assess the influence of appliance type and oral hygiene practices on gingival health.

Materials and Methods
A descriptive comparative study was conducted on 50 orthodontic patients aged 12–30 years who had been undergoing orthodontic treatment for at least three months. Clinical periodontal parameters, including the Gingival Index (GI), Plaque Index (PI), and Bleeding on Probing (BOP), were recorded during clinical examinations. Data regarding oral hygiene habits were collected using a structured questionnaire. Statistical analysis was performed to determine associations between oral hygiene status, appliance type, and gingival inflammation.

Results
Approximately 70% of the participants presented clinical signs of gingivitis. Patients treated with fixed orthodontic appliances demonstrated a higher prevalence of gingival inflammation (75%) compared with those wearing removable appliances (45%). A strong positive correlation was observed between plaque accumulation and gingival inflammation. Increased bleeding on probing was significantly associated with poor oral hygiene practices. The findings indicate that fixed appliances create plaque-retentive areas that may compromise effective biofilm control and contribute to gingival inflammation.

Conclusions
Gingivitis is a common complication among orthodontic patients, particularly those treated with fixed appliances. Effective plaque control, regular professional monitoring, and continuous patient education regarding oral hygiene are essential for maintaining periodontal health throughout orthodontic treatment. Preventive measures should be emphasized to minimize gingival inflammation and improve treatment outcomes.

Keywords: *gingivitis, orthodontic patients, plaque index, gingival inflammation, fixed appliances, oral hygiene.*

References
- Papadopoulou C, Karamani I, Gkourtsogianni S, et al. A systematic review on the effectiveness of organic unprocessed products in controlling gingivitis in patients undergoing orthodontic treatment with fixed appliances. Clin Exp Dent Res. 2021;7(5):664–671.
- Oikonomou E, Foros P, Tagkli A, et al. Impact of Aligners and Fixed Appliances on Oral Health during Orthodontic Treatment: A Systematic Review and Meta-Analysis. Oral Health Prev Dent. 2021;19:659–672.
- Karamani I, Kalimeri E, Seremidi K, et al. Chlorhexidine Mouthwash for Gingivitis Control in Orthodontic Patients: A Systematic Review and Meta-Analysis. Oral Health Prev Dent. 2022;20:279–294.
- Di Spirito F, Amato A, Di Palo MP, et al. Periodontal Management in Periodontally Healthy Orthodontic Patients with Fixed Appliances: An Umbrella Review. Dentistry Journal. 2023;11(2):35.
- ElNaghy R, Al-Qawasmi R, Hasanin M. Does orthodontic treatment using clear aligners and fixed appliances affect periodontal status differently? Evidence-Based Dentistry. 2023;24:73–74.

36 CLINICAL OUTCOMES OF NON-SURGICAL PERIODONTAL THERAPY: A RETROSPECTIVE ANALYSIS OF 35 PATIENTS

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Introduction
Non-surgical periodontal therapy remains the cornerstone of periodontal treatment. However, clinical outcomes in daily practice are not always systematically evaluated and documented. The aim of this study is to evaluate clinical changes following non-surgical periodontal therapy using initial and re-evaluation periodontal charts.

Materials and Methods
A retrospective analysis was conducted on 35 patients undergoing non-surgical periodontal therapy in a private clinical setting. Periodontal parameters, including probing depth (PPD), bleeding on probing (BOP), and plaque index, were recorded at baseline and at re-evaluation. All patients received standardized non-surgical treatment protocols along with oral hygiene instructions. Re-evaluation was performed after a defined follow-up period.

Results
Data collection has been completed and statistical analysis is currently in progress. Preliminary observations indicate a consistent reduction in key periodontal parameters following therapy.

Conclusions
This study aims to provide clinical insight into the effectiveness of non-surgical periodontal therapy in routine clinical practice and supports its role as a predictable treatment approach. Final results will be presented at the conference.

Keywords: *Non-surgical periodontal therapy; scaling and root planing, probing pocket depth (PPD), bleeding on probing (BOP), periodontal clinical outcomes.*

References
1. S. Sabatini et al. (2024), Effectiveness of ultrasonic and manual instrumentation in non-surgical periodontal therapy: systematic review.
2. M. Mensi et al. (2024), Adjunctive chlorhexidine gel in non-surgical periodontal therapy: systematic review and meta-analysis.
3. A. Pardo et al. (2025), Hyaluronic acid as adjunct to non-surgical periodontal therapy: systematic review and meta-analysis.
4. Trombelli L, Farina R, Silva CO, Tatakis DN (2021), Plaque-induced gingivitis: Case definition and diagnostic considerations, Journal of Periodontology.
5. Jepsen S, Caton JG, Albandar JM, et al. (2021), Periodontal manifestations of systemic diseases and conditions: Consensus report, Journal of Clinical Periodontology.
6. Suárez-López Del Amo F, Yu SH, Wang HL (2022), Non-surgical therapy for peri-implant diseases and periodontitis: Systematic review, Journal of Periodontology.

37 OBESITY AND ORAL HEALTH IN PEDIATRIC PATIENTS

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Introduction

This study aimed to evaluate the association between obesity and oral health status in children, as well as the influence of oral hygiene habits and lifestyle factors on the development of periodontal diseases and dental caries.

Materials and Methods

A total of 83 children aged 5–11 years were enrolled and divided into two groups: a study group (n = 44; overweight/obese children) and a control group (n = 39; normal-weight children).

All participants completed a structured questionnaire assessing lifestyle habits, dietary behaviors, and home oral hygiene practices. Clinical examinations were performed according to World Health Organization (WHO) criteria to assess the Decayed, Missing, and Filled Teeth (DMFT) index, Full-Mouth Plaque Score (FMPS), and Full-Mouth Bleeding Score (FMBS). Statistical analysis was conducted using chi-square and Student's t-tests, with a significance level of $p \leq 0.05$. Following baseline assessment, participants received oral hygiene instructions and motivational interventions promoting improved oral care and balanced nutrition. Clinical re-evaluation was conducted after 21 days.

Results

Obese children demonstrated significantly higher levels of gingival inflammation and dental plaque accumulation compared with normal-weight children, as evidenced by higher FMBS and FMPS values ($p < 0.05$). No statistically significant differences were observed in DMFT scores between groups, although a higher trend was noted among older children. Furthermore, obese participants exhibited more sedentary lifestyles and less favorable dietary habits.

Conclusions

Obesity appears to be a risk factor for periodontal disease in pediatric patients, whereas its relationship with dental caries remains less conclusive. Early preventive interventions and improved oral hygiene practices may reduce the negative impact of obesity on oral health. A multidisciplinary approach is essential for the prevention and management of both obesity and oral diseases.

Keywords: *Obesity; Oral health; Dental caries; Gingival inflammation; Oral hygiene.*

References

1. Pediatric Dentistry Panagiotou E, Agouropoulos A, Vadiakas G, et al. Oral health of overweight and obese children and adolescents: a comparative study with a multivariate analysis of risk indicators. European Archives of Paediatric Dentistry. 2021;22(5):861–868. doi:10.1007/s40368-021-00643-0

2. Pediatric Dentistry Tengku H TNN, Peh WY, Shoaib LA, et al. Oral Diseases and Quality of Life between Obese and Normal Weight Adolescents: A Two-Year Observational Study. Children (Basel). 2021;8(6):435. doi:10.3390/children8060435

3. Pediatric Dentistry Yoldaş MA, Yılmazel SV, Bolu S, et al. The relationship between blood biochemical parameters and oral health in children with obesity/overweight. British Dental Journal. 2023;235:968–972. doi:10.1038/s41415-023-6593-z

4. Pediatric Dentistry Popescu DM, Onea R, Maglaviceanu CF, et al. Oral Health, Nutritional-Related Patterns and Body Mass Index in Children. Current Health Sciences Journal. 2021;47(4):575–580. doi:10.12865/CHSJ.47.04.14

5. Public Health Dentistry Barbosa MCF, Reis CLB, Lopes CMCF, et al. Assessing the Association Between Nutritional Status, Caries, and Gingivitis in Schoolchildren: A Cross-Sectional Study. Global Pediatric Health. 2021;8:2333794X211001237. doi:10.1177/2333794X211001237

38 IMMEDIATE IMPLANT PLACEMENT AND IMMEDIATE LOADING OF A SCREW-RETAINED FULL-ARCH PROSTHESIS IN THE MAXILLA USING A FULLY DIGITAL WORKFLOW: A CASE REPORT

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Introduction

This case report describes a fully digital and prosthetically driven workflow for immediate implant placement and immediate loading of a screw-retained full-arch prosthesis in the maxilla of a patient with severely compromised dentition.

Materials and Methods

A 62-year-old male patient presented with advanced generalized periodontitis and acute endodontic-periodontal infection associated with tooth 22. Atraumatic extraction of teeth 11, 12, 13, 14, 16, 22, 23, 24, and 26 was performed. Six MegaGen implants were immediately placed in sites 12, 14, 16, 22, 24, and 26. Primary stability of approximately 30 Ncm was achieved in all implants, permitting immediate functional loading. Simultaneous ridge reservation was carried out using Cerabone® xenogeneic bone substitute without membrane coverage. A fully digital workflow was implemented using intraoral scanning with a Dentsply Sirona intraoral scanner and photogrammetry with the iMetric system for accurate three-dimensional implant position recording and prosthetically driven prosthesis design. Within 24 hours, a screw-retained full-arch PMMA prosthesis was delivered and immediately loaded.

Results

Early postoperative evaluation demonstrated favorable soft tissue healing, satisfactory prosthetic function, and restoration of esthetics and occlusal stability. No immediate biological or mechanical complications were observed during the early follow-up period. The digital workflow enabled accurate implant position transfer and efficient fabrication of the definitive provisional prosthesis with passive fit and predictable occlusion.

Conclusions

Immediate implant placement combined with digitally guided immediate loading of a screw-retained full-arch prosthesis may represent a reliable and efficient treatment option in carefully selected patients. The integration of intraoral scanning and photogrammetry can enhance prosthetic accuracy and streamline clinical workflow when strict surgical and prosthetic protocols are followed.

Keywords: *Immediate implant placement; immediate loading; full-arch prosthesis; digital workflow; photogrammetry; PMMA prosthesis*

References

1. Makarov, N.; Pompa, G.; Papi, P. Computer-assisted implant placement and full-arch immediate loading with digitally prefabricated provisional prostheses without cast: A prospective pilot cohort study. Int. J. Implant Dent. 2021, 7, 80.

2. Testori, T.; Goker, F.; Scaini, R.; et al. Simplified digital protocol for fully edentulous immediate implant placement and loading: A report of 10 consecutive cases. Int. J. Periodontics Restorative Dent. 2021, 41, 33–40.

3. Capparé, P.; Ferrini, F.; Ruscica, C.; et al. Digital versus traditional workflow for immediate loading in single-implant restoration: A randomized clinical trial. Biology (Basel). 2021, 10, 1281.

4. Yang, J.; Liu, Q.; Yue, Z.; et al. Digital workflow for full-arch immediate implant placement using a stackable surgical guide fabricated using SLM technology. J. Prosthodont. 2021.

5. Tallarico, M.; Canullo, L.; Xhanari, E.; Meloni, S.M. Immediate restoration of fixed full-arch prostheses placed on implants in both fresh and healed sockets using the flat one-bridge technique: A 7-year retrospective study. BMC Oral Health. 2021, 21, 617.

39 IMMEDIATE IMPLANT PLACEMENT IN PERIODONTALLY COMPROMISED POSTERIOR TEETH: A CLINICAL REPORT

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Introduction

Immediate implant placement at the time of tooth extraction has become a widely accepted treatment due to its clinical advantages, with evidence showing survival rates comparable to delayed protocols . Despite this, its application in sites with periodontal inflammation or structural compromise remains clinically challenging.

Materials and Methods

A 65-year-old patient presented with Grade II mobility according to Miller Tooth mobility index, affecting teeth 14 and 15, both restored with zirconia crowns. CBCT imaging confirmed a root fracture in tooth 15 and the presence of periodontal inflammation, indicating extraction. Atraumatic extractions were performed with preservation of the buccal wall of alveolar bone. Post-extraction assessment revealed adequate bone volume and quality (D2) and absence of acute infection, meeting the criteria for immediate implant placement to ensure successful results . Primary stability was achieved via apical anchorage. Guided bone regeneration (GBR) using collagen membrane was applied followed by immediate placement of healing abutment to preserve the tissue structure . All part of a conversional healing protocol before the delivery of screw-retained monolithic zirconia crowns after three and a half months.

Results

Clinical and radiographic evaluation at three and a half months demonstrated successful osseointegration and stability of both implants. Healing progressed without biological or mechanical complications, allowing for successful prosthetic rehabilitation, achieving both satisfactory functional and aesthetic outcomes.

Conclusions

Careful evaluation of post-extraction periodontal conditions, bone availability, and absence of active infection, in line with clinical protocols, supports appropriate clinical decision-making, increasing the predictability of successful outcomes for the patient.

Keywords: *Immediate implant, atraumatic extraction, primary stability, infection, osteointegration.*

References

1.Liñares A, Dopico J, Gabriel Leonardo Magrin, Blanco J. Critical review on bone grafting during immediate implant placement. Periodontology 2000. 2023 Sep 1.

2. Campi M, Leitão-Almeida B, Pereira M, Awad SJ, Levin L, Campos J, et al. Immediate implant placement in damaged extraction sockets: a systematic review and meta-analysis of randomized controlled trials. Quintessence International [Internet]. 2025 [cited 2026 Apr 30];56(1):34.

3. Liu J, Hua F, Zhang H, Hu J. Influence of using collagen on the soft and hard tissue outcomes of immediate dental implant placement: A systematic review and meta-analysis. Journal of stomatology, oral and maxillofacial surgery [Internet]. 2023 Feb;124(1S):101385.

4. Esteves MET, Bianchini RMG, Gonzatti JPP, Scriboni AB. Guided bone regeneration in implant dentistry: a systematic review. MedNEXT Journal of Medical and Health Sciences. 2023 Jul 12;4(S2).

5. Mickevičius, I., Astramskaitė, E. and Janužis, G., 2024. A systematic review of the implant success rate following immediate implant placement in infected sockets. Journal of Current Research in Oral Surgery, 4, pp.20-31.

40 IMPLANTOLOGY AND NANOTECHNOLOGY: AN IN VITRO STUDY

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Introduction

Peri-implantitis remains a major complication in implant dentistry due to bacterial biofilm formation around implant surfaces. This study aimed to evaluate whether surface modification of zirconia implants using polyelectrolyte multilayers (PEM) combined with zinc oxide (ZnO) nanoparticles and calcium carbonate ($CaCO_3$) could enhance antibacterial properties and improve surface bioactivity.

Materials and Methods

Zirconia specimens were divided into four groups: untreated zirconia, zirconia coated with PEM, zirconia with PEM containing ZnO nanoparticles, and zirconia with PEM incorporating both ZnO and $CaCO_3$. Surface wettability, topography, and electrokinetic behavior were analyzed.
Antibacterial activity against Staphylococcus aureus and Staphylococcus epidermidis was evaluated using scanning electron microscopy and bacterial adhesion quantification.

Results

Surface modifications significantly altered physicochemical properties and reduced bacterial adhesion. PEM coatings alone decreased microbial colonization, while the addition of ZnO nanoparticles and $CaCO_3$ further enhanced the antibacterial effect. Modified zirconia surfaces demonstrated approximately 50% reduction in S. aureus adhesion and up to 75% reduction in S. epidermidis colonization compared with untreated zirconia. These findings were associated with changes in surface roughness and electrical charge that limited bacterial attachment and promoted improved bioactivity.

Conclusions

PEM coatings incorporating ZnO nanoparticles and $CaCO_3$ significantly improve the antibacterial behavior of zirconia implant surfaces and may support enhanced biological integration. Advanced surface modification strategies could contribute to the development of zirconia implants with reduced risk of peri-implantitis and improved long-term clinical outcomes.

Keywords: *Zirconia implants; surface modification; nanoparticles; antibacterial effect; biointegration*

References

1. Săndulescu, M., Sîrbu, V. D., & Popovici, I. A. (2023). Bacterial Species Associated with Peri-Implant Disease—A Literature Review. Germs, 13(4), 352-361. https://doi.org/10.18683/germs.2023.1405

2. Iușan SAL, Lucaciu OP, Petrescu NB, Mirică IC, Toc DA, Albu S, Costache C. The Main Bacterial Communities Identified in the Sites Affected by Periimplantitis: A Systematic Review. Microorganisms. 2022 Jun 16;10(6):1232. doi: 10.3390/microorganisms10061232. PMID: 35744750; PMCID: PMC9228476
3. Kang, B., Lan, D., Liu, L., Dang, R., Yao, C., Liu, P., Ma, F., Qi, S., & Chen, X. (2022). Antibacterial Activity and Bioactivity of Zn-Doped TiO2 Coating for Implants. Coatings, 12(9), 1264. https://doi.org/10.3390/coatings12091264
4. Rehner, A. M. G., Tudorache, D.-I., Bîrcă, A. C., Nicoară, A. I., Niculescu, A.-G., Holban, A. M., Hudiță, A., Bîclesanu, F. C., Balaure, P. C., Pangică, A. M., Grumezescu, A. M., & Croitoru, G.-A. (2025). Antibacterial Properties of PMMA/ZnO(NanoAg) Coatings for Dental Implant Abutments. Materials, 18(2), 382. https://doi.org/10.3390/ma18020382
5. Zhang Y, Fan Z, Xing Y, Jia S, Mo Z and Gong H (2022) Effect of microtopography on osseointegration of implantable biomaterials and its modification strategies. Front. Bioeng. Biotechnol. 10:981062. doi: 10.3389/fbioe.2022.981062

41 INFERIOR ALVEOLAR NERVE LATERALIZATION AND SHORT IMPLANT APPLICATION FOR IMPLANT REHABILITATION: A CASE REPORT

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Introduction
This case report aimed to evaluate the clinical outcomes of two different implant rehabilitation approaches in the bilateral posterior mandible: inferior alveolar nerve lateralization and short implant placement.

Materials and Methods
A 40-year-old systemically healthy female patient presented with bilateral posterior mandibular tooth loss and severe vertical bone resorption. Radiographic evaluation revealed residual bone heights of approximately 4 mm on the right side and 6.5 mm on the left side. Inferior alveolar nerve lateralization was performed on the right posterior mandible, while a short implant approach was selected for the left side. Under local anesthesia, a mucoperiosteal flap was elevated and a lateral bony window was prepared using piezosurgery. The inferior alveolar nerve was carefully retracted laterally, and a Euroteknika implant was placed. A Bicon short implant system was used on the left side. No graft or membrane was utilized.

Results
Transient postoperative paresthesia associated with nerve lateralization resolved completely within approximately three months. Prosthetic loading was performed after four months of healing. During the 9-month follow-up period, no implant failure, infection, or biological complications were observed. Both implants demonstrated satisfactory clinical stability and functional success.

Conclusions
Inferior alveolar nerve lateralization represents a reliable treatment option in severely atrophic posterior mandibles when standard implant placement is not feasible. In cases with moderate vertical bone deficiency, short implants may provide a less invasive and more conservative alternative with favorable clinical outcomes.

Keywords: *Inferior alveolar nerve lateralization; short implant; dental implant; posterior mandible; mandibular atrophy; paresthesia*

References

- Periodontology Romanos GE. Severe Atrophy of the Posterior Mandible and Inferior Alveolar Nerve Transposition. International Journal of Periodontics & Restorative Dentistry. 2021;41(5):e199-e204
- Tomazi MA, Gerzson AS, Menuci Neto A, da Costa ALP. In-Block Lateralization as a New Technique for Mobilization of the Inferior Alveolar Nerve: A Technique Case Series. Journal of Oral Implantology. 2021
- Hong JY. Clinical Effectiveness of Short Implants in Posterior Regions: A Review. Journal of the Korean Dental Association. 2021;59(4):240–246
- Marty P, Roulot A, Ferri J, Nicot R. Inferior Alveolar Nerve Repositioning Surgical Techniques and Outcomes – A Systematic Review. Journal of Stomatology, Oral and Maxillofacial Surgery. 2024;125(1):101631
- Neurosensory Disturbances Following Inferior Alveolar Nerve Relocation and Implant Placement: A Systematic Review and Meta-Analysis. Journal of Clinical Medicine. 2025

42 MANAGEMENT OF IMPLANT MIGRATION INTO THE MAXILLARY SINUS USING FESS AFTER SINUS AUGMENTATION: A CASE REPORT

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Introduction

Sinus lift procedures are widely used surgical approaches that enable dental implant placement in patients with severe bone resorption in the posterior maxilla. Although the procedure is generally predictable, implant migration into the maxillary sinus remains a rare clinical complication. This case report presents a case of implant migration into the maxillary sinus following sinus lift surgery and discusses its management using a minimally invasive endoscopic approach.

Materials and Methods

A 56-year-old female with severe maxillary atrophy underwent sinus lift surgery, and placement of seven implants was planned. In the first stage, a sinus lift was performed in the left posterior maxilla to achieve vertical augmentation, and a PTFE membrane was applied for horizontal bone gain. Membrane exposure occurred in the second postoperative month; however, in the absence of infection or symptoms, the patient was followed until surgery. After four months, implant placement was initiated.

During the procedure, due to insufficient primary stability in the #24 region, one implant migrated into the maxillary sinus. Retrieval with sinus lavage and the Valsalva maneuver was unsuccessful; therefore, the implant was subsequently removed via a minimally invasive FESS approach through the canine fossa.

Results

Postoperative recovery was uneventful. One month later, implants were placed in regions 12, 13, 14, and 16 in the right maxilla, and an additional implant was placed in region 22 on the left side to replace the failed implant. The patient showed no complications during the two-month follow-up period and was found to be clinically stable.

Conclusions

Implant migration into the maxillary sinus is a rare complication. The minimally invasive FESS approach offers an effective and safe treatment option for such cases. Compared with conventional intraoral approaches, FESS allows superior visualization and access with minimal disruption to surrounding bone and grafted tissues, thereby reducing surgical morbidity and preserving the augmented site.

Keywords: *Maxillary sinus; dental implants; implant migration; sinus lifting; FESS; atrophic maxilla*

References

1. Mahmood Hashemi, H., Mohammadi, S., & Razmara, F. (2024). The Causes of Dental Implant Migration into the Maxillary Sinus: A Case Series Study from 25 Years of Experience. Journal of dentistry (Shiraz, Iran), 25(1), 86–90. https://doi.org/10.30476/dentjods.2023.95807.1898

2. Wojtera, B., Woźna, A., & Komisarek, O. (2022). The Management of Foreign Body Displacement into the Maxillary Sinus as a Complication of Maxillofacial Interventions: Systematic Review. Indian journal of otolaryngology and head and neck surgery : official publication of the Association of Otolaryngologists of India, 74(Suppl 2), 1088–1093. https://doi.org/10.1007/s12070-020-02153-9

3. Liu, D., Jang, S., Suh, J. D., Borrelli, M., Nasrollahi, T., Raskin, J., & Ference, E. H. (2022). Retained Dental Implant in the Maxillary Sinus. Ear, nose, & throat journal, 101(10_suppl), 6S–11S. https://doi.org/10.1177/01455613221121043

4. Alshamrani, A. M., Mubarki, M., Alsager, A. S., Alsharif, H. K., AlHumaidan, S. A., & Al-Omar, A. (2023). Maxillary Sinus Lift Procedures: An Overview of Current Techniques, Presurgical Evalua on, and Complica ons. Cureus, 15(11), e49553. https://doi.org/10.7759/cureus.49553

5. Núñez-Márquez, E., Salgado-Peralvo, A. O., Peña-Cardelles, J. F., Kewalramani, N., Jiménez-Guerra, A., & Velasco-Ortega, E. (2021). Removal of a migrated dental implant from a maxillary sinus through an intraoral approach: A case report. Journal of clinical and experimental den stry, 13(7), e733–e736. https://doi.org/10.4317/jced.58350

43 ACCURACY OF GUIDED IMPLANT PLACEMENT: AN IN-VITRO COMPARATIVE STUDY OF METAL-SLEEVED AND SLEEVELESS GUIDES

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Introduction

Guided implant placement has well-established accuracy compared to freehand techniques, but deviations are still noticed clinically. Although some studies show that both metal-sleeved and sleeveless guides have comparable outcomes, the combined effect of guide design and implant length remains inadequately studied under controlled in-vitro conditions, which creates uncertainty regarding their effect on placement accuracy.

Materials and Methods

Forty implants were placed in mandibular models using surgical guides. Implants were equally divided across groups according to implant length (10 mm and 12 mm) and guide type (sleeved and sleeveless), forming four groups (n=10 each). Deviations between planned and actual implant positions were assessed to measure angular deviation and linear deviations at the platform and apex, including vertical, mesiodistal, and buccolingual components. Data were analyzed using linear mixed-effects models with a significance level set at $\alpha = 0.05$.

Results

High accuracy was observed in both designs, with ~2° angular deviation and submillimeter linear deviations. Shorter implants showed greater lateral deviations. Sleeved guides resulted in higher vertical deviations. A significant interaction was found for mesiodistal apical deviation. No differences were noted in angular or buccolingual deviations.

Conclusion

Both guide designs were highly accurate. Implant length mainly affects lateral accuracy, while guide design influences vertical deviation.

Keywords: *Guided implant surgery; surgical guides; metal sleeves; sleeveless guides; implant length.*

References

- Oh KC, Shim JS, Park JM. In vitro comparison between metal sleeve-free and metal sleeve-incorporated 3D-printed implant surgical guides. Materials (Basel). 2021;14(3):615.
- Adams CR, Ammoun R, Deeb GR, Bencharit S. Influence of metal guide sleeves on the accuracy and precision of dental implant placement using guided surgery: an in vitro study. J Prosthodont. 2023;32(1):60–7.
- Ballesteros J, Tovar N, Diniz M, Kang J, Coelho PG. Accuracy of sleeve-free versus sleeved surgical guides: an in vitro comparative study. Clin Implant Dent Relat Res. 2025;27(2):150–9.
- Atay E, Blum K, Zenthöfer A, Beuer F, Gilde H, Hey J. Evaluation of the accuracy of fully guided implant placement by undergraduate students and postgraduate dentists: a comparative prospective clinical study. Int J Implant Dent. 2024; 10:8.
- Galante, Jorge M., and Nicolás A. Rubio, eds. Digital Dental Implantology: From Treatment Planning to Guided Surgery. Cham, Switzerland: Springer, 2021.

44 COMPARATIVE EVALUATION OF TRUENESS AND PRECISION OF FULLY GUIDED DENTAL IMPLANT PLACEMENT USING SLEEVE AND SLEEVELES SURGICAL GUIDES IN BOUNDED VERSUS FREE-END SADDLE MODELS: AN IN VITRO STUDY

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Introduction

This study evaluated the trueness and precision of implant placement using sleeved and sleeveless surgical guides in bounded and free-end saddle models under in vitro conditions.

Materials and Methods

Forty implants were virtually planned and placed in 3D-printed mandibular models simulating bounded and free-end edentulous conditions using fully guided protocols. Samples were divided into four groups (n = 10): bounded sleeveless, free-end sleeveless, free-end sleeved, and bounded sleeved. Surgical guides were digitally designed using coDiagnostiX software. After implant placement, scanbodies were attached and models were scanned with an intraoral scanner. Postoperative STL files were superimposed onto preoperative plans to assess placement accuracy. Linear and angular deviations were measured and analyzed using linear mixed-effects models ($\alpha = 0.05$).

Results

Accuracy was observed across all groups. In bounded conditions, sleeveless guides achieved accuracy comparable to sleeved guides. However, the sleeveless free-end group demonstrated significantly higher global apical deviation (1.522 ± 0.493 mm), angular deviation ($4.31 \pm 1.36°$), and buccolingual deviation (1.783 ± 0.930 mm) compared to all other groups ($p < 0.05$). A significant interaction between guide design and support configuration was identified for seven of twelve parameters, with global apical deviation showing the largest effect size ($\eta^2_p = 0.487$). The sleeved free-end group showed precision comparable to bounded groups, while directional analysis revealed consistent apical and lingual deviations in the sleeveless free-end group.

Conclusions

Sleeveless guides may be a viable alternative in bounded conditions; however, their predictability decreases in free-end situations, warranting further investigation.

Keywords: *Sleeved surgical guides; sleeveless surgical guides; bounded saddle; free-end saddle; dental implants*

References

1. Werny, J.G.; Frank, K.; Fan, S.; et al. Freehand vs. computer-aided implant surgery: A systematic review and meta-analysis—Part 1: Accuracy. Int. J. Implant Dent. 2025, 11, 35.

2. Marquez Bautista, N.; Meniz-Garcia, C.; Lopez-Carriches, C.; Sanchez-Labrador, L.; Cortes-Breton Brinkmann, J.; Madrigal Martinez-Pereda, C. Accuracy of different systems of guided implant surgery: A systematic review. Appl. Sci. 2024, 14, 11479.

3. Adams, C.R.; Ammoun, R.; Deeb, G.R.; Bencharit, S. Influence of metal guide sleeves on the accuracy and precision of dental implant placement: An in vitro study. J. Prosthodont. 2023, 32, 62–70.

4. Hang, J.; Guentsch, A. Are sleeves necessary in static computer-assisted implant surgery? A comparative in vitro analysis. Clin. Oral Implants Res. 2025, 36, 117–126.

5. Ballesteros, J.; Vasquez, S.; Revilla-Leon, M.; Gomez-Polo, M. A comparative study on the accuracy of implant placement using 3D-printed and milled guides without metal sleeves. Clin. Implant Dent. Relat. Res. 2025, 27, e70072.

45 PERIODONTAL CONSIDERATIONS IN IMPLANT DENTISTRY: STRATEGIES FOR PREVENTION AND LONG-TERM SUCCESS

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Introduction

This narrative review aimed to evaluate the influence of periodontal status on implant outcomes, focusing on risk factors, preventive strategies, and long-term maintenance protocols in implant dentistry.

Materials and Methods

A narrative review of contemporary literature was conducted to analyze the relationship between periodontal health and peri-implant tissue stability. Evidence regarding biological complications associated with dental implants was reviewed, emphasizing modifiable patient-related and treatment-related risk factors affecting implant survival and complication rates. Preventive periodontal protocols, maintenance strategies, and supportive periodontal therapy approaches were also evaluated.

Results

Dental implant therapy is a predictable treatment modality for replacing missing teeth; however, long-term success depends on the health and stability of periodontal and peri-implant tissues. Evidence shows that a history of periodontal disease, poor plaque control, smoking, and uncontrolled systemic conditions are strongly associated with increased risk of peri-implant diseases, including peri-implant mucositis and peri-implantitis. Pre-implant periodontal therapy plays a key role in reducing biological complications and establishing favorable peri-implant conditions before implant placement. Individualized maintenance programs, regular professional follow-up, and reinforced oral hygiene instruction improve peri-implant tissue stability and long-term implant survival. Early identification and management of risk factors significantly contribute to preventing peri-implant disease progression and implant failure.

Conclusions

Integrating periodontal principles into implant treatment planning is essential for achieving predictable long-term implant success. Comprehensive risk assessment, preventive strategies, and

structured supportive periodontal therapy should be considered fundamental components of implant maintenance and peri-implant disease prevention.

Keywords: *Periodontal health; implant dentistry; peri-implantitis; peri-implant mucositis; supportive periodontal therapy; implant maintenance*

References

1. Schwarz, F.; Derks, J.; Monje, A.; Wang, H.L. Peri-implantitis. J. Clin. Periodontol. 2021, 48(Suppl. 21), 238–250.
2. Heitz-Mayfield, L.J.A.; Salvi, G.E. Peri-implant mucositis and peri-implantitis: A current understanding of their diagnoses and clinical implications. Int. J. Oral Maxillofac. Implants 2021, 36, 569–578.
3. Monje, A.; Blasi, G. Significance of keratinized mucosa around dental implants: A systematic review and meta-analysis. J. Periodontol. 2022, 93, 174–188.
4. Sanz, M.; Chapple, I.L.C.; Working Group 4 of the VIII European Workshop on Periodontology. Clinical research on peri-implant diseases: Consensus report. J. Clin. Periodontol. 2021, 48(Suppl. 22), 202–206.
5. Renvert, S.; Persson, G.R.; Pirih, F.Q.; Camargo, P.M. Peri-implant health, peri-implant mucositis, and peri-implantitis: Diagnostic considerations and therapeutic concepts. Clin. Oral Implants Res. 2022, 33(Suppl. 23), 7–15

46 DIGITAL WORKFLOW IN FULL-ARCH IMPLANT REHABILITATION: THE ROLE OF INTRAORAL PHOTOGRAMMETRY IN ACHIEVING PASSIVE FIT AND CLINICAL EFFICIENCY

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Introduction

The aim of this clinical presentation is to demonstrate the application of a contemporary digital workflow in full-arch implant rehabilitation and to evaluate the advantages of intraoral photogrammetry in improving accuracy, passive fit, and treatment efficiency in implant-supported restorations.

Materials and Methods

A fully edentulous maxillary patient was rehabilitated using an immediate/early loading All-on-6 treatment concept. Following tooth extraction and placement of six implants with multi-unit abutments, intraoral photogrammetry was performed using the Shining 3D Aoralscan Elite system immediately after surgery. Digital records were combined with occlusal registration at a predetermined vertical dimension. A 3D-printed provisional restoration was fabricated to verify passive fit, occlusion, phonetics, and esthetics prior to fabrication of the definitive CAD/CAM provisional prosthesis. Clinical verification methods included radiographic evaluation, alternate screw tightening, and one-screw test assessment.

Results

The digital workflow enabled rapid and accurate transfer of implant positions and facilitated fabrication of a clinically acceptable full-arch provisional restoration with satisfactory passive fit. Intraoral photogrammetry minimized stitching-related inaccuracies commonly associated with conventional intraoral scanning in edentulous arches. Improved workflow efficiency, reduced chairside adjustments, and favorable esthetic and functional outcomes were observed.

Conclusions

Digital workflows integrating intraoral photogrammetry can enhance the predictability and precision of full-arch implant rehabilitation. The use of photogrammetry technology may improve passive fit verification and reduce complications associated with implant misfit in complete-arch restorations. Contemporary digital protocols represent a promising approach for efficient and accurate implant prosthodontic treatment.

Keywords: *Digital workflow; intraoral photogrammetry; implant dentistry; All-on-6; passive fit; CAD/CAM; full-arch rehabilitation*

References

- Ma B, Yue X, Sun Y, Peng L, Geng W. Accuracy of photogrammetry, intraoral scanning, and conventional impression techniques for complete-arch implant rehabilitation: an in vitro comparative study. BMC Oral Health. 2021;21:636.
- Bedrossian EA. Complete digital workflow for complete arch implant therapy: Fact or fiction? Journal of Prosthetic Dentistry. 2022;127(6):821–822.
- Burgoa S, de Moura e Costa AJ, Ventura D, Pinhata-Baptista OH, Cortes ARG. Digital workflow for definitive immediately loaded complete-arch CAD-CAM implant-supported prosthesis in 3 appointments without using intraoral scanning. Journal of Prosthetic Dentistry. 2024;132(1):31–36.
- De Francesco M, Stellini E, Granata S, et al. Assessment of fit on ten screw-retained frameworks realized through digital full-arch implant impression. Applied Sciences. 2021;11(12):5617.
- Precision of Photogrammetry and Intraoral Scanning in Full-Arch Implant Rehabilitation: An In Vitro Comparative Study. Applied Sciences. 2025;15(3):1388.

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47 IMMEDIATE POST-EXTRACTION DENTAL IMPLANTS: MYTH OR SELECTIVE CLINICAL ADVANTAGE? A RETROSPECTIVE COMPARATIVE STUDY OF SURVIVAL, BONE STABILITY, AND TREATMENT EFFICIENCY

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Introduction

This retrospective cohort study compared implant survival, marginal bone loss (MBL), and treatment efficiency between immediate post-extractive and delayed implant placement protocols.

Materials and Methods

Clinical and radiographic records of 119 patients (52 females, 67 males; mean age 52.71 ± 11.57 years) treated in two private dental clinics in Tirana between January 2020 and September 2024 were analyzed. Immediate implants were placed in 55 patients (46.2%), while 64 patients (53.8%) received delayed implants. All cases had a minimum follow-up of 12 months. Marginal bone levels were assessed at baseline, 6, and 12 months using standardized periapical radiographs calibrated with ImageJ®. Statistical analysis included independent-sample t-tests, Chi-square, Mann–Whitney U, and multivariate logistic regression adjusted for age, sex, and implant site.

Results

The overall implant survival rate was 94.1%, with no significant difference between immediate and delayed protocols (96.4% vs. 92.2%; $p = 0.334$). Mean MBL was -0.219 ± 0.196 mm at 6 months and -0.816 ± 1.764 mm at 12 months, without significant intergroup differences ($p > 0.05$). Multivariate logistic regression showed no significant association between implant success and placement protocol, age, sex, jaw arch, or implant region ($p > 0.05$). Immediate implant placement significantly reduced overall treatment time.

Conclusions

Immediate implant placement demonstrated survival and marginal bone stability comparable to delayed protocols while shortening treatment duration, supporting its clinical predictability in appropriately selected patients. Key words Implants; extraction; bone level; success rate; time

References

- Aung, Y. T., Eo, M. Y., Sodnom-Ish, B., Kim, M. J., & Kim, S. M. (2024). Long-term survival rates of tapered self-tapping bone-level implants after immediate placement: a positional effective rationale. Maxillofacial Plastic and Reconstructive Surgery, 46(1), 1-10. doi:https://doi.org/10.1186/s40902-024-00428-7
- Chatzopoulos, G. S., & 1, L. F. (2022). Survival Rates and Factors Affecting the Outcome Following Immediate and Delayed Implant Placement: A Retrospective Study. Journal of Clinical Medicine, 11(15), 4598. doi:https://doi.org/10.3390/jcm11154598
- Chen, R., MS, a. J., Wang, S., Duan, S., Wang, Z., Zhang, X., & Tang, Y. (2025). Effectiveness of immediate implant placement into defective sockets in the esthetic zone: A systematic review and meta-analysis. THE JOURNAL OF PROSTHETIC DENTISTRY, 411-426.
- Cheng, Y., Lai, Z., & Yu, W. (2025). Influencing factors and survival rates in immediate vs. delayed dental implant placement: a six-year retrospective analysis. Frontiers in Dental Medicine, 6. doi:https://doi.org/10.3389/fdmed.2025.1563641
- Ghazal, S. S., Alshahry, R. M., Mills, M. P., Martin, W., Aghaloo, T. L., & Cochran, D. L. (2024). Bone-Level Tapered Implants for Single Tooth Replacement: Immediate vs Delayed Placement-A Multicenter Randomized Controlled, 1-Year, Non-inferiority Clinical Study. The International Journal of Oral & Maxillofacial Implants(3), 409-425. doi:10.11607/jomi.10504

48 SYSTEMIC MARKERS AND ORAL HEALTH RISKS IN HEMODIALYSIS PATIENTS: A REVIEW OF PREOPERATIVE LABORATORY INDICATORS

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Introduction

Patients undergoing hemodialysis frequently present with periodontal disease, gingival bleeding, xerostomia, and oral mucosal lesions because of systemic inflammation, malnutrition, and metabolic disturbances such as hyperphosphatemia and hyperkalemia. This literature review synthesizes existing research on routine predialysis blood tests (e.g., C-reactive protein [CRP], albumin, phosphorus, and potassium) to identify laboratory risk profiles associated with periodontal disease progression and oral surgical complications, without conducting new clinical trials or examinations.

Materials and Methods

Peer-reviewed studies involving hemodialysis patients were reviewed, focusing on the associations between blood parameters and oral health outcomes. The primary sources included cross-sectional analyses of biomarkers such as CRP, albumin, and phosphorus in relation to periodontal indices, as well as reports on surgical complications including bleeding and delayed wound healing.

Results

The literature consistently demonstrates that elevated CRP levels and reduced albumin concentrations are associated with periodontal inflammation and tissue destruction, whereas

hyperphosphatemia is linked to alveolar bone loss. In the context of oral surgery, abnormal laboratory profiles (defined as ≥2 altered biomarkers) are associated with excessive bleeding, postoperative infection, and bacteremia following dental extractions.

Conclusions

Routine monitoring of laboratory blood parameters assists in identifying patients at high risk who may benefit from targeted periodontal therapy and modified surgical protocols, thereby reducing complications through interdisciplinary care. Future studies should validate standardized risk thresholds for clinical application.

Keywords: *Hemodialysis; routine laboratory tests; systemic inflammation; dental assessment; oral-systemic risk.*

References

1. Almeida-Pititto B, et al. (2021). Oral health and systemic inflammatory, cardiac and nitroxid biomarkers in hemodialysis patients. Journal of Clinical Periodontology, 48(5): 632–641.
2. Garcia CR, et al. (2023). Oral health challenges in patients with chronic kidney disease. Journal of Clinical Medicine, 12(18): 5987.
3. Liu Y, et al. (2024). Exploring the correlation between periodontal disease and serum biomarkers in hemodialysis patients. BMC Nephrology, 25(1): 142.
4. Park J, et al. (2025). Inflammatory Burden Index: A Superior Prognostic Biomarker of Systemic Inflammation in Patients on Peritoneal Dialysis. Kidney International Reports, 10(3): 512–520.
5. Smith A, et al. (2026). New biomarkers of inflammation associated with hemodialysis. Nephrology Dialysis Transplantation, 41(4): 823–831.

49 TREAT FIRST, THEN REPLACE: MANAGING PERIODONTITIS BEFORE IMPLANT THERAPY

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Introduction

Periodontitis is a chronic inflammatory disease associated with progressive destruction of tooth-supporting tissues and represents a major risk factor for peri-implantitis and implant failure. This review aimed to evaluate the importance of periodontal treatment before implant placement and to present a structured clinical approach for managing periodontal patients undergoing implant therapy.

Materials and Methods

A narrative review of the literature was conducted using PubMed and Scopus databases. Clinical studies, systematic reviews, and recent evidence published from 2021 onward regarding periodontal therapy, peri-implant disease, and implant outcomes were analyzed.

Results

The reviewed evidence demonstrated that adequate periodontal treatment before implant placement significantly reduces the risk of peri-implant complications and improves long-term implant survival. Comprehensive clinical and radiographic assessment is essential to determine disease severity and treatment planning. Control of risk factors such as smoking, poor oral hygiene, and systemic conditions including diabetes is fundamental before implant therapy. Non-surgical periodontal therapy remains the

first-line treatment, while surgical intervention may be required in advanced cases. Re-evaluation after therapy is necessary to confirm periodontal stability, characterized by reduced probing depths and absence of bleeding on probing. Patients enrolled in supportive periodontal maintenance programs showed improved peri-implant health and treatment outcomes.

Conclusions

Periodontal treatment prior to implant placement is a fundamental prerequisite for successful implant rehabilitation. Stabilization of periodontal disease and regular supportive periodontal therapy contribute significantly to reducing biological complications and improving long-term implant success.

Keywords: *Periodontitis; dental implant; peri-implantitis; periodontal therapy; implant survival*

References

- Efficacy of alternative or adjunctive measures to conventional non-surgical and surgical treatment of peri-implant mucositis and peri-implantitis Ramanauskaite A, Fretwurst T, Schwarz F. International Journal of Implant Dentistry. 2021.
- The efficacy of systemic antibiotics as an adjunct to surgical treatment of peri-implantitis Øen M, Leknes KN, Lund B, et al. BMC Oral Health. 2021.
- Peri-Implantitis: A Clinical Update on Prevalence and Surgical Treatment Outcomes Roccuzzo A, Stähli A, Monje A, Sculean A, Salvi GE. Journal of Clinical Medicine. 2021.
- Supportive peri-implant therapy Spedding C. BDJ Team. 2021.
- Current Concepts on the Pathogenesis of Peri-implantitis: A Narrative Review Fragkioudakis I, Tseleki G, Doufexi AE, Sakellari D. European Journal of Dentistry. 2021.

50 ADVANCED SURGICAL APPROACHES IN THE ATROPHIC MAXILLA: A CASE SERIES ON SINUS LIFTING, HORIZONTAL AUGMENTATION AND CONTOUR GRAFTING

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Introduction

Severe maxillary bone resorption in anterior and posterior regions presents significant challenges for implant-supported rehabilitation. Advanced augmentation procedures, including sinus floor elevation, horizontal ridge augmentation, and contour grafting, are often required to restore adequate bone volume and achieve functional and aesthetic outcomes. This case series evaluates the clinical management and outcomes of different surgical approaches in the atrophic maxilla.

Materials and Methods

Four clinical scenarios involving rehabilitation of the atrophic maxilla were analyzed. Treatment approaches included: (1) simultaneous sinus lifting and horizontal augmentation using a two-stage protocol; (2) one-stage sinus lifting with simultaneous implant placement when primary stability was achievable; (3) management of d-PTFE membrane exposure and soft tissue complications using platelet-rich fibrin (PRF); and (4) aesthetic contour grafting in the anterior maxilla followed by implant-supported restoration. Clinical and radiographic assessments were performed using cone-beam computed tomography during follow-up periods ranging from 7 to 12 months.

Results

CBCT evaluations demonstrated significant bone volume gain in both one-stage and two-stage augmentation procedures, allowing successful implant rehabilitation. Contour grafting procedures achieved favorable ridge architecture and highly satisfactory aesthetic outcomes in the anterior maxilla. PRF application promoted secondary healing, reduced postoperative complications, and improved soft tissue recovery in cases with membrane exposure and tissue loss.

Conclusions

Advanced surgical augmentation techniques combined with individualized treatment planning can provide predictable functional and aesthetic rehabilitation in severely atrophic maxillae. The integration of biological adjuncts such as PRF may improve healing outcomes and complication management in complex implant therapy cases.

Keywords: *Sinus lift; horizontal augmentation; contour grafting; platelet-rich fibrin; atrophic maxilla*

References

- Urban IA, Monje A, Lozada JL, Wang HL. Principles for Vertical and Horizontal Ridge Augmentation in Implant Dentistry. Periodontol 2000. 2023;91(1):247–268.
- Starch-Jensen T, Becktor JP. Maxillary Sinus Floor Augmentation: Techniques and Clinical Outcomes. J Oral Maxillofac Res. 2021;12(2):e3.
- Miron RJ, Fujioka-Kobayashi M, Hernandez M, et al. Platelet-Rich Fibrin and Soft Tissue Healing in Regenerative Oral Surgery. Clin Oral Investig. 2022;26(4):3121–3134.
- European Federation of Periodontology. Clinical Practice Guidelines for Regenerative Therapy and Implant Site Development. 2023.
- Sanz-Sánchez I, Ortiz-Vigón A, Sanz-Martín I, Figuero E, Sanz M. Effectiveness of Lateral Bone Augmentation Procedures: A Systematic Review and Meta-analysis. J Clin Periodontol. 2022;49(S24):247–269.

51 AUGMENTATION IN THE ESTHETIC ZONE: ESSENTIAL PRINCIPLES ON THE PATH TO SUCCESS

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Introduction

Implant-supported rehabilitation in the esthetic zone requires more than functional restoration, demanding long-term stability of hard and soft tissues that harmonize with the natural dentition. Achieving predictable outcomes depends on careful patient selection, precise surgical planning, and a prosthetically driven treatment workflow. This presentation discusses essential principles for augmentation and implant rehabilitation in the esthetic zone through selected clinical cases.

Materials and Methods

Clinical cases involving esthetic zone rehabilitation with horizontal ridge deficiencies were evaluated. Treatment protocols included bone augmentation procedures, three-dimensional implant positioning, connective tissue grafting, provisional restorations, and final screw-retained implant-supported prostheses. Particular attention was given to soft tissue management, emergence profile development, and the transfer of peri-implant tissue contours from provisional to definitive restorations.

Results

Bone augmentation procedures successfully improved ridge volume and enabled prosthetically ideal implant positioning. Connective tissue grafting enhanced peri-implant soft tissue thickness and contour stability, contributing to natural esthetic integration. Provisional restorations played a critical role in shaping the emergence profile and guiding soft tissue maturation prior to definitive rehabilitation. The final screw-retained restorations demonstrated favorable esthetic integration, functional stability, and patient satisfaction.

Conclusions

Successful implant rehabilitation in the esthetic zone requires a comprehensive and protocol-driven approach integrating augmentation procedures, soft tissue management, and prosthetic planning. Careful preoperative evaluation, staged surgical execution, and appropriate provisionalization contribute significantly to predictable functional and esthetic outcomes.

Keywords: *Esthetic zone; bone augmentation; connective tissue graft; emergence profile; implant rehabilitation*

References

- Buser D, Chappuis V, Belser UC, Chen S. Implant Placement Post Extraction in Esthetic Single Tooth Sites: Current Concepts and Outcomes. Periodontol 2000. 2022;88(1):185–210.
- Zucchelli G, Tavelli L, McGuire MK, et al. Soft Tissue Augmentation Around Dental Implants: Current Evidence and Clinical Recommendations. J Clin Periodontol. 2021;48(2):251–276.
- Urban IA, Monje A, Wang HL. Horizontal Ridge Augmentation in Implant Dentistry: Principles and Techniques. Periodontol 2000. 2023;91(1):172–197.
- European Association for Osseointegration. Consensus Guidelines on Esthetic Implant Dentistry. 2023.
- Coachman C, Paravina RD. Digitally Guided Esthetic Rehabilitation and Emergence Profile Management Around Implants. Int J Esthet Dent. 2022;17(3):312–325.

52 THE DESIGN OF IMPLANT PROSTHETICS: A CLINICAL APPRAISAL OF FULL-ARCH IMPLANT DESIGN STANDARDIZATION AND HYGIENE ACCESS IN ALL-ON-X RESTORATIONS

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Introduction

Full-arch implant-supported prostheses (FASP) within the All-on-X concept demonstrate high survival rates; however, a gap remains between mechanical success and long-term biological outcomes. Prosthetic design variables, including emergence profile, intaglio surface architecture, and prosthetic contour, influence biofilm accumulation around peri-implant tissues and affect tissue health. This review evaluates the impact of prosthetic design standardization on hygiene accessibility and peri-implant health, particularly in patients with a history of periodontitis.

Materials and Methods

A literature review was conducted using PubMed/MEDLINE, Cochrane Library, and Scopus databases (2021–2026). Included studies assessed prosthetic design variables and peri-implant tissue outcomes, including plaque index, bleeding on probing (BoP), probing depth, and marginal bone loss (MBL). Consensus reports from the European Federation of Periodontology (EFP) and the American Academy of Periodontology (AAP) were included as clinical reference frameworks.

Results

Emergence profiles greater than 30° and convex intaglio prosthetic surfaces were consistently associated with increased biofilm accumulation and peri-implant inflammation. Inadequate prosthesis-to-tissue clearance impaired hygiene access, particularly in posterior regions. Patients with a history of periodontitis demonstrated a significantly higher risk of peri-implantitis compared with periodontally healthy individuals. Gingival inflammation was reported in up to 41.4% of full-arch rehabilitations during a two-year follow-up period.

Conclusions

Current full-arch prosthetic designs remain insufficiently standardized regarding biological outcomes and hygiene accessibility. A biologically driven prosthetic framework incorporating emergence profile, intaglio contour, prosthesis-to-tissue clearance, and individualized patient risk assessment is essential to support long-term peri-implant health.

Keywords: *Full-arch implant-supported prosthesis; peri-implant disease; prosthetic design; oral hygiene access; history of periodontitis.*

References

1. Serroni M, Borgnakke WS, Romano L, Balice G, Paolantonio M, Saleh MHA, Ravidà A. History of periodontitis as a risk factor for implant failure and incidence of peri-implantitis: A systematic review, meta-analysis, and trial sequential analysis of prospective cohort studies. Clin Implant Dent Relat Res. 2024 Jun;26(3):482-508. doi:10.1111/cid.13330

2. Revilla-León M, Yilmaz B, Kois JC, Att W. Res. 2023 Aug;25(4):743-751. doi:10.1111/cid.13182.

3. Chankhore P, Khubchandani SR, Reche A, Paul P. Prosthetic design factors influencing peri-implant disease: A comprehensive review. Cureus. 2023 Nov 13;15(11):e48737. doi:10.7759/cureus.48737

4. Lin GH, Lee E, Barootchi S, et al. The influence of prosthetic designs on peri-implant bone loss: An AO/AAP systematic review and meta-analysis. J Periodontol. 2025;96:634-651. doi:10.1002/JPER.24-0144

5. Hamilton A, Putra A, Nakapaksin P, Kamolroongwarakul P, Gallucci GO. Implant prosthodontic design as a predisposing or precipitating factor for peri-implant disease: a review. Clin Implant Dent Relat Res. 2023;25(4):710-722. doi:10.1111/cid.13183.

53 ODONTOGENIC CYSTS INVOLVING THE MAXILLARY SINUS: A REPORT OF THREE CASES

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Introduction

Odontogenic cysts are common pathological entities in the maxillofacial region and may extend into the maxillary sinus, often presenting diagnostic and therapeutic challenges. This case series aims to describe the clinical, radiological, and histopathological features, as well as the management, of three odontogenic cysts involving the maxillary sinus.

Materials and Methods

Three patients presenting with localized swelling and pain were clinically and radiographically evaluated. Cone-beam or conventional imaging revealed cystic lesions involving the maxillary sinus and associated teeth. Pulp vitality testing and endodontic assessment were performed where indicated. Surgical enucleation under general anesthesia with nasotracheal intubation was carried out in all cases. Histopathological examination established the definitive diagnosis. Patients were followed postoperatively.

Results

All three cases involved cystic lesions within the maxillary sinus. Case 1 (39-year-old female) presented with a lesion associated with an impacted tooth (#28) and adjacent teeth (#24, #25); histology confirmed a dentigerous cyst following endodontic treatment and surgical removal. Case 2 (23-year-old male) involved a lesion associated with teeth (#16, #17); extraction of #16 and treatment of #17 were performed, and histology revealed a radicular cyst. Case 3 (30-year-old male) presented with a similar lesion in the left maxillary sinus, also diagnosed as a radicular cyst after endodontic management and enucleation. No postoperative complications were observed.

Conclusions

Odontogenic cysts involving the maxillary sinus exhibit clinical and histopathological variability. Accurate radiological assessment and evaluation of tooth vitality are essential for diagnosis and treatment planning. Combined endodontic and surgical approaches yield favorable outcomes with minimal complications.

Keywords: *Enucleation; general anesthesia; maxillary sinus; odontogenic cyst; radicular cyst*

References

1. Johnson, N.R.; Gannon, O.M.; Savage, N.W.; Batstone, M.D. Frequency of odontogenic cysts and tumors: A systematic review. J. Investig. Clin. Dent. 2021, 12, e12606.
2. Shivakumar, H.R.; Naik, S.; Bhandary, S.; et al. Odontogenic cysts of the maxillary sinus: Clinical and radiographic considerations. Oral Maxillofac. Surg. 2022, 26, 187–194.
3. Speight, P.M.; Takata, T. New tumor entities in the 2022 World Health Organization classification of head and neck tumors: Odontogenic and maxillofacial bone tumors. Virchows Arch. 2022, 481, 63–71.
4. Koivisto, T.; Bowles, W.R.; Rohrer, M. Frequency and distribution of radiolucent jaw lesions: A retrospective analysis. J. Endod. 2021, 47, 1934–1941.
5. Ramaglia, L.; Morgese, F.; Pighetti, M.; Saviano, R. Surgical management of large odontogenic cysts involving the maxillary sinus: A retrospective clinical study. Int. J. Oral Maxillofac. Surg. 2022, 51, 1012–1019

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54 IMMEDIATE PROVISIONALIZATION FOLLOWING FULL-ARCH IMPLANT SURGERY USING A DIGITAL WORKFLOW: A CASE REPORT

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Introduction

Full-arch implant-supported rehabilitation is a predictable treatment option for patients with severely compromised dentition and functional limitations. Immediate provisionalization may improve patient comfort, esthetics, and early function during the healing phase.

Materials and Methods

A 51-year-old male patient presented with esthetic concerns and impaired mastication. Clinical and radiographic examination revealed severely compromised dentition requiring full-arch rehabilitation. Following implant placement, multi-unit abutments were selected and angulated to

achieve a favorable prosthetic path of insertion. An intraoral digital scan was performed immediately after surgery, and a screw-retained provisional fixed prosthesis was fabricated using a digital workflow and delivered after surgery.

Results
The provisional restoration was delivered approximately two hours after surgery. Immediate improvement was achieved in esthetics, vertical dimension, masticatory function, and soft tissue support. The patient was followed during the healing phase.

Conclusions
Immediate provisionalization using a digital workflow may support early esthetic and functional recovery after full-arch implant surgery. Accurate implant positioning, proper multi-unit abutment angulation, passive fit, and occlusal adjustment are essential for predictable clinical outcomes.

Keywords: *Immediate provisionalization; full-arch implant rehabilitation; digital workflow in implant dentistry; screw-retained provisional prosthesis; multi-unit abutments.*

References
- Zhang YJ, Shi JY, Qian SJ, Qiao SC, Lai HC. Accuracy of full-arch digital implant impressions taken using intraoral scanners and related variables: A systematic review. Int J Oral Implantol (Berl). 2021 May 12;14(2):157-179. PMID: 34006079.
- Nikolaos Donos et al. “Immediate loading of dental implants in edentulous patients: systematic review and meta-analysis”, Journal of Clinical Periodontology, 2021.
- Mariano Sanz et al. “Clinical research on implant dentistry: priorities and future directions”, Journal of Clinical Periodontology, 2021.
- Markus B. Blatz et al. “CAD-CAM technology in implant dentistry: current trends and future developments”, Compendium of Continuing Education in Dentistry, 2022.
- Tomas Linkevicius et al. “Immediate implant placement and provisionalization: a contemporary review”, Journal of Oral and Maxillofacial Research, 2022.

55 FULL-MOUTH REHABILITATION IN PATIENTS WITH ADVANCED DENTAL DETERIORATION AND PARTIAL EDENTULISM PRESENTS SIGNIFICANT FUNCTIONAL AND AESTHETIC CHALLENGES, REQUIRING A MULTIDISCIPLINARY AND PROSTHETICALLY DRIVEN APPROACH

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Introduction
Full-mouth rehabilitation in patients with advanced dental deterioration and partial edentulism presents significant functional and aesthetic challenges. Successful treatment requires a multidisciplinary and

prosthetically driven approach integrating surgical, restorative, and digital planning principles. This case report presents the rehabilitation of a patient with compromised dentition using implant-supported zirconia restorations and a digital workflow.

Materials and Methods
A 55-year-old male patient presented with multiple missing teeth, retained roots, failing restorations, periodontal involvement, and occlusal instability. Clinical examination, panoramic radiography, and cone-beam computed tomography revealed reduced posterior bone volume and the need for comprehensive rehabilitation. The treatment plan included extraction of non-restorable teeth, endodontic treatment of selected teeth, and placement of seven dental implants in strategic positions using CBCT-guided prosthetic planning. A delayed loading protocol was selected to optimize osseointegration. After a three-month healing period, digital impressions were obtained with an intraoral scanner, and definitive screw-retained zirconia restorations were fabricated.

Results
Successful osseointegration was achieved in all implants. The final rehabilitation demonstrated significant improvement in aesthetics, function, and occlusal stability. Harmonious smile design, appropriate tooth proportions, and improved soft tissue support were obtained. The implant-supported screw-retained zirconia restorations showed excellent fit, stability, and retrievability. The patient reported high satisfaction with both functional and aesthetic outcomes.

Conclusions
Comprehensive full-mouth rehabilitation using CBCT-guided planning, delayed implant loading, and a digital workflow can provide predictable and aesthetically successful outcomes in patients with severely compromised dentition.

Keywords: *Full-mouth rehabilitation; dental implants; digital workflow; zirconia restorations; CBCT-guided planning*

References
- Papaspyridakos P, Chen CJ, Gallucci GO, Doukoudakis A, Weber HP. Full-Arch Implant Rehabilitation: Contemporary Concepts and Clinical Outcomes. J Prosthodont. 2022;31(2):95–104.
- European Association for Osseointegration. Guidelines for Digital Implant Dentistry and Prosthetic Rehabilitation. 2023.
- Mangano FG, Admakin O, Bonacina M, Lerner H. Digital Workflow in Implant Prosthodontics: Current Applications and Clinical Outcomes. BMC Oral Health. 2021;21(1):455.
- Pjetursson BE, Zarauz C, Strasding M, Sailer I, Zwahlen M, Zembic A. Implant-Supported Fixed Dental Prostheses: Long-Term Outcomes and Technical Complications. Clin Oral Implants Res. 2021;32(S21):210–222.
- Joda T, Gallucci GO, Wismeijer D, Zitzmann NU. Augmented and Virtual Reality in Dental Medicine: Current Status and Future Perspectives. Clin Oral Implants Res. 2023;34(S29):44–56.

56 MULTIDISCIPLINARY MANAGEMENT OF MISSING TEETH WITH ORTHODONTIC, IMPLANTOLOGIC, AND PROSTHETIC INVOLVEMENT: A CASE REPORT

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Introduction
The management of patients with multiple missing teeth and occlusal disturbances requires a multidisciplinary approach to achieve optimal functional and esthetic outcomes. This case report aims to present the interdisciplinary treatment of a patient with edentulous spaces, an impacted mandibular left canine, and extruded molars caused by the absence of antagonists.

Materials and Methods

A patient presenting with multiple extracted teeth, impacted tooth 33, and occlusal discrepancies underwent a staged multidisciplinary treatment. The initial phase included fixed orthodontic therapy in the mandibular arch to reposition migrated teeth and facilitate eruption of the impacted canine. Intrusion of extruded molars was achieved using temporary anchorage devices (TADs) to restore the occlusal plane. Following orthodontic space management, dental implants were placed in the edentulous areas according to functional and prosthetic requirements. In the final phase, implant-supported prosthetic rehabilitation was completed with fixed crowns.

Results

The interdisciplinary approach allowed successful alignment of the impacted canine, correction of molar extrusion, restoration of the occlusal plane, and replacement of missing teeth with implant-supported restorations. Functional occlusion, esthetics, and arch integrity were successfully re-established, resulting in improved oral rehabilitation and patient satisfaction.

Conclusions

Multidisciplinary collaboration between orthodontics, implantology, and prosthodontics is essential in the management of complex dental cases. Careful treatment planning and coordinated therapy can provide predictable long-term functional and esthetic outcomes.

Keywords: *Orthodontics; dental implants; prosthodontics; impacted canine; multidisciplinary treatment*

References

- Papageorgiou SN, Koletsi D, Iliadi A. Temporary anchorage devices in orthodontics: current clinical concepts. Progress in Orthodontics. 2021.
- Buser D, Chappuis V, Belser UC, Chen S. Implant placement post orthodontic treatment in complex esthetic cases. Clinical Oral Implants Research. 2021.
- Aljawad H, Steffensen B, Cooper LF. Multidisciplinary treatment planning in implant dentistry. Journal of Prosthodontics. 2022.
- Caprioglio A, Fastuca R, Zecca PA. Orthodontic management of impacted mandibular canines: contemporary approaches. European Journal of Orthodontics. 2022.
- Pera P, Menini M, Pesce P. Interdisciplinary oral rehabilitation with orthodontic and implant-prosthetic treatment. International Journal of Prosthodontics. 2023.