PERIOPERATIVE MANAGEMENT AND COMPLICATION IN A PATIENT ON NOAC THERAPY: A CASE REPORT

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Aim: oral surgery in patients treated with direct new anticoagulants (NOACs) presents significant challenges in their perioperative management. This case report describes a hemorrhagic complication following a tooth extraction, aiming to analyze the intraoperative and perioperative management of bleeding events in these patients.

Methods: an 81-year-old male patient with a history of multivessel disease, atrial fibrillation, and TIA episodes presented for the extraction of the roots of tooth 46 under local anesthesia, without discontinuing NOAC therapy with Xarelto®.

Results: three days after the surgical extraction, the patient experienced significant bleeding, with a liver coagulum at the extraction site and a mucosal tear in the floor of the mouth, requiring suturing under local anesthesia and tranexamic acid for hemorrhage control. Xarelto® therapy was maintained throughout the perioperative period. Oral antibiotics and topical Curasept® gel were started to prevent infection. At the follow-up visit three days later, the extraction site showed satisfactory healing with no further bleeding.

Conclusions: the surgical management of patients on DOACs requires particular attention, especially when therapy cannot be suspended. The use of appropriate hemostatic techniques is essential to control bleeding. In patients with vascular comorbidities, strict perioperative management and continuous communication with the general practitioner are crucial to the success of the intervention and the prevention of significant complications.

DELAYED INFECTION OF A GRAFTED ALLOGENIC MATERIAL AFTER MAXILLARY SINUS FLOOR ELEVATION: A CASE REPORT

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Aim: to report a case of unusual late infection involving an allogenic graft placed seven years earlier during a maxillary sinus floor elevation procedure, which suddenly led to loss of two implants.

Methods: a 71-year-old patient underwent a maxillary sinus lift, with a lateral approach, using an allogenic bone graft, seven years before the occurrence of the complication reported here. After seven years the patient experienced sudden implant loss of 2 elements placed in upper jaw arch area, and since then he started to have multiple abscesses and a fistula.

The infection was controlled through a combination of surgical intervention and targeted antibiotic therapy.

During the procedure for infected graft material, the same appeared unchanged (non-osteintegrated) suggesting a lack of integration with the host tissue. Treatment included targeted antibiotic therapy, surgical drainage, and removal of infected grafted material.

Results: at one year follow-up, the patient is asymptomatic and possibly ready for a new implant rehabilitation.

The absence of graft resorption over time indicated an integration failure, potentially contributing to bacterial colonization and chronic infection.

Conclusions: delayed infections in allogenic grafts can lead to severe complications, particularly when the material fails to integrate. Long-term monitoring and early intervention are essential to prevent implant loss and associated complications.

Doi: 10.19256/abstract.cduo.02.2025

MAXILLARY EOSINOPHILIC GRANULOMA PRESENTING AS A PERIAPICAL LESION: A CASE REPORT

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Aim: this poster presents a rare case of an osteolytic maxillary lesion mimicking a periapical lesion of endodontically treated maxillary molars in a 23-year-old patient.

Methods: a 23-year-old patient was referred to our university clinic following the incidental radiographic discovery of a radiolucency extending from the first quadrant and occupying the entire right maxillary sinus. The patient was asymptomatic except for nasal breathing difficulty. A CT scan was performed, and surgery was scheduled with a preliminary diagnosis of an odontogenic cyst, likely due to inadequate root canal treatments of teeth 1.7, 1.6, and 1.5. Surgery was conducted under general anesthesia by a multidisciplinary team, comprising an oral surgeon and a maxillofacial surgeon, trained in endoscopic techniques. The affected teeth were extracted, and the lesion was removed via a transalveolar endoscopic approach. A specimen was collected for histopathological examination, and a lower right turbinectomy was performed using a transnasal endoscopic route.

Results: histopathological analysis confirmed the diagnosis of eosinophilic granuloma.

Conclusions: eosinophilic granuloma of the maxilla is an exceptionally rare condition, accounting for less than 1% of cases. This minimally invasive approach provides optimal conditions for future implant rehabilitation in this young patient.

ROOT MEMBRANE REPLACEMENT, FOLLOW-UP AT 4 YEARS

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Aim: external reabsorption is the pathological process that causes progressive disintegration of tooth surfaces resulting in probable extraction of the element. It is known that tooth loss, especially in the anterior area, is accompanied by alveolar ridge remodeling.
At 4 months following the extraction of a tooth in the anterior area, the morphology of the healed alveolar ridge may show discrepancies of approximately 56% in bone thickness and 30% in bone height between the lingual and buccal bone plates. To give greater predictability and meet the aesthetic expectations of our rehabilitation, we treat implant placement in a more palatal position in association with root palatal membrane replacement.

Methods: a 40-year-old male patient, non-smoker, with systemic Sjogren Syndrome and, type 2 diabetes, presented to our attention with discomfort in the upper left central incisor subjected to endodontic treatment 10 years ago. Following clinical and CBCT evaluation, he reported high mobility, buccal probing and significant external root resorption. The patient underwent extraction surgery and simultaneous implant insertion, and the root of the extracted element was placed on the buccal side.

Results and conclusions: after 4 months, element 22 was prosthesized with a screwed stratified monolithic zirconia crown; clinically, the stability of soft tissues and of the mesial and distal bone peaks was noted. Furthermore, the method is more suitable in cases where the patient presents situations of systemic morbidity that might affect the rehabilitative outcome.

ENDOSCOPIC SURGERY APPROACH FOR MINIMALLY INVASIVE REMOVAL OF A DENTIGEROUS CYST ASSOCIATED WITH AN IMPACTED MANDIBULAR CANINE: A CASE REPORT

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Aim: the aim of this poster is to present a minimally invasive approach for the removal of a dentigerous cyst using endoscopic surgery.
Methods: a 51-year-old patient presented to the Unit of Odontostomatology at the AOU San Giovanni di Dio e Ruggi d'Aragona in Salerno for a dental consultation. The patient has an unremarkable medical history. A cone beam computed tomography performed in June 2024 revealed the presence of a multilocular radiolucent osteolytic lesion extending from tooth 4.6 to 3.1, measuring approximately 40×30×15 mm. The lesion was in continuity with the inferior alveolar neurovascular bundle and associated with an impacted tooth 4.3, with evidence of root resorption affecting teeth 4.6, 4.5, and 4.4. Clinical examination showed positive responses to pulp sensitivity testing in all involved teeth. The treatment plan included root canal treatment for teeth 4.6, 4.5, and 4.4, followed by the extraction of the impacted tooth 4.3 and removal of the osteolytic lesion via endoscopic surgery through a vestibular access measuring 15×12 mm.
Results: histological examination confirmed the diagnosis of a dentigerous (follicular) cyst. The 3-month follow-up orthopantomography showed a newly formed bone with a radiopaque appearance.
Conclusions: the minimally invasive endoscopic approach allowed for reduced surgical trauma, preservation of the alveolar canal as well as the dental structures, thereby promoting improved healing.

LOCAL OZONE APPLICATION ON PALATAL MRONJ PROSTHESIS-INDUCED: A CASE REPORT

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Aim: the purpose of this study is to present a case of palatal MRONJ of clinical size 2x2 mm (stade II, type A – diagnosed in December 2023) treated with weekly applications of ozone gel (oZoral®, Innovares), for 10 consecutive weeks.
Methods: a 78-years old woman, cured weekly with Alendronic acid 70 mg for 10 years and then semiannually with Denosumab 60 mg for osteoporosis, came to our attention for asymptomatic palatal bone exposition close to the incisive foramen. Necrotic bone visible in CBCT was exponentially wider (12,00x5,84 mm) than the clinical observable lesion and it would have required a demolitive surgical treatment. Since the patient was asymptomatic and compliant, a more conservative treatment was chosen: ozone gel was applied weekly on the area throught large-gauge needle (18G), approximately 2 ml per application, for 10 weeks. The patient was instructed to maintain meticulous oral hygiene and not to use the prosthesis to prevent deterioration of the lesion.
Results: in the sixth week, a bone autosequestration occurred. 6 months after the diagnosis there were no signs of recurrence, and the patient showed significant improvement with evidence of re-epithelialization.
Conclusions: the choice of a conservative treatment with weekly local ozone applications, combined with the patient's awareness and compliance, proved effective and allowed us to avoid a demolitive surgery on the maxillary bone.

ASYMPTOMATIC RADIOLUCENT LESION IN A PEDIATRIC PATIENT: A CASE REPORT

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Aim: asymptomatic periapical radiolucent lesions in pediatric patients pose a diagnostic challenge, requiring a cautious approach to distinguish benign lesions from potentially severe conditions such as odontogenic myxoma. This case report describes the diagnostic and therapeutic management of this type of lesion in a 10-year-old patient.

Methods: during a routine orthodontic panoramic radiograph (OPT), an area of bone rarefaction was detected at the apical level of tooth 47 in a 10-year-old asymptomatic patient. A Computed Tomography (CT) scan was performed to confirm the diagnosis, highlighting the need for surgical intervention. Therefore, an excision of the lesion was carried out concurrently with the extraction of tooth 48. The excised tissue was submitted for histopathological examination.

Results: histopathological analysis revealed fibrous connective tissue fragments with interspersed myxoid areas and some nests of odontogenic epithelium. The morphological characteristics, considering the clinical scenario, suggested a residual dental follicle or dental pulp. However, the presence of myxoid components raised the need to rule out odontogenic myxoma through careful clinical and radiographic follow-up. Ten months after surgery, follow-up radiographs showed excellent healing of the surgical site, supporting the hypothesis of a benign lesion. A follow-up plan was established for at least 5 years.

Conclusions: this case underscores the importance of a cautious diagnostic and therapeutic approach for radiolucent lesions in pediatric patients. Long-term follow-up is essential to exclude more severe conditions and ensure appropriate treatment.

QUANTUM MOLECULAR RESONANCE SCALPEL IN SURGICAL MANAGEMENT OF NON-SYNDROMIC CONGENITAL DOUBLE UPPER LIP

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Aim: double lip is a rare anomaly typically affecting the upper lip and characterized by an accessory fold of hypertrophic mucosa near the vermilion border. It may be congenital, acquired or associated with Ascher's syndrome (blepharochalasis, non-toxic thyroid enlargement and double lip).

Surgical treatment is indicated for aesthetic concerns or when it interferes with speech or mastication.

This case report evaluates the effectiveness of the Quantum Molecular Resonance (QMR) scalpel in the surgical management of double upper lip, highlighting its precision, minimal thermal trauma and enhanced healing properties.

Methods: a 21-year-old male presented with non-syndromic congenital double upper lip, covering the cervical third of the maxillary anterior teeth when smiling or speaking.

Under local anesthesia, cheiloplasty was performed using a QMR scalpel to excise the excessive mucosal and submucosal tissue, sparing the vermilion border. The incision maintains tissue temperature below 45°C, not reaching necrosis temperature. Coagulation was achieved at 63°C, using a direct technique for vessels up to 1.5 mm and an indirect technique with forceps for larger vessels. The wound was sutured with 4.0 silk.

Results: healing was good, and the cosmetic outcome was excellent at 3-week follow-up. Histopathology revealed focal epithelial hyperplasia.

Conclusions: QMR surgery offers a precise, atraumatic approach that minimizes bleeding, reduces operative time, accelerates healing and limits thermal damage. These combined advantages make it particularly valuable in oral and perioral aesthetic surgery.

DIGITAL ANALYSIS AND PLANNING IN THIRD MOLAR SURGERY: A TECHNICAL NOTE AND CASE REPORT

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Aim: mandibular third molar extraction is one of the most frequent procedures in oral surgery and the leading cause of Inferior Alveolar Nerve (IAN) injury. Digital analysis and planning could help reduce this complication.

Methods: a 28-year-old female patient presented a vertical impacted mandibular left third molar, covered by mucosa and classified 2B according to Pell and Gregory classification. Its roots were in close proximity to the mandibular canal and a cystic lesion eroded mandibular ramus, as seen on CBCT. CBCT segmentation using RealGUIDE software (3DIEMME, Figino Serenza, Italy) allowed 3D-printing of a tooth model, providing a better understanding of anatomy and tridimensional relationships between tooth, alveolar bone, and IAN. An intraoral scan allowed to design a tooth-supported osteotomy cutting guide.

Results: the tooth was extracted using the guide while eroding buccal bone with a bur, without requiring coronectomy or root resection, and simultaneously enucleating the cyst. Healing occurred by primary intention, and the postoperative course was uneventful, with no symptoms of IAN injury.

Conclusions: CBCT segmentation and 3D printing enables the analysis and planning of complex extraction cases, providing clinicians with a better awareness of tridimensional anatomy, and thus reducing surgical risks. Moreover, the use of surgical guides for osteotomy and, if required, for coronectomy and root section, enables more precise and efficient procedures, minimizing patient's bone sacrifice while requiring a slightly wider flap.

BUCCAL SPACE COLLECTION OF OZONIZED SUNFLOWER OIL FOLLOWING OFF-LABEL INJECTION: A CASE REPORT

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Introduction: ozonized sunflower oil, a substance known for its antimicrobial and immunostimulating properties, is increasingly being used in the treatment of oral conditions, such as periodontitis, surgical wound care, ulcer healing. However, off-label use, such as periapical/intrasulcular injections, may lead to unexpected complications.

Case description: this report describes a case of a 67-year-old female who presented with swelling on the left side of her face, unresponsive to antibiotic and corticosteroid treatments. Initial diagnosis suggested an odontogenic abscess, but ultrasound revealed an irregular intramuscular collection of amorphous and avascular material surrounded by coarse hypoechoic halo. The diagnosis of buccal space collection of ozonized oil due to an off-label periapical injection of ozonized oil was made. The patient has disclosed a previous topical treatment with ozonized sunflower oil. Surgical drainage was performed, with the aspiration of a brownish liquid, which was sent for microbiological analysis. A second drainage was required due to persistent mild swelling. Following the second procedure, the patient experienced near-complete symptom resolution. A month later, the patient underwent tooth extraction with no further complications.

Discussion: this case highlights the potential risks of off-label injection of ozonized oil, which, though biocompatible and sterile, is not resorbable and may cause inflammatory reactions. Ultrasound proved invaluable in distinguishing this condition from an odontogenic abscess, and needle-driven aspiration was an effective method for resolving the symptoms.

Conclusions: while no local complications have been reported in the literature, off-label, intraparenchymal injections should be avoided to prevent such complications.

BUCCAL AND PALATAL BONE PLATE RECONSTRUCTION AT THE TIME OF TOOTH EXTRACTION WITH A PORCINE BONE GRAFT AND A DENSE POLYTETRAFLUOROETHYLENE MEMBRANE INTENTIONALLY LEFT EXPOSED

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Aim: a fractured root can cause severe alveolar bone plate loss, hindering the ability of implant placement. The aim of this case study is to assess whether the use of a bone substitute and a dense polytetrafluoroethylene (d-PTFE) membrane, intentionally left exposed to the oral cavity, can reconstruct bone plates at the time of tooth extraction.

Methods: a fractured upper right canine caused a 9 mm buccal and a 3 mm palatal bone plate loss. After triangular mucoperiosteal flap elevation and tooth extraction, a dPTFE membrane (Cytoplast) was applied over the defect, filled with a highly porous porcine particulate graft (ZCore), and was left exposed for 4 weeks until its removal, that was carried out with tweezers without anesthesia. The graft was covered by immature connective tissue that was left to heal by secondary intention.

Results: eight months after extraction, the site was re-opened, a bone specieman was harvested during implant bed preparation for histologic evaluation, and an implant was inserted in the regenerated bone. Both buccal and palatal bone plates were regenerated within the limits of the bone envelope. Histological evaluation revealed a good quantity and quality of newly formed bone around the few remnants of the porcine particles. The implant was loaded with a screw-retained metal-ceramic crown, and the 1 year clinical and radiographic follow-up revealed stable hard and soft tissues.

Conclusions: the use of intentionally left exposed d-PTFE membranes at the time of extraction is an effective technique for the immediate reconstruction of severely resorbed sockets.

GLANDULAR ODONTOGENIC CYST: A CASE REPORT

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Aim: this report aims to describe the case of a 51-year-old male patient diagnosed with a Glandular Odontogenic Cyst (GOC) located in the maxilla which is a rare developmental cyst of odontogenic origin, accounting for less than 0.5% of all jaw cysts.

Methods: a biopsy was performed on a maxillary lesion suspected to be an odontogenic cyst. The surgical excision was carried out under local anesthesia with mepivacaine. An intraoral approach was used to access the lesion, and careful enucleation was performed to ensure complete removal. The excised tissue was sent for histopathological examination, including immunohistochemical analysis.

Results: macroscopically, the lesion presented as a laminar fragment of cystic wall of 0.8 cm. Microscopically, the cystic wall was lined by stratified squamous epithelium with focal areas showing columnar cells with mucous differentiation. Epithelial thickening and intraepithelial microcystic structures were observed. The stroma appeared slightly fibrotic. Immunohistochemical staining was positive for p40 in squamous elements, with negative staining for BRAF V600E and CDX2. These findings confirmed the diagnosis of a glandular odontogenic cyst.

Conclusions: GOC are uncommon lesions that require thorough histopathological examination for accurate diagnosis. This case underscores how GOC deserves consideration in differential diagnosis of maxillary radiolucent lesions with high potential for growth and recurrence. It should be accurately differentiated from low-grade central mucoepidermoid carcinoma based on its histopathological characteristics.

CORONECTOMY OF THE LOWER THIRD MOLAR WITH THE USE OF L-PRF: A POTENTIAL AID IN A CASE WITH STRONG INDICATION

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Aim: coronectomy is a surgical technique that consists in only removing the crown of a lower third molar, leaving the roots intact. It is indicated in complex cases with a high risk of damage for the inferior alveolar nerve. Although it reduces nerve-related risks, some complications may occur. The use of L-PRF (Leukocyte-and platelet-rich fibrin) may improve postoperative regeneration and healing. This study evaluates the effectiveness of coronectomy with L-PRF for an impacted third molar, with several pericoronitis.

Methods: a 27-year-old female patient, in good general health, underwent coronectomy of a fully impacted lower third molar with the root trunk crossed by the inferior alveolar nerve, as CBCT showed. L-PRF was applied to the surgical site to stimulate healing. Antibiotic prophylaxis was administered, and clinical and radiological follow-up were conducted at 1 week, 1 month, 3 months, and 6 months.

Results: the postoperative course was optimal, with no significant pain, swelling, or bleeding. During follow-up, complete mucosal healing was observed, without any infective complications or nerve lesions. The radiographic control at 3 and 6 months showed excellent bone healing.

Conclusions: coronectomy of the lower third molar with the application of L-PRF proved to be a safe and effective strategy for complex cases, according to literature. The use of L-PRF may have contributed to favorable postoperative healing, reducing the risk of complications. Our results suggest that the procedure is effective in the short and medium term, but more studies are required.

HORIZONTAL GUIDED BONE REGENERATION USING A TITANIUM REINFORCED DENSE PTFE MEMBRANE AND A SYNTHETIC NANOCRYSTALLINE HYDROXYAPATITE: CLINICAL AND HISTOLOGICAL OUTCOME WITH 5-YEAR FOLLOW UP

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Aim: to investigate the clinical and histological outcome of an horizontal Guided Bone Regeneration (GBR) using a synthetic Nanocrystalline HydroxyApatite (NCHA) embedded in a silica gel matrix (Nanobone®), covered by a titanium reinforced dense polytetrafluoroethylene (TR-dPTFE) membrane (Cytoplast®).

Methods: a graft of 100% NCHA granules filled the horizontal defect due to endodontic infection of a first left maxillary molar extracted several months before in a 22-year-old female healthy patient. The graft was covered by a TR-dPTFE membrane, fixed with titanium tacks, while periosteal incision allowed a tension-free primary closure. Healing was uneventful and, after a period of 10 months, the site was re-opened for membrane removal and implant application. During implant bed preparation, a trephine core was obtained for histological evaluation.

Results: healing abutment was immediately applied for un-submerged healing. After two months a provisional crown was applied for progressive loading before a metal-ceramic crown was delivered 6 months later. The 5-year follow-up from prosthetic loading showed clinical and radiographic healthy tissues. Histological examination revealed good integration of the biomaterial in the surrounding tissues, composed by lamellar bone trabeculae and connective tissue. New bone formation occurred not only around NCHA granules, but even inside the porous amorphous particles.

Conclusions: the combination of NCHA and TR-dPTFE membrane produced good clinical and histological results, that remained stable for 5 years.

THE B.O.I.L. PROTOCOL WITH OSSTEM IMPLANT: A CASE REPORT WITH 18 MONTH FOLLOW-UP

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Aim: the aim is to report the 18-month clinical outcomes of immediate fixed prosthetic rehabilitation using Osstem ET III SA implants (Osstem Implant Co., Busan, Korea), placed according to the Biological Oriented Immediate Loading (BOIL) protocol. The protocol is designed to preserve peri-implant bone by respecting the biological width and ensuring proper management of the transmucosal tunnel, which are critical for the formation of a stable mucosal seal. A recent study (Bambini et al., 2021) proposed a mathematical approach for optimal implant positioning in relation to the bone crest, aiming to minimize peri-implant bone resorption.

Methods: a 65-year-old female diagnosed with Stage IV, Grade B periodontitis was treated. Soft tissue measurements and implant positioning followed the protocol by Bambini et al., using the Y = X -3 formula (Bambini et al., 2021). Seven implants were placed post-extraction with sub-preparation and torques >55 Ncm. Multi-unit abutments (TSMA5020P) were immediately positioned. A temporary prosthesis was delivered 12 hours after surgery. Final impressions were taken after 4 months for zirconia restoration.

Results: radiographic assessments at T0, T6, T12, and T18 showed mean Marginal Bone Level (MBL) variations of only 0.07±0.10 mm, indicating stable peri-implant bone.

Conclusions: the BOIL protocol proved effective in maintaining biological width and minimizing bone loss, supporting its predictability for immediate implant placement.

SURGICAL MANAGEMENT OF WHARTON'S DUCT SIALOLITHIASIS IN A PATIENT WITH MULTIPLE SCLEROSIS: A CASE REPORT

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Aim: sialolithiasis is the leading cause of major salivary gland obstruction, with a prevalence of 60-80% in Wharton's duct. This report aims to describe the surgical management of a salivary stone located in the anterior portion of Wharton's duct in a patient with multiple sclerosis, with a focus on the specific precautions required for this type of treatment.

Methods: a 55-year-old woman with relapsing-remitting multiple sclerosis, undergoing treatment with baclofen and fampridine, presented to our department with painful swelling of the left submandibular region, occurring during meals. A panoramic radiograph followed by ultrasound imaging revealed a salivary stone measuring approximately 31x12 mm, located in the anterior portion of Wharton's duct. Based on the stone's location and the patient's general condition, surgical removal under local anesthesia was performed via an intraoral approach, involving a longitudinal incision of the duct.

Results: the procedure was well tolerated, with an uneventful postoperative course and complete resolution of symptoms. No complications, recurrences, or ductal stenosis were observed during follow-up.

Conclusions: the surgical anatomy of the oral floor and the risk of posterior displacement of the stone require specific precautions to ensure a safe procedure and favorable postoperative outcomes. The chosen approach enabled effective symptom resolution while avoiding more invasive treatments, yielding excellent clinical and functional results.

APPLICATION OF TOOTH GRAFT FROM DECIDUOUS AND PERMANENT IMPACTED TEETH: A CASE REPORT

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Aim: the aim of this case report is to demonstrate the application of tooth grafts derived from deciduous and permanent impacted teeth, processed using Tooth Transformer technology for guided bone regeneration.

Methods: a 19-year-old male patient with an odontogenic abscess related to impacted teeth (elements 46, 45, and 84) was referred to our care. The treatment protocol started with the extraction of these teeth, which collectively weighed 1.76 grams. Then the teeth were cleaned, sectioned using a diamond bur and triturated into granules (0.5-1 mm size) using the Tooth Transformer machine. The graft material was placed into the post-extractive alveolus. A resorbable membrane was applied to protect the site, and closure was achieved using 4.0 resorbable sutures.

Results: at the one-week follow-up, the patient exhibited no pain or swelling, with a stable wound. After 20 days, at suture removal, excellent wound healing was observed, along with successful maintenance of bone volume and healthy, eutrophic mucosa.

Conclusions: the innovative approach of using tooth-derived graft material provides an effective option for enhancing bone regeneration in areas with reduced bone volume. This technique allows for the use of autologous material, enabling both extractions and regenerative procedures to be performed in the same session. Further studies are needed to evaluate long-term outcomes.

SQUAMOUS CELL CARCINOMA (SCC) OF THE LOWER LIP: A CASE REPORT WITH A 3-YEAR FOLLOW-UP

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Aim: lip carcinoma is one of the most common malignant oral neoplasms (accounting for approximately 30% of oral cavity neoplasms), with Squamous Cell Carcinoma (SCC) being the most frequent histological type. Lip lesions are usually detected early due to their location and slow growth. The lower lip is the most frequently affected site, with lymph node metastases occurring in 3% to 29% of patients.

Methods: an 82-year-old male patient presented to the Department of Dentistry at IRCCS San Raffaele Hospital in Milan with an erythematous, scaly lesion with irregular borders on the left side of the lower lip. Clinical examination revealed swelling and ulceration of the affected hemilip. After local anesthetic infiltration, an elliptical incision was made, and the lesion was carefully dissected from the underlying tissues using blunt dissection. Once isolated, the lesion was excised with a cold blade scalpel. A bipolar forceps was used for better hemostatic control, taking care to preserve adjacent anatomical structures such as the inferior labial artery. The flap was sutured with 4/0 resorbable stitches.

Results: histological examination confirmed the diagnosis of squamous cell carcinoma, allowing for a proper diagnostic classification and the establishment of an appropriate schedule of periodic follow-up visits. At the 3-year follow-up, the lesion showed complete remission, with good soft tissue trophism and no scarring.

Conclusions: lip cancer, particularly of the lower lip, is a common oral malignancy with a generally favorable prognosis due to early visibility. Treatment options include surgery, radiotherapy, and chemotherapy. Early-stage detection is key, as surgical excision at this stage is often curative, reducing patient morbidity and biological impact.

SURGICAL EXTRACTION OF DEEPLY IMPACTED TEETH UNRESPONSIVE TO ORTHODONTIC TREATMENT: A CASE REPORT WITH 12-MONTH FOLLOW-UP

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Aim: this case report describes a minimally invasive surgical approach for the extraction of deeply impacted teeth, highlighting the clinical and anatomical factors that contraindicated orthodontic treatment.

Methods: a 20-year-old patient presented with total bony impaction of teeth 46, 47, 17, 18, 27, and 28. Previous orthodontic attempts to align teeth 46 and 47 were unsuccessful due to unfavorable root anatomy and increased mandibular bone density. The main surgical challenges included the depth of impaction and the proximity to the mandibular canal. A combined technique involving rotary instruments and a piezoelectric handpiece was utilized to minimize trauma.

Results: postoperative altered sensitivity of the right lower lip resolved completely within 12 months. Given the reduced thickness of the remaining mandibular bone, the patient was informed of the potential risk of mandibular fracture and was provided with detailed postoperative instructions to prevent complications. Radiographic and clinical follow-up confirmed progressive and complete bone healing.

Conclusions: early diagnosis of dental impactions significantly enhances the potential for successful orthodontic management. When orthodontic recovery is not feasible, surgical extraction remains the only viable option. This case illustrates how a minimally invasive surgical approach can effectively preserve bone and surrounding anatomical structures, including those adjacent to the Inferior Alveolar Nerve (IAN), while ensuring full sensory recovery.

CORRELATION BETWEEN FUNGUS BALL OF MAXILLARY SINUS AND PREVIOUS ROOT CANAL THERAPY: CASE REPORT AND NARRATIVE LITERATURE REVIEW

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Background: Fungus Ball (FB) is a non-invasive mycosis typically found in the paranasal sinuses, predominantly the maxillary sinus.

Aim: this case report describes the diagnosis and treatment of a recurrent maxillary FB in a 58-year-old patient, managed through Functional Endoscopic Sinus Surgery (FESS) combined with an intraoral approach.

Methods: the patient presented with chronic unilateral nasal obstruction and recurrent sinusitis, with imaging studies revealing a heterogeneous mass in the left maxillary sinus. Histopathological examination confirmed the presence of a fungal ball. FESS was utilized to ensure minimal invasiveness and precision in removing the fungal mass while preserving normal sinus anatomy.

Results: the intraoral approach facilitated direct access to the maxillary sinus, to complete the debridement required after recurrence from the first line FESS treatment. Postoperative follow-up showed significant symptomatic relief and no recurrence of the fungal ball.

Conclusions: this case highlights the efficacy of combining FESS with an intraoral approach in treating maxillary fungal balls recurrence, emphasizing the importance of a tailored surgical strategy to achieve optimal Results. The combined approach not only ensures complete removal of the fungal mass but also minimises complications and enhances patient recovery.

RETROSPECTIVE OUTCOMES ASSESSMENT OF ENDODONTIC SURGERY WITH A 3D TEMPLATE FOR GUIDED OSTEOTOMY AND ROOT RESECTION: A PILOT STUDY

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Aim: the aim of this study was to retrospectively assess the clinical and radiographic outcomes of endodontics surgery using 3D guides manufactured in-house and trephines for osteotomy and root-end resection.

Methods: nine root-end resections were performed in 6 patients using this protocol. Specifically, subjects underwent intraoral scan as well as CBCT before surgery. Then DICOM and STL files were matched on dedicated software to develop custom-made surgical guides. During surgery sessions, after guides fitting, mucoperiostal flaps were elevated and targeted ostectomy and root-end resection using a trephine bur rotated within a guide tube were performed. Apical closure was obtained by the means of a calcium-based hydraulic cement.

Results: all treated roots were efficiently cut, and no intra-operative complications occurred. Guided osteotomy and simultaneous root-end resection averaged 8.17±4.92 min. The total mean surgical time was 72.17±26.66 min (range: 31-102 min). Mean postoperative pain scores (NRS-11) progressively decreased from 3.25±0.76 on day 1 to 2.67±0.61 on day 2, and 2.33±1.08 on day 3. Complete radiographic and clinical healing was achieved across all patients by 12 months.

Conclusions: within the limitations of the study, it's possible to conclude that the use of 3D-printed surgical guides for root-end resection yielded promising results, showing how this approach can reduce operating times, patient discomfort and the possibility of failure of the intervention.

PERIODONTAL LESIONS AND PLASMA CELLS: A HISTOLOGICAL STUDY

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Aim: this research is proposed to clarify the inconsistency of a histological pattern resembling Plasma Cellular Gingivitis (PCG) obtained after analysis of a periodontal inflammatory lesion. It aims to evaluate the presence of similar cases and to advance a possible hypothesis on their pathogenesis.

Methods: patients were selected by radiographic examination showing the presence of periradicular lesions with extensive osteolysis and an objective examination in order to exclude endodontic pathogenesis. After extraction of the tooth, the excision of lesion was performed using a cold-bladed scalpel and the specimen was submitted for histological examination.

Results: periodontal lesions with a histological picture similar to the first case were found in four other patients. The histological picture is represented by stromal tissue lined by multilayered epithelium with an infiltrate consisting mainly of plasma cells, typical of PCG. Immunohistochemical investigation for kappa and lambda light chains of immunoglobulins showed polyclonality of plasma cell infiltrate.

Conclusions: in some cases, chronic periodontal lesions characterized by a predominantly plasma cell infiltrate can be found. These lesions may be related to extensive areas of osteolysis and root resorption. The most likely hypothesis is the progression of a chronic inflammatory process due to dysbiosis phenomena and patient predisposition. Further research should be conducted to extend the research sample and better understand the causes of plasma cell accumulation in periodontal lesions.

MEDICATION-RELATED OSTEONECROSIS OF THE JAW (MRONJ): A CASE SERIES IN A COHORT OF CANCER PATIENTS TREATED WITH ANTI-RESORPTIVE DRUGS

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Aim: the aim of this study was to collect clinical data regarding MRONJ cases and evaluate whether the diagnostic and therapeutic approach to MRONJ has a positive impact on the patient's quality of life.

Methods: the patients from the Diagnostic-Therapeutic Assistance Paths (PDTA) at the Odontostomatology Clinic of the University of Modena and Reggio Emilia underwent a dental evaluation before the start of anti-resorptive therapies and, subsequently, were included in a prevention program for dental complications potentially caused by such treatment. The patients' personal and clinical information was entered into a database, organized with 20 significant entries, including for example site of cancer, adherence to prevention program, start and suspension of the anti-resorptive or anti-angiogenic drug therapy, site of MRONJ and possible trigger, stage according to SIPMO, intervention, type of intervention, outcome and follow-up.

Results: in total 50 subjects (69 MRONJ sites) were examined. Surgical treatments of total resection of necrotic bone were the majority (43% of sites) and had a positive outcome in almost all patients (97%). Some patients underwent partial interventions (10% of sites) and still achieved closure of the mucosa and remission of symptoms in 86% of sites. 38% of sites were treated only with medication and biostimulation and achieved remission of symptoms in 92% of cases.

Conclusions: these data encourage to evaluate the possibility of implementing minimally invasive therapy for fragile patients whose health is compromised for oncological reasons.

STUDY OF IMPLANT STABILITY AND BONE HEALING DURING THE HEALING PERIOD USING STATIC MAGNETIC COVER SCREWS

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Aim: this pilot study aimed to evaluate the effects of Static Magnetic Fields (SMFs) on dental implant stability, implant success, and peri-implant soft tissue health over a 90-day period using Resonance Frequency Analysis (RFA).

Methods: five partially or fully edentulous patients (aged 60-65) received two dental implants each in the mandibular molar region (3.6 and 3.7). One implant per patient was fitted with a standard titanium cover screw (control group, G1), and the other with a static magnetic Supercharged® cover screw (test group, G2). Implant stability was measured using RFA at six time points: baseline (T0), day 7 (T7), 14 (T14), 21 (T21), 50 (T50), and 90 (T90). Nonparametric statistical analysis with Bonferroni correction was used to assess differences over time and between groups.

Results: G2 implants showed a progressive and statistically significant increase in ISQ values compared to G1 ($p < 0.0001$), particularly during the early stages of healing. No signs of inflammation or soft tissue complications were observed in either group. SMFs appeared to enhance implant stability and reduce bone resorption during the initial healing phase.

Conclusions: static magnetic fields may positively influence early osseointegration and implant stability. These findings suggest that magnetic cover screws could help accelerate the healing process and reduce the time needed for prosthetic rehabilitation.

MANDIBULAR DISTRACTION OSTEOGENESIS AS A NON-EXTRACTION APPROACH TO JAW CROWDING: CLINICAL AND PERIODONTAL OUTCOMES

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Aim: dental extractions performed to treat crowding due to an imbalance between dentoalveolar and basal bones are often linked to compromised smile integrity and facial aesthetics. Mandibular distraction has been proposed as an alternative to preserve these features. However, adverse effects and technical challenges limited earlier approaches. This study introduces an innovative mandibular distraction technique aimed at supporting periodontal health while achieving significant jaw expansion.

Methods: a double-layer distraction technique was employed to achieve three-dimensional mandibular expansion without using transmucosal anchor devices. The technique's development was demonstrated through a case series. A curved distraction system was incorporated in the latest iteration to enhance periodontal support and alveolar bone formation.

Results: the proposed method effectively treated severe dental crowding without extractions, significantly improving periodontal health and promoting basal bone development. The double-layer strategy reduced the risk of recession, preserved gingival integrity, and ensured proper alveolar adaptation. The technique was also safe, user-friendly, and free from major complications.

Conclusions: this novel technique resolved severe dental crowding without extractions, improving periodontal outcomes and basal bone growth. The double-layer design preserved gingival structures, supported alveolar adaptation, and minimized recession risk. It also proved safe and easy to apply, with no significant adverse events.

CLINICAL CASE OF SURGICAL-ORTHODONTIC RECOVERY OF IMPACTED MAXILLARY CANINE

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Aim: the aim of this work is to present a case of surgical-orthodontic treatment of an impacted 1.3.

Methods: a 16-year-old patient is referred to the authors to perform a surgical-orthodontic recovery of the impacted element 1.3. The patient underwent fixed orthodontic therapy with nickel-titanium and stainless-steel arch sequences to obtain the necessary space, which was then maintained by a stainless-steel closed coil spring. OPT and CBCT were performed showing normo-inclined element 1.3 with unfavourable eruptive path and increased alpha angle in bony inclusion, positioned buccally. Under local anesthesia, the semilunar mucoperiosteal flap and ostectomy are performed to expose the crown of element 1.3. The hard tissues are conditioned to apply the semilunar flap. The hard tissues are conditioned to apply a circular orthodontic button on the exposed surface of the canine in the most occlusal position possible, to which a metal chain has been tied. At the end of the surgical phase, the occlusal-distal traction of element 1.3 was activated by means of an elastic line of action wire tied to the 0.19 x 0.25 steel arch, on which a step bend was performed to further increase the traction arm.

Results: at the 7-day check-up there is good soft tissue healing and initial extrusion of the 1.3 element.

Conclusions: the upper canines are the second most common elements subject to bone impaction, with a prevalence of between 1 and 3%. The treatment of impacted canines often requires a multidisciplinary approach with collaboration between surgeon and orthodontist.

BLUE DIODE LASER-ASSISTED EXCISION OF SCHWANNOMA ON THE TONGUE: A CASE REPORT

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Aim: the study aims to present a case of Schwannoma on the lateral border of the tongue surgically excised by blue diode laser.
Methods: a 66-year-old female patient presented with a painless, slow-growing solitary mass measuring 0.7 x 0.5 x 0.5 cm, located on the lateral border of the tongue. The mass had a smooth surface. Surgical excision was performed using a blue diode laser with the following parameters: wavelength of 445 nm, power of 1.6 watts in pulsed mode and a fiber diameter of 320 µm. The mass was entirely removed, and the excised tissue was immediately fixed in formalin for further analysis.
Results: histopathological analysis revealed a well-encapsulated proliferation of spindle-shaped cells arranged in palisades, accompanied by nerve fibers. Immunohistochemical staining confirmed the diagnosis of schwannoma, with strong positivity for S-100 protein and negativity for NF200 and CD68. A 3-month follow-up showed complete healing of the surgical site without recurrence.
Conclusions: Schwannoma is a rare benign tumor originating from Schwann cells in the nerve sheath of cranial, spinal nerve roots, or peripheral nerves. Approximately 25% occurs in the head and neck, accounting for 1% of all head and neck tumors. The tongue is the most commonly affected site in the oral cavity, followed by the palate, floor of the mouth, buccal mucosa, and lips. Preoperative diagnosis is often difficult and surgical excision with histopathological examination is necessary for confirmation. Laser surgery offers benefits in precision, bleeding control and promoting rapid healing.

FAILURE OF ERUPTION OF THE LOWER PERMANENT FIRST MOLAR: A CASE REPORT

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Aim: this case report describes the management of a first lower permanent molar affected by Primary Failure of Eruption (PFE) in a healthy 14-year-old patient.
Methods: L.T, a 14-year-old male patient, attended the Dental Clinic of the University of Padua for an orthodontic evaluation to assess the delayed eruption of the first lower left molar. A panoramic radiograph and a CBCT of the lower jaw were examined: the presence of an impacted first left lower molar with a fully developed root and a hook-shaped apex was noticed. No mechanical obstruction was observed along the eruption pathway. Bilateral lower second molars did also not erupt. A diagnosis of PFE was made, and, following the actual guidelines, the decision to extract tooth 36 was taken avoiding orthodontic treatment. A palatal orthodontic band was placed on the first upper left molar to avoid dental extrusion, and the surgical procedure was scheduled under local anesthesia combined with conscious sedation. After exposure of the first and second left lower molars through a full-thickness vestibular flap, the first molar was extracted. It was decided to leave the second molar exposed to facilitate its eruption. Periodic follow-up has been planned to observe the eruption of the second molars and to re-evaluate the case for orthodontics.
Results: the healing was uneventful, and the crown of the second molar was visible in the oral cavity. The case is still in progress.
Conclusions: the present case report has been diagnosed and treated as a PFE. Given the fully formed root, hook-shaped apex and absence of changes during follow-up, the current orientation is to extract the tooth with eruptive failure without attempting orthodontic traction.

FULL DIGITAL WORKFLOW FOR IMMEDIATE POST-EXTRACTIVE SINGLE-TOOTH IMPLANT IN AESTHETIC AREA

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Aim: this study presents the clinical case of a patient with a prosthetic failure of tooth 11, treated with immediate post-extractive implant rehabilitation using guided surgery.
Methods: the patient was diagnosed with tooth 1.1, which was considered hopeless due to prosthetic incongruence and alteration of the root. She underwent immediate implant-prosthetic rehabilitation using static-guided surgery and comprehensive management of both hard and soft tissues.
Intraoral scanning and CBCT imaging were acquired to plan the prosthetically-guided implant placement and design the surgical template.
The first surgical step involved atraumatic extraction of tooth 1.1. Following this, the surgical guide was placed with a dental-supporting foundation, and the implant was inserted. Soft tissue management was then performed, including the placement of a Connective Tissue Graft (CTG) within the vestibular flap (tunnel approach), which was sutured in place with a 6/0 resorbable suture.
Finally, a prosthetic crown was placed, supported by an intermediate abutment on tooth 1.1, and the soft tissue healing was guided.
A 3-month follow-up showed perfect restoration of the peri-implant volume.
Results: the results demonstrated healthy, normotrophic, and normochromic peri-implant soft tissues. The radiographic evaluation confirmed successful osteointegration of the implant at position 1.1.
Conclusions: a meticulous virtual case planning phase, combined with proper management of soft and hard tissues, ensures high precision in outcomes, adherence to biological principles, and a lower incidence of intra- and postoperative complications, reducing invasiveness even in very complex cases.

AUTOGENOUS TOOTH TRANSPLANTATION FOR REPLACING A LOST TOOTH: A CASE REPORT

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Aim: this case report shows the replacement of 3.6 tooth through the autogenous transplantation of 3.8 tooth in a young patient.
Methods: a 15-year-old woman comes to the dental emergency department complaining about dental pain in the left lower jaw. Objective and radiographic evaluation assess the irrecoverable status of 3.6 tooth presenting a destructive decay and being unresponsive to the cryo test. Orthopantomography and a CBCT are performed, and thanks to the compatibility of 3.8 crown anatomy with the recipient site and the open apexes of the tooth, autogenous transplantation is performed. After 3.6 tooth atraumatic extraction, 3.8 is taken from the donor site and stabilized into the remodeled recipient alveolar bone with 4/0 vicryl sutures. 3.8 crown is modified to have a better fit into the socket and taken out of occlusion. After 2 weeks, the sutures are removed.
Results: autogenous transplantation of 3.8 tooth into the new alveolar site has successfully replaced 3.6 lost. During every follow-up check at 6 weeks, 4 and 6 months, the vitality of 3.8 is preserved and no dyschromia and no mobility of the tooth are seen. Complete roots formation third apical is assessed by intraoral radiography at 6 months check. A new prosthetic crown will be designed to give a better aesthetic and functional result to 3.8 tooth.
Conclusions: autogenous transplantation is a valid surgical technique to preserve alveolar site after tooth loss in young patients where implant positioning is not indicated. Despite the publication of many care reports, literature still lacks clear-reported guidelines for diagnostic pathways, operative planning and follow-up.

EARLY DIFFERENTIAL DIAGNOSIS IN OSTEOLYTIC LESIONS OF THE JAWS: A PREOPERATIVE CLINICAL APPROACH FOR SURGICAL PLANNING

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Aim: the study aims to highlight the importance of an accurate preoperative differential diagnosis to ensure appropriate surgical planning in the treatment of osteolytic lesions of the jaws.
Methods: a 43-year-old male patient, presented with a noticeable tumefaction on the right mandibular angle. His recent pathological history revealed that the tumefaction had been present for about a year and was asymptomatic. Intraoral examination showed a clear tumefaction with deformation of the retromolar trigone and ascending ramus. Radiographic examination revealed an extensive osteolytic area with well-defined margins in a transitional area between the mandibular angle and right ascending ramus, in an edentulous area. The diagnostic hypothesis was oriented towards the most common osteolytic lesions of the jaws. A surgical approach had to be planned according to the nature of the lesion, ranging from conservative to more invasive procedures, as for a keratocyst or unicystic ameloblastoma.
Results: at the end of the clinical examination, during exploratory puncture a clear yellow citrine sample suggested a benign neoplasm of dental origin. During the surgical procedure, a wall that could be cleaved from the surrounding tissues was indeed identified, and despite its considerable size, it was successfully removed in its entirety while preserving all adjacent tissues.
Conclusions: histological examination allowed a reassessment of the initial diagnosis, identifying a unicystic ameloblastoma. This underscores the crucial role of histopathology in confirming the diagnosis.

COVID-19 AND OSTEONECROSIS OF THE JAW: A CASE REPORT

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Aim: aspergillosis and mucormycosis can range from mild to severe infections, primarily affecting individuals with weakened immune systems, often due to prolonged steroid use. COVID-19 can disrupt immune balance, increasing susceptibility to opportunistic infections. This case report describes a unique and complex presentation of osteonecrosis of the maxilla, complicated by Aspergillosis and Mucormycosis, developed in an immunocompetent patient recovering from COVID-19.
Methods: a 74-year-old male, who had a severe COVID-19 infection 3 months earlier, presented with unilateral rhinorrhea, cacosmia, persistent cough, and frontal headache. He subsequently developed a maxillary sinus infection treated with corticosteroids. Clinical examination revealed an edentulous maxillary ridge, a left oro-antral fistula with purulent exudate, and exposed necrotic bone. The patient was treated with sequestrectomy surgery to remove necrotic bone tissue.
Results: histologic analysis of both sinuses revealed severe lymphoplasmacytic infiltration, bone necrosis, and broad aseptate hyphae, confirming a diagnosis of mucormycosis. The bone sample showed septate hyphae with dichotomous branching, suggesting a coinfection with Actinomyces-like bacteria.
Conclusions: this clinical study showed a potential association between SARS-CoV- 2 infection and osteonecrosis of the jaws, as complication arising from COVID-19- induced coagulopathy, particularly prevalent in long-COVID patients. Furthermore, SARS-CoV-2 may increase the risk of opportunistic superinfections by pathogens such as Aspergillus and Mucor.

PRESERVATION OF THE INFERIOR ALVEOLAR NERVE IN EXCISION OF FOLLICULAR CYST OF THE 35: CASE REPORT

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Aim: a cyst is defined as an endosseous neoformation characterized by a fluid-filled cavity, bordered by an epithelial inner wall and a connective outer lining. The dentigerous cyst typically develops around the crown of an included or retained permanent tooth. This study outlines the surgical approach to a follicular cyst in a pediatric patient.

Methods: a 15-year-old male patient presented at the Interdepartmental Pediatric Dentistry Program of the Azienda Ospedaliera Universitaria Federico II (Naples, Italy) for routine dental care. An orthopanoramic radiograph revealed a pericoronal, asymptomatic, unilocular follicular cyst adjacent to the Inferior Alveolar Nerve (IAN). A cystectomy was performed using a trapezoidal flap technique to preserve the IAN. Following this, vestibular osteotomy was performed, and the cystic lesion was excised, including the extraction of tooth element 35. The cystic cavity was meticulously curetted and treated with Carnoy's fluid before flap repositioning and suturing.

Results: the postoperative course was uneventful, with no complications, paresthesia, or neurosensory disorders observed.

Conclusions: while nerve damage may resolve spontaneously, it has the potential to lead to lasting functional deficits or pain, significantly affecting the patient's quality of life. A thorough understanding of the anatomy and location of the inferior alveolar nerve is essential for effective preoperative planning. Furthermore, a proper surgical approach is crucial for preserving this vital structure and ensuring optimal outcomes.

IMMEDIATE PLACEMENT WITH ONE ABUTMENT ONE TIME PROTOCOL AND ALVEOLAR RIDGE PRESERVATION

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Aim: this article presents the clinical case of a patient with a residual root of 1.4, treated with an immediate post-extractive implant with one abutment one time protocol.

Methods: the patient presents a residual root of 1.4, which was rehabilitated using an immediate post-extractive implant procedure and the management of both hard and soft tissues. CBCT and intraoral scans were obtained to plan the precise implant placement using a prosthetically guided approach.
The procedure began with the atraumatic extraction of the residual root of 1.4. At the end of this phase, the implant insertion was carried out, positioning the implant approximately 4 mm below the soft tissue margin, and performing an alveolar ridge preservation by using xenogeneic material inserted between the surface of the implant and the cortical bone.
Subsequently, the CTG was inserted into the vestibular site using the tunnelling technique and stabilized with 6/0 adsorbable sutures.
Finally, the abutment was screwed to the implant and over it was placed a stabilized provisional crown due to the necessities of immediate function, healing stability and aesthetic reason.

Results: the clinical results revealed great healing of peri-implant soft tissues and osteointegration of the implant, with zero bone loss.

Conclusions: accurate planning, combined with proper management of both soft and hard tissues management, ensures achieving optimal outcomes, while respecting biological principles and minimizing intra and post-operative complications.

SURGICAL MANAGEMENT OF A LARGE MANDIBULAR NEOFORMATION WITH FIXATION PLATE: A CASE REPORT

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Aim: the purpose of this case report is to describe the surgical management of a mandibular neoformation in the third quadrant, emphasizing the importance of preoperative planning to prevent postoperative complications.

Methods: a patient presented for evaluation of a neoformation in the left mandibular region. Surgical excision was performed in an operating room under sterile conditions. An intrasulcular incision was made from 3.1 to the distal portion of the edentulous ridge, with a mesial release at tooth 3.1. The lesion was carefully skeletonized, isolated, and removed while preserving the integrity of the inferior alveolar nerve. The surgical cavity was thoroughly cleaned post-excision. Due to the lesion's significant size and the extent of bone resorption, a fixation plate was placed to prevent mandibular fracture. A hemostatic sponge was inserted into the cavity before closure with resorbable sutures.

Results: the patient underwent an uneventful postoperative course, with no immediate complications. The fixation plate provided structural stability, ensuring mandibular integrity despite extensive bone loss. Follow-up assessments confirmed proper healing and no signs of recurrence.

Conclusions: in extensive mandibular cysts with significant bone erosion, preoperative planning, including the strategic placement of a fixation plate post-excision, is essential to prevent postoperative complications such as pathological fractures. This case highlights the importance of careful surgical execution and multidisciplinary planning to ensure successful patient outcomes.

CLINICAL APPLICATION OF SONIC TECHNOLOGY IN ORAL SURGERY

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Aim: sonic surgery is a valid alternative to traditional oral surgery and finds application in many surgical fields. The aim of this study is to describe the use of sonic technology in the preparation of the implant site and in the extraction of lower third molars.

Methods: sonic surgery with specific inserts (SonicLine, Komet, Verona, Italy) was used to perform the extraction of the third molar 4.8 of a 24-years-old male and, with other inserts (SonoImplant, Komet, Verona, Italy) to perform implant site preparation for positioning of an implant in area 4.6 in a 54-years-old male patient. In the first case, the initial step of the procedure was elevating a mucoperiosteal flap, then sonic insert SFS101 was used to achieve an ostectomy. Subsequently, levers were used to perform the extraction of the element, and the post-extraction site was sutured. In the second case, after the elevation of the mucoperiosteal flap, Sonoimplant SFS99 sonic tips with increasing diameter were used to perform implant site preparation. After inserting the implant, the surgical site was sutured.

Results: after treatment, both patients underwent antibiotic therapy and chlorhexidine 0.20% rinses. Post-operative discomfort for both patients was minimal.

Conclusions: sonic surgery is able to reduce patient discomfort and is safer when the procedure is close to noble structures, as it happens in the cases described given the proximity of the inferior alveolar nerve in the first case to the tooth to be extracted and in the second to the implant site. Despite the advantages described, sonic technology requires longer intraoperative times than traditional surgery.

USE OF GLUBRAN 2 IN UPPER LABIAL FRENULECTOMY AS AN ALTERNATIVE TO SUTURES IN A 12-YEAR-OLD PATIENT: A CASE REPORT

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Aim: a hypertrophic upper labial frenulum with deep insertion can cause diastemas, gingival recession, eruption abnormalities, and periodontal issues in upper incisors, as well as aesthetic and functional concerns. Glubran 2 is a CE-certified synthetic tissue adhesive with adhesive, sealing, hemostatic, and bacteriostatic properties. Upon tissue contact, it rapidly polymerizes, forming a flexible and durable film without causing necrosis. Easy to apply, painless and pediatric-friendly, it offers a promising alternative to sutures. This study evaluates intra and postoperative pain, edema, inflammation, and healing after upper labial frenulectomy using Glubran 2 instead of sutures.

Methods: a 12-year-old patient referred for orthodontic evaluation had a diastema caused by a hypertrophic labial frenulum. After local anesthesia, a diamond-shaped incision was made, the frenulum fibers dissected, and the area irrigated with saline. Glubran 2 was applied drop by drop using an endodontic needle. Polymerization began within 1-2 seconds and was completed in 60 seconds, stopping bleeding and forming a thin protective film.

Results: one week postoperatively, no inflammation or edema was observed, and the patient reported no pain. Further follow-ups are scheduled at 14 and 21 days.

Conclusions: Glubran 2 proved to be a reliable alternative to sutures in pediatric oral surgery, making frenectomies faster and less painful.

TREATMENT OF A RARE MAXILLARY RETROGRADE PERI-IMPLANTITIS: CASE REPORT

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Aim: this report presents the diagnosis and management of a case of retrograde peri-implantitis associated with cyst formation. Retrograde peri-implantitis is a clinically symptomatic periapical lesion that develops after implant placement with bone resorption occurring only in the apical third of the implant. Possible causes include implant contamination, pre-existing endodontic pathology, improper site preparation or residual root fragments. These factors may trigger chronic inflammation or infection, with granulation tissue potentially leading to cyst formation.

Methods: an 85-year-old patient presented with a 4 cm osteolytic lesion. Radiological exams confirmed a radiolucent lesion with a radiopaque rim. Under general anesthesia, a mucoperiosteal flap was elevated, exposing the lesion. The lesion was excised, and the ajected apical portion of the implant was removed to prevent recurrence. The flap was sutured with absorbable sutures, and a histopathological examination was performed. Artificial material found inside suggested poor resorption of a collagen membrane from a previous, undocumented implant placement.

Results: a 12-month clinical and radiological follow-up showed no signs of inflammation or infection. The fixed prosthesis remained stable and OPT confirmed site reossification. Histopathology identified a 4 cm odontogenic cyst with extensive wall fibrosis.

Conclusions: this case highlights the successful management of retrograde peri-implantitis through implant apicoectomy as an alternative to implant removal or surface debridement.

TRANS-MIGRATORY CANINE AUTOTRANSPLANTATION: A CASE REPORT

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Aim: Ectopia is defined as the presence of a tooth element not in its natural location. Dental trans-migration represents a rare form of dental ectopia, with an incidence of 0.31%. This report presents a case of dental autotransplantation of the previously ectopic element 3.3 in a young patient.

Methods: a 13-year-old patient was referred to perform autotransplantation of the included 3.3 element. The patient underwent fixed orthodontic therapy to obtain the necessary treatment space. Radiographic examinations (OPT and CBCT) showed a reversed and oblique trans-migration of the 3.3 element, with bone inclusion at the level of the chin symphysis. Under general anaesthesia, mucoperiosteal flap, ostectomy, dislocation and atraumatic avulsion of element 3.3 was performed. Subsequently, preparation of the edentulous site at 3.3 was performed using a sequence of implant drills and ostectomy of the buccal cortical with a piezoelectric instrument in order to obtain a greenwood fracture to create a suitable recipient site. Element 3.3 was autotransplanted into the recipient site and, finally, a fixed composite splint was applied on teeth 3.2 and 3.4.

Results: at 40 days after treatment, control showed complete soft tissue healing, with element 3.3 showing physiological mobility, no pain on percussion, and a normal response to the vitality test.

Conclusions: dental autotransplantation, following orthodontic therapy, has proven to be an excellent conservative solution. Treatment of this condition requires a multidisciplinary approach involving close collaboration between surgeon and orthodontist to ensure the best functional and aesthetic results for the patient.

LOWER LIP FIBROMA: ADVANTAGES OF TREATMENT WITH THE USE OF ELECTROSURGERY

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Aim: the aim of this study was to evaluate the advantages of electrosurgery in intraoperative and postoperative phases of the treatment of fibroma.

Methods: an 80-year-old man presented a smooth-surfaced 3 cm wide lesion in the mandibular vestibule involving the inferior labial frenulum; traumatic aetiology was both suggested by the mucosa-like color of the hyperplastic tissue and by keratosis areas contiguous to the lesion. It was planned for a surgical excision and a histological exam of the neoformation. Local anesthesia with 2% mepivacaine was performed and an electrosurgical scalpel was selected to operate at the pedunculated base of the lesion: the electric current emitted by the electrosurgical unit allowed to cut through the tissue and coagulate at the same time. Visual Analogue Scale (VAS), intraoperative bleeding and post-operative discomfort were investigated.

Results: a 7-day follow-up revealed satisfying healing by secondary intention and the absence of post-operative scar marks; patient's pain progression also recorded significantly low VAS scores. The histological exam revealed an oral fibroma.

Conclusions: the application of diathermo-coagulation principle resulted in less bleeding and therefore a clearer intraoperative visuality, ensuring the complete excision of the lesion. Furthermore, electrosurgical scalpel assured a faster recovery and less post-operative pain and discomfort.

UTILIZING PIEZOELECTRIC LEVERS FOR THIRD MOLAR EXTRACTIONS: ANALYSIS OF TWO CLINICAL CASES

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Aim: this study evaluates the impact of using piezoelectric levers in third molar extraction surgeries by analyzing two clinical cases.
Methods: two patients required the extraction of their wisdom teeth (1.8-4.8 and 2.8-3.8). Given the proximity of these teeth to critical anatomical structures, piezoelectric levers were chosen to minimize surgical trauma.
The procedure followed a standardized protocol: a mucoperiosteal flap was incised and lifted, followed by syndesmotory using a Mectron (Mectron S.p.A., Carasco, Italy) EX1 piezoelectric chisel insert. A pericoronal osteotomy was performed with the OT7 micro-saw insert to fully expose the crown. Upper third molars were extracted intact, whereas lower third molars were sectioned into mesial and distal portions using a conical bur and a conventional lever. The final extraction was performed with the EXL-2 piezoelectric short lever, and the socket was sutured with single-stitch sutures.
Results: both patients required pain medication only on the first postoperative day and reported minimal discomfort. Healing progressed without complications.
Conclusions: enhanced visibility of the surgical field allowed for precise ostectomy, enabling minimally invasive extraction of impacted molars. This approach contributes to bone preservation, potentially improving conditions for future implant placement.

BLEOMYCIN ELECTROSCLEROTHERAPY TREATMENT IN THE MANAGEMENT OF VASCULAR MALFORMATION IN THE APEX OF THE TONGUE: A CASE REPORT

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Aim: this case report evaluates the safety and efficacy of Bleomycin Electrosclerotherapy (BES) for treating a vascular malformation at the apex of the tongue, a rare location that significantly impacts oral function.
Methods: a 70-year-old female patient with a vascular malformation at the apex of the tongue underwent BES under general anesthesia at the Maxillofacial Surgery and Odontostomatology Clinic, Maggiore Hospital, Trieste, Italy, in February 2025. A 1 cm finger electrode delivered two impulses with settings of 8 trains, 400 V, 100 µs, and 5000 Hz. A minor bleeding episode was controlled with compressive gauze soaked in tranexamic acid and sutured with 4-0 Vicryl. The follow-up was conducted at 24 hours, 7 days, and 1 month, with monitoring for up to one year to assess long-term outcomes and potential recurrence.
Results: the procedure led to a significant reduction in the size of the malformation, with no major complications. The patient reported marked improvement in speech and swallowing at one month. Postoperative pain was minimal, and there were no signs of recurrence. Bleeding was well-controlled, and no other complications occurred.
Conclusions: BES is a safe and effective treatment for vascular malformations of the tongue, offering a minimally invasive alternative to surgery. This case demonstrated excellent clinical outcomes, and long-term follow-up is essential to evaluate sustained efficacy and monitor potential complications. Further studies are needed to confirm its long-term safety and effectiveness.

THE USE OF A MAGNETIC INTERCHANGEABLE SURGICAL TEMPLATE IN ENDODONTIC MICRO-SURGERY: A CASE REPORT

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Aim: this study introduces a new surgical template designed for endodontic microsurgery using Piezosurgery®. The template, created with computer- aided design/computer-aided manufacturing (CAD-CAM) technologies, aims to enhance the precision of root-end resections by providing individualized guidance for the surgical procedure.

Methods: the patient presented periapical lesions on each maxillary incisor confirmed by CBCT. DICOM files and STL data obtained from an extraoral cast scanning were imported to a dental CAD software. The surgical template, made by Implant 3D®, Media Lab S.p.A, was composed by a single dental and bone supported frame, non-removable during surgical procedures, to which two secondary removable templates (A and B) were connected through magnets.

Results: the new surgical template presented in this study allowed accurate root-end resections, ensuring optimal root sealing while minimizing damage to surrounding tissues. Clinical roots resections were 3 mm from the apex. Radiographical evaluations were performed 3, 6 and 12 months after surgery, showing the absence of radiolucent lesions on treated teeth.

Conclusions: the high precision guaranteed by the templates makes the procedure particularly suitable for the treatment of anatomically complex scenarios including lesions close to the nerve, the maxillary sinus, and arteries. The template's design aims to improve accuracy and reduce the risk of surgical errors compared to freehand procedures, promoting better healing and fewer complications.

COMPOUND MAXILLARY ODONTOMA: INCIDENTAL FINDING OF DELAYED ERUPTION IN A GROWING PATIENT AND ORTHO-SURGICAL CASE MANAGEMENT

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Aim: odontomas are benign mixed odontogenic tumors, typically asymptomatic and non-aggressive, often associated with delayed tooth eruption. We present a case of a compound odontoma, incidentally discovered in a young patient with impaction of teeth 1.4 and 1.5, managed through a combined orthodontic and surgical approach.

Methods: a 13-year-old male patient with an unremarkable medical history presented with dental crowding and delayed exfoliation of teeth 5.4 and 5.5 compared to the contralateral side. Clinical and radiographic assessment (panoramic X-ray and subsequent CBCT) revealed a compound odontoma associated with the impaction of teeth 1.4 and 1.5. Treatment included extraction of 5.4 and 5.5 and removal of the odontoma using piezosurgery, followed by orthodontic intervention.

Results: the postoperative course was uneventful, with spontaneous eruption of tooth 1.5. Orthodontic treatment to recover tooth 1.4 was initiated with extraoral traction (Equi C) to distalize the upper molars. Follow-up panoramic radiographs showed space opening for tooth 1.4 and initial tooth movement.

Conclusions: odontomas may be a cause of delayed tooth eruption. In pediatric patients with asynchronous dental exfoliation, it is essential to investigate underlying causes. In our case, a multidisciplinary approach highlighted the importance of early diagnosis and integrated treatment to achieve optimal functional and aesthetic outcomes.

MANAGEMENT OF DENTAL ABNORMALITIES IN A PATIENT WITH AARSKOG-SCOTT SYNDROME: CASE REPORT

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Aim: this case report describes the management of dental anomalies in a pediatric patient with Aarskog-Scott Syndrome (AAS), with particular emphasis on the clinical and radiological decision-making process that led to the extraction of malformed lateral incisors.

Methods: a 6-year-old boy diagnosed with AAS presented to our Department of Maternal and Child Dentistry with pain and swelling. Clinical examination and first-level imaging (orthopantomography and periapical radiographs) revealed abnormal morphology and size of the permanent lateral incisors (teeth 1.2 and 2.2). Due to unclear anatomy, a Cone-Beam Computed Tomography (CBCT) scan was performed, which confirmed the presence of structural anomalies. Based on these findings, a surgical plan was developed for the extraction of teeth 1.2 and 2.2.

Results: surgical extraction was performed under general anesthesia. The procedure resolved the acute infection and prevented further dental complications. Histopathological analysis revealed dental structures with dentin thickening, an enlarged pulp chamber, and tissue consistent with a compound odontoma.

Conclusions: in patients with AAS, early identification of dental anomalies is essential for appropriate treatment planning and the prevention of emergencies. Surgical removal of malformed teeth may be necessary to avoid occlusal imbalance, facial asymmetry, and recurrent infections.

DENTAL TRANSPLANTS AND REIMPLANTS AS A SURGICAL OPTION FOR DIFFERENT CLINICAL SITUATIONS: A CASE SERIES

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Aim: this case series was conducted to evaluate the autotransplantation of developing tooth germs or teeth with incompletely formed roots, originally deemed hopeless in their physiological location, or used to replace compromised teeth.

Methods: three patients underwent the surgical procedure. A thorough clinical and radiographic assessment, including CBCT scans, was performed to determine the extent of eruption impairment of the tooth germ or the non-recoverability of the tooth to be replaced, as well as the anatomical factors critical for transplantation, specifically, the anatomy of the germ, bone quality, and morphology of the recipient socket.

After administration of local anesthesia using 2% Mepivacaine with vasoconstrictor, a full-thickness flap was raised, followed by osteotomy to either extract the compromised tooth or create a surgical socket. The germ was preserved in a physiological solution to maintain the integrity of the periodontal ligament and preserve tooth vitality. It was then stabilized in situ using heterologous fibrin glue (Tisseel), and in cases of more advanced root development, additionally supported with splinting. Finally, the flap was repositioned and sutured with 5/0 Vicryl.

Results: sutures were removed after 7 days. A follow-up radiograph showed bone healing and no pathological changes around the transplanted tooth. The transplanted elements remain in situ and are currently being monitored for continued development and eruption.

Conclusions: in young patients, autotransplantation of developing tooth germs to replace compromised teeth can be a valid option to avoid or delay future implant-prosthetic rehabilitation.

LEUKOCYTE- AND PLATELET-RICH FIBRIN (L-PRF) AND PLATELET-RICH PLASMA (PRP) IN THE MANAGEMENT OF A MEDICATION RELATED OSTEONECROSIS OF THE JAW (MRONJ)

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Aim: the study aims to demonstrate the treatment outcome of Medication-Related Osteonecrosis of the Jaw (MRONJ) with surgical sequestrectomy and application of Leukocyte- and Platelet-rich Fibrin (L-PRF) and subsequent injection with Platelet-Rich Plasma (PRP).

Methods: conventional surgical sequestrectomy was performed in three patients affected with MRONJ stage 2; all of the patients in maxilla, with history of bone-modifying agents administration (denosumab, fosavance, xgeva). The L-PRF membranes and PRP were prepared through centrifuging collected blood in 9 ml tubes without anticoagulant at 2700 rpm for 12 minutes using Instraspin™ centrifuge (Intra-Lock International, Boca Raton, FL, USA). The surgical sites were covered by L-PRF membranes and performed flaps were sutured. PRP was injected externally immediately postoperative. The PRP injection was repeated after 3 weeks. All the patients were subjected to 4 follow-ups: 1 week, 3 weeks, 3 months, and 6 months with Computed Tomography (CT) scans.

Results: complete healing was observed in 2 patients and clinical improvement in 1 patient at 6 months follow-up. Comparing the preoperative and postoperative radiographs, signs of bone reformation were observed at defect sites.

Conclusions: from this experience, the addition of PRP injection to surgical approach with L-PRF adjuvant seems to be effective and may improve the treatment outcome of MRONJ and decrease the possible postoperative complications. Further studies are needed to investigate the effectiveness of adding PRP injections to the surgical approach in the management of MRONJ.

POSTOPERATIVE PAIN AND EDEMA EVALUATION IN ANTICOAGULATED PATIENTS UNDERGOING DENTAL EXTRACTIONS

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Aim: this study aims to evaluate post-operative pain and swelling in patients undergoing low-risk dental extractions (1-4 teeth) while receiving Direct Oral Anticoagulant (DOAC) therapy, with preserved renal function (glomerular filtration rate ≥30 mL/min).

Methods: a total of 17 patients (9 males, 8 females) aged 50-70 years were included. Each patient underwent two separate procedures: in the case group, anticoagulant therapy was maintained, and Concentrated Growth Factors (CGF) were used for hemostasis; in the control group, anticoagulant therapy was interrupted, and fibrin sponges were applied. Post-operative pain and edema were assessed at 24 and 48 hours based on patient-reported yes/no responses during follow-up.

Results: in the CGF group, 24% of patients experienced edema at 24 hours, with 75% persisting at 48 hours, while 18% reported pain, persisting in 33% of cases. In the control group, edema was observed in 47% of patients at 24 hours, persisting in 63%, while pain was reported in 35% of cases, with 17% persisting at 48 hours.

Conclusions: the findings suggest that CGF is an effective local hemostatic agent that may reduce post-operative edema and pain compared to fibrin sponges.

CROSS-LINKED HYALURONIC ACID (XHYA) IN THE REPAIR OF ORAL SOFT TISSUE SURGICAL DEFECTS

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Aim: cross-linked HA (xHyA) is a synthetic molecule obtained chemically by making structural modifications to the native form of hyaluronic acid (nHA). Compared to nHA, this molecule possesses better clinical characteristics as it is more resistant to mechanical stress and degradation processes. The physical-chemical properties of cross-linked hyaluronic acid, combined with its bacteriostatic, anti-inflammatory and direct action in the repair process, justify the regenerative potential of this molecule. The case series reported in this paper describes an innovative surgical approach in the management of oral carcinomas involving the combined use of laser surgery, xHyA and the placement of a resorbable porcine pericardium membrane.

Methods: we describe the surgical management of five cases of in situ or microinvasive carcinoma of the oral cavity. For all cases, after the lesion excision performed using an Nd:YAG laser (1064 nm, 3.5 W, 60 Hz), an xHyA gel was applied to the bottom of the surgical wound. Finally, a resorbable membrane, shaped following defect margins, was placed to cover the defect and secured with resorbable sutures.

Results: in all reported cases, a reduction in the re-epithelization time of the surgical site was observed, with complete healing achieved within two months, in complete absence of functional limitations and scar retraction.

Conclusions: although our current results are promising in terms of wound healing, randomized controlled trials are needed to confirm our observations and evaluate the effects of this promising molecule on a larger population.

THE APPLICATION OF DIGITAL WORKFLOW IN SUPERNUMERARY TEETH EXTRACTION

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Aim: Hyperdontia is a numerical dental anomaly, often asymptomatic and diagnosed incidentally. However, it can lead to delayed eruption, tooth displacement, crowding and dentigerous cysts. Surgical extraction is the treatment of choice, requiring precision to minimize flap extension and ostectomy while preserving adjacent structures. This study evaluates the effectiveness of a fully digital workflow for supernumerary tooth extraction.

Methods: a digital workflow was used for case planning, surgical guide design and 3D-printed templates. Six extractions were performed on four patients. The protocol included intraoral scanning and CBCT acquisition, followed by merging DICOM and STL files using dedicated software. A custom surgical guide was used to perform a mucoperiosteal flap and guided osteotomy. Bone defect size and surgical duration were recorded. Postoperative pain was evaluated using the VAS scale.

Results: all extractions were successful, with no complications. Guided osteotomy reduced supernumerary identification time and bone removal, leading to faster healing, reduced swelling, and less pain. The mean VAS score was 1.42±0.67/10. Radiographic follow-up at six months confirmed complete bone healing.

Conclusions: a fully digital workflow for supernumerary tooth extraction enhances surgical accuracy and improves patient outcomes, showing promising clinical results.

PRE-CLINICAL *IN VIVO* TRIAL OF A NOVEL SOYBEAN OIL-BASED 3D PRINTED RESIN MEMBRANE USED FOR VERTICAL GUIDED BONE REGENERATION

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Aim: this study explores the use of a 3D-printed membrane made from Acrylate Epoxidized Soybean Oil (AESO) combined with a xenogeneic graft for treating critical-sized bone defects.
Methods: forty-eight male Sprague Dawley rats (150 g) were assigned to four groups: a Negative Control group (NC, blood clot only), a Positive Control group (PC, biomaterial without membrane), a Negative Test group (NT, blood clot with membrane), and a Positive Test group (PT, biomaterial with membrane). In each animal, a 15 mm incision was made along the midline of the skull, a critical-size bone defect measuring 7 mm in diameter was then created using a trephine bur. Each experimental group received the proposed treatment.
Results: the PT group showed the highest bone volume (with 1.46±0.44 mm^3 at 8 weeks) and superior newly bone formation (with 7.58%±0.79% at 8 weeks) compared to the control groups. The PT group demonstrated highest trabecularnumber (Tb.N) values at both evaluation periods. Regarding trabecular thickness (Tb.Th), the negative test group exhibited highest values. Histological analysis confirmed centripetal bone formation.
Conclusions: the AESO-based membrane provided mechanical support and controlled resorption, overcoming the limitations of collagen membranes. When combined with GTO® graft material, it enhanced osteoconduction, bone formation, and bone quality, highlighting its potential in complex bone defect reconstructions.
This work was supported by MIUR, PRIN 2020, Project 2020F23HZ7, CUP E85F22000230006.

EVALUATION OF THE PERCEIVED DIFFICULTY FOR MANDIBULAR THIRD MOLAR EXTRACTION AMONG DENTAL STUDENTS, GRADUATES AND ACADEMIC STAFF: A CROSS-SECTIONAL COMPARATIVE STUDY

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Aim: to evaluate differences in the perceived difficulty of mandibular third molar extraction among dental students, graduates, and academic staff.
Methods: participants from Università Cattolica del Sacro Cuore (Rome) with different levels of education observed a panoramic radiograph for 2 minutes, focusing on tooth 4.8. Subsequently, they completed a 20-item questionnaire assessing diagnostic parameters. Intra- and inter-examiner reliability was evaluated using the Intraclass Correlation Coefficient (ICC), with a threshold of 0.7 set as the minimum acceptable value.
Results: surgical difficulty was assessed using the Gay-Escoda surgical difficulty form. The mean scores were: academic staff 45.75 (SD 6.8), graduates >5 years 43.6 (SD 5.85), graduates <5 years 43.5 (SD 6.16), and students 44 (SD 5.43). ICC showed excellent agreement between academic staff and graduates >5 years (0.85, 95% CI -0.21 to 0.99), moderate agreement with graduates <5 years (0.53, 95% CI -1.4 to 0.97), and poor agreement with students (-0.35, 95% CI -8.5 to 0.93).
Conclusions: high agreement in the assessment of third molar surgical difficulty was found between academic staff and dentists with more than 5 years of clinical experience as evidence of how clinical training and repeated exposure to similar cases improve the accuracy and reproducibility of surgical difficulty evaluation. The low agreement between academic staff and students highlights the role of clinical exposure and diagnostic training in improving the accuracy of surgical decision-making.

OSTEOINDUCTIVITY EVALUATION IN ROOM TEMPERATURE (RT) STORAGE *VS* FRESH TOOTH SAMPLES: AN *IN VITRO* STUDY

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Aim: the aim of this study was to evaluate in vitro whether the type of tooth preservation prior to treatment with the Tooth Transformer® (TT) device affects the osteoinductive characteristics of the extracted tooth.

Methods: twenty teeth extracted from healthy, non-smoking patients were selected. All teeth were cleaned of caries, tartar, and filling materials, then roughly sectioned and divided into two experimental groups based on the type of storage: Room Temperature (RT) tooth samples and fresh tooth samples. Each sample was minced, demineralized, and disinfected using the TT device. The samples were analyzed using the ELISA test and the Western Blot analysis.

Results: the ELISA (Enzyme-Linked ImmunoSorbent Assay) test revealed the presence of Bone Morphogenetic Protein-2 (BMP-2) and Type I Collagen (COL-I) in all samples, demonstrating that fresh teeth retained the highest amount of osteoinductive proteins. In contrast, the Room Temperature (RT) samples showed the greatest loss of BMP-2 and COL-I. Western Blot analysis confirmed the presence of LIM Mineralization Protein-1 (LMP-1) and Transforming Growth Factor-β (TGF-β) in all examined tooth samples. Fresh tooth samples exhibited significantly higher LMP-1 levels compared to the room temperature samples. Conversely, TGF-β levels were similar across all tooth samples, regardless of storage type.

Conclusions: the experimental results suggest that the extracted tooth should be processed with the TT device as soon as possible to maximize its osteoinductive potential in bone preservation and regeneration surgical procedures.

THE ADDITION OF HETEROLOGOUS COLLAGEN GEL TO BONE SUBSTITUTES INFLUENCES THE ENVIRONMENT FOR BONE-FORMING CELL ACTIVITIES

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In this study, an *in vitro* culture of oral osteoblasts was used to investigate the extracellular environment and the activities of cells seeded with different bone substitutes. Four TEST groups (GTO, Gen-OS, TSV gel, Gen-OS+TSV) and untreated cells as control group (CTRL) were compared. OsteoBiol® GTO® is made up of 80% heterologous collagenic bone granules (size from 0.6 to 1 mm) blended with 20% TSV gel. OsteoBiol® Gen-Os® are xenogenic collagenic bone granules (size from 0.25 to 1 mm). TSV gel is a copolymer containing type I and III collagen. Gen-Os+TSV are Gen-Os® granules mixed with TSV gel (50:50, %). Gen-OS and TSV gel groups promoted calcium and collagen deposition by osteoblasts. While Gen-OS+TSV and GTO groups promoted osteoblast proliferation, indicating a cell growth and spindle-like osteoblasts with good attachment to the particles was observed. Gen-Os+TSV and GTO groups showed significantly higher ALP activity, calcium and collagen deposition indicating a promotion of mineralization activity. Gen-Os+TSV and GTO groups also stimulated the expression of osteogenic markers ALP, OCN, BMP-2 and of integrins indicating a promotion of cell adhesion. All bone substitutes made the cell culture medium alkaline, with the highest values in Gen-OS+TSV and GTO. Moreover, a significant increment in extracellular phosphate and calcium ions was observed in Gen-Os+TSV and GTO groups. These findings suggest that collagen TSV gel appears to have a positive effect on osteoblastic activities, but the best results were observed when TSV gel is associated with biomaterial granules.

TOOTH GRAFT CREATION: ANALYSIS OF TEETH PREPARATION BEFORE GRINDING PHASE

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Aim: the aim of this study is to evaluate the procedures required for the teeth preparation phase necessary for the creation of a tooth graft, with a particular focus on time, weight and learning curve.

Methods: a total of 90 extracted teeth were selected: 30 single-rooted, 30 bi-rooted, and 30 multi-rooted teeth. Each group was further divided into three subgroups: 10 intact teeth, 10 with fillings, and 10 endodontically treated teeth. Each element was weighed before and after the sectioning procedure. The sectioning process was performed using a Lindemann bur and registered with a chronometer.

Results: sectioning time involved a maximum of 3m 03s in cases of filled multi-rooted teeth and a minimum of 45s in intact single-rooted teeth, with an average time of about 2m 01s. Material loss varied according to teeth's type and condition: the highest value was recorded in filled multi-rooted teeth (0.8958 g), while the lowest was in single-rooted endodontically treated teeth (0.2291 g), with an average weight loss percentage of respectively 36.81% and 21.74%. Overall average teeth loss was reported to be 27,65%.

Conclusions: the sectioning procedure does not require a large amount of time and may vary depending on the operator's experience and the type of tooth. The minimum amount obtained by weight is sufficient to obtain adequate grafting material.

NEW REABSORBABLE BIOMATERIAL FOR 3D PRINTING IN GUIDED BONE REGENERATION: AN *IN VITRO* STUDY

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Aim: this study evaluates the degradability of two Acrylated Epoxidized Soybean Oils (AESO): pure AESO and AESO diluted with Soybean Oil (SO) for bioprintability applications in GBR procedures.

Methods: two types of samples were prepared, AESO and AESO/SO (77.8/ 22.2%) and they have been subjected to different tests: Viscosity test, Fourier-Transform Infrared Spectroscopy Analysis, Degradation Tests, Hydrolytic Degradation Test, Oxidative Degradation Test, Enzymatic Degradation Test, Cell–Material Interaction and Statistical Analysis.

Results: at chemical and physical analysis the test material resulted suitable for biomedical use. The degradation test revealed that AESO samples lost 4,12% while AESO/SO samples lost 29.45% of their weight after 60 days combining both enzymatic and oxidative degradation. The cells grown on AESO and AESO/SO samples have shown similar mortality rates compared to control groups demonstrating no statistical differences, reinforcing the evidence of the low cytotoxicity of AESO and AESO/SO.

Conclusions: this work demonstrated that both pure and diluted AESO can degrade under conditions similar to those found in biological systems. The calculated toxicity values indicate low cytotoxicity, suggesting these materials are relatively safe for potential biomedical applications. This finding supports the development of biomaterials aimed at improving the safety and effectiveness of medical treatments while addressing clinical challenges. This work was supported by MIUR, PRIN 2020, Project 2020F23HZ7, CUP E85F22000230006.

EVALUATION OF FROZEN TOOTH AS BONE REGENERATION MATERIAL

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Aim: the aim of this *in vitro* study is to understand if different ways of preservation of extracted teeth prepared with the Tooth Transformer® (TT) influence the osteoinductivity of these ones.

Methods: 20 teeth have been extracted and before they have been put in the Tooth Trasformer, they have been subjected to 2 different ways of storage: teeth frozen at -20°C and fresh teeth.
Then using the Tooth Transformer â device each sample was minced, demineralized and disinfected. Subsequent analyses were performed on the granules.

Results: fresh tooth samples, processed using the Tooth Transformer, immediately after collection, showed the highest BMP-2 content but also frozen teeth showed an optimal preservation of this osteoinductive protein. Furthermore both kind of samples showed high levels of LMP-1.
At least COL-I and TGF-β levels were similar in all samples examined.

Conclusions: when teeth are frozen at -20°C, the cold environment slows down the protein degradation. But the decrease in BMP-2 levels compared to fresh teeth suggests that even freezing cannot completely stop the degradation of these valuable proteins.
This persistent decline may be due to freeze-thaw cycles, which can cause a gradual denaturation of the protein over time.
The finding of the higher amount of proteins in the fresh tooth samples allowed us to conclude that the extracted tooth should be treated as soon as possible with the Tooth Transformer® to improve its osteoinductive potential.

CSDS CLASSIFICATION IN ASSESSING THIRD MOLAR EXTRACTION COMPLEXITY

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Aim: assessing the complexity of third molar extraction is essential for surgical planning, minimizing postoperative morbidity and informing patients. This study evaluates whether preoperative classification using Pederson and CSDS systems predicts surgical complexity.

Methods: this prospective study involved 80 healthy patients with impacted lower third molars. Each case was classified using Pederson and CSDS systems. The following variables were assessed: corticomedullary ostectomy, odontotomy, root sectioning, and procedure duration. Each parameter was scored, and the sum represented the surgical difficulty encountered.

Results: correlations among the variables were analyzed using Spearman's test, with R and p values significant for $p < 0.05$. The R coefficient measured the correlation between (1) Pederson or CSDS classification and (2) surgical complexity, duration, and corticomedullary ostectomy, ranging from 0 (no correlation) to 1 (perfect correlation). CSDS classification showed a statistically significant correlation with surgical complexity indicators.

Conclusions: preoperative assessment using CSDS classification aligns with intraoperative complexity. This system may aid in estimating surgical duration, optimizing daily schedules, and providing accurate preoperative information to patient.

COMBINED SURGICAL APPROACH IN COMPLEX THIRD MOLAR EXTRACTION

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Aim: this study aims to assess the safety and efficacy of a combined surgical approach for extracting tooth 38, in close contact with the inferior alveolar nerve passing between its roots.

Methods: preoperative 3D reconstruction of tooth 38 was performed to evaluate its anatomy and the trajectory of the inferior alveolar nerve. The surgical procedure included an intrasulcular flap from tooth 37 to the distal of tooth 38, vestibular osteotomy, odontotomy, and extraction of teeth 38 and 37, following intraoperative evaluation which determined it to be non-preservable. The inferior alveolar nerve was carefully identified and preserved.

Postoperative CT imaging with 3D reconstruction confirmed the success of the surgery. The proposed surgical technique is a combined approach, utilizing traditional methods for osteotomy and odontotomy, in conjunction with piezoelectric technique for completing deep osteotomies and root separation of the four roots.

Results: the combined surgical approach enabled safe extraction of the teeth while preserving the integrity of the inferior alveolar nerve, with successful outcomes confirmed by postoperative imaging. Preoperative 3D planning guided the surgical strategy, and piezoelectric surgery minimized nerve risk.

Conclusions: this case demonstrates that combining traditional surgical techniques with piezoelectric surgery offers a safe and efficient method for extracting complex tooth structures while preserving vital anatomical elements.

DENTIST-PATIENT COMMUNICATION AND PATIENTS' COMPREHENSION OF POST-SURGICAL BEHAVIORAL INSTRUCTIONS: A PILOT STUDY

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Aim: this study aims to evaluate and analyze the degree of patient comprehension regarding post-operative instructions provided by dentists following tooth extraction surgery. It also seeks to identify potential difficulties in understanding these instructions and to establish a foundation for developing strategies to improve dentist-patient communication.

Methods: data were collected through questionnaires and interviews to assess patients' ability to recall and apply the post-operative recommendations they received. Patients were randomly divided into two groups: in the first one, written post-operative instructions were provided, whereas in the second group, no written instructions were given. This approach was designed not only to evaluate the level of understanding of the post-surgery recommendations but also to determine the potential benefit of having written instructions available.

Results: the findings highlight a reduced comprehension of post-operative recommendations among patients, with this difficulty becoming more pronounced with increasing patient age and lower levels of education. Additionally, patients in Group 1, who received written instructions, demonstrated better adherence to post-operative instructions compared to those in Group 2. This suggests the importance of visual support in enhancing medical communication.

Conclusions: the results of this study reveal significant gaps in patient understanding and application of post-operative guidelines. This research could contribute to improving the quality of post-operative care, reducing the risk of complications.

EVALUATION OF ALVEOLAR BONE LOSS USING INTRAORAL SCANNER AFTER DENTAL EXTRACTION AND L-PRF APPLICATION: A PRELIMINARY STUDY

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Aim: the study aims to share our experience in using an intraoral scanner to measure the amount of alveolar bone loss after dental extraction with Leukocyte- and Platelet-Rich Fibrin (L-PRF) application.

Methods: a 78-year-old female patient was referred to our department for multiple dental extractions in both maxilla and mandible. For L-PRF preparation, peripheral blood was collected in 9 ml tubes without anticoagulant and centrifuged at 2700 rpm for 12 mins using Instraspin™ centrifuge (Intra-Lock International, Boca Raton, FL, USA). The L-PRF membranes were applied following maxillary extractions, while mandibular extractions were performed without L-PRF. Three intraoral full arch scans (before extraction, immediately post, and after 1 month) were performed on each arch using Medit I700 intraoral scanner (Medit; Seoul, South Korea). Medit Smile Design software was used to compare measurements of obtained scans.

Results: colorimetric scale comparison revealed alveolar bone contraction in both arches with apparent extensive alveolar contraction in mandible. Volumetric measurements revealed a difference between scans of 2.641mm^3 in maxilla and 4.684 mm^3 in mandible. Vestibular-lingual or palatal distance analysis revealed a maximum contraction of 0.548 mm in maxilla and 1.867 mm in mandible.

Conclusions: the L-PRF membrane might be an effective adjunct to the dental extraction procedure for decreasing the predicted alveolar bone loss and improving the healing quality. The intraoral scanner showed being a possible valid tool in measuring alveolar bone loss after dental extraction.

EVALUATION OF THE HEALING PROCESSES IN POST-EXTRACTION SITES IN ONCOLOGICAL PATIENTS UNDERGOING LATERAL CERVICAL LYMPH NODE DISSECTION *VS* RADIOTHERAPY

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Aim: the aim of this study is to evaluate whether there are differences in the healing processes of hard and soft tissues in post-extraction site in irradiated patients compared to those who undergone lateral-cervical lymph node dissection.

Methods: the study was conducted on two classes of oncological patients (group A and group B) with head and neck carcinoma. The study population includes 10 patients requiring for 60 tooth extractions due to prosthetic rehabilitation and next healing of hard and soft tissues' monitoring. In every extraction, the procedure was carried out following standardized protocols, starting with a flapless approach to minimize trauma. The tooths were extracted ensuring that no buccolingual movements were made to avoid fracturing the cortical bone. After extraction, the socket was gently curetted and later, patients were provided with detailed instructions to promote healing. In the follow-up sessions they were monitored for healing progress at T0, T1 and T2 through clinical evaluation, checking the socket closure at T1, tissue soreness and socket closure at T2. The bone was monitored by radiographic imaging ratings in crown-apical and buccal-oral size.

Results: soft tissues healing was notably slower in Group A than group B with delayed socket closure and lasting inflammation. Instead, the hard ones, heal with the same bone reabsorbtion.

Conclusions: this preliminary study, which aims to include larger patient sample, can help scientific research by evaluating whether specific protocols can be developed for each group based on the results.

A COMPARATIVE EVALUATION OF AI-ENHANCED DENTAL SEGMENTATION SYSTEMS

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Aim: this study aims to assess the performance and accuracy of Artificial Intelligence (AI)-based tooth segmentation tools in Cone-Beam Computed Tomography (CBCT) images and define the boundaries of these approaches.

Methods: data were collected from the Department of Dentistry at the University of Messina, and twenty-one CBCT scans were analysed using two different AI-powered tooth segmentation programs: CoDiagnostiX and BlueSkyPlan. Before that, three independent clinicians classified third molar impaction on corresponding orthopantomographic (OPT) images using the Pell–Gregory and White classifications. Subsequently, each observer was asked to complete a questionnaire to evaluate the segmentation accuracy of both software programs.

Results: a total of 21 CBCT datasets satisfied the inclusion criteria, each containing at least one lower third molar. In approximately 75% of the cases, both the software achieved an accurate segmentation. More pronounced discrepancies surfaced in cases of incomplete root formation, imaging artefacts and morphological complexity.

Conclusions: the study demonstrates that AI-driven segmentation for third molars in CBCT is both feasible and clinically valuable, yet certain limitations persist. CoDiagnostiX exhibits a more sophisticated approach to voxel normalisation and nerve tracing, translating into superior performance in anatomically demanding cases. Conversely, BlueSkyPlan features a highly user-friendly interface and comparatively stable segmentation of standard morphologies, making it an excellent choice for routine applications.

EVALUATING AI-GENERATED INFORMED CONSENT DOCUMENTS IN ORAL SURGERY: A COMPARATIVE STUDY OF CHATGPT-4, BARD GEMINI ADVANCED, AND HUMAN-WRITTEN CONSENTS

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This study evaluates the quality and readability of informed consent documents generated by AI platforms ChatGPT-4 and Bard Gemini Advanced compared to those written by a first-year oral surgery resident for common oral surgery procedures. The evaluation, conducted by 18 experienced oral and maxillofacial surgeons, assessed consents for accuracy, completeness, readability, and overall quality. ChatGPT-4 consistently outperformed both Bard and human-written consents. ChatGPT-4 consents had a median accuracy score of 4 [IQR 4-4], compared to Bard's 3 [IQR 3–4] and human's 4 [IQR 3–4]. Completeness scores were higher for ChatGPT-4 (4 [IQR 4–5]) than Bard (3 [IQR 3–4]) and human (4 [IQR 3–4]). Readability

FROM PLANNING TO PLACEMENT: A FULL-DIGITAL WORKFLOW FOR DENTAL AUTOTRANSPLANTATION

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Aim: this study aims to evaluate accuracy of autotransplanted tooth placement using a full-digital surgical plan.
Methods: five patients with a Non-restorable Tooth (NRT) and a healthy, erupted third molar (DT) were enrolled. On 3DSlicer, the preoperative CBCT was oriented using the Frankfort and midsagittal planes, followed by segmentation of teeth and bone. Superimposition of DT on NRT was performed to create a colormap that highlighted non-matching areas. DT was virtually positioned in the receiving socket, achieving a pre-visualization of the pressure areas useful to design the surgical guides for bone preparation on RealGuide® software. DT prototype and surgical guides were 3D printed using compatible resin. The operative procedure included the following steps: 1) conservative NRT extraction, 2) guided surgery for preparing the receiving socket, 3) matching check with DT prototype, 4) minimally invasive DT extraction, 5) DT transplantation and orthodontic splint to adjacent teeth. One-year-follow-up CBCT was segmented to superimpose the planned and actual morphologies of the receiving socket and DT. Qualitative and quantitative analysis were conducted.
Results: at 1 year of follow-up, each DT was well-integrated, stable, and functionally adapted within the dental arch. No pathological mobility or probing depth were recorded. The colormap showed high precision of surgical positioning.
Conclusions: digital surgical planning enhances the efficiency of dental autotransplantation procedures by minimizing intraoperative complications with better outcomes, reducing the extra-alveolar time of DT.

COAGULATION DISORDERS AND ORAL SURGERY: DENTAL MANAGEMENT PROTOCOLS

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Aim: hemocoagulative diseases, the use of oral anticoagulant drugs (NAO and TAO) and antiplatelet agents can complicate the management of oral surgical interventions. This study was conducted to determine the management protocols of coagulopathic patients in the daily practice of oral surgery.
Methods: a retrospective study was performed on patients affected by coagulopathies who underwent oral surgery from January 2022 to December 2024 at the SOSD of surgical and special odontostomatology of the Azienda ospedaliera e universitaria delle Marche. All the interventions performed respected the Company Procedure for the Management of the Patient with Hemophilia, Hereditary Coagulation Defects and Hemorrhagic Emergencies established by Co.B.U.S.
Results: out of 2058 surgical interventions performed in Day Hospital, 468 coagulopathic patients were identified, of which 225 were undergoing antiplatelet therapy, 24 with platelet deficits, 118 undergoing therapy with the new oral anticoagulants, 85 undergoing anticoagulant therapy while 16 were thrombocytopenic. Major post-operative hemorrhagic events occurred in 6 patients. Minor hemorrhagic events occurred in 13 patients.
Conclusions: the management of patients for each type of coagulopathy is different and established on the basis of the operative protocol. The implementation of a protocol for the management of patients with coagulopathies in oral surgery guarantees safe and effective treatments, both during the operation and in the post-operative period.

20 YEARS' MANAGEMENT OF MRONJ IN CANCER AND OSTEOPOROTIC PATIENTS: A SINGLE REFERRAL ORAL SURGERY CENTER EXPERIENCE

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Aim: the aim of this study was to examine patient characteristics and clinical and surgical procedure variation at a single referral oral surgery center for MRONJ prevention and treatment in order to evaluate the trend in the clinical and surgical management of the disease in a 20-year timeframe.

Methods: a retrospective analysis of patients diagnosed with MRONJ and surgically treated at the Oral Surgery Unit of the Gaetano Martino University Hospital of Messina has been performed from January 2005 to January 2025.

The patients were divided into two categories: "cancer" which groups patients with bone metastases from solid tumors or multiple myeloma and "osteoporosis" which groups patients with osteoporosis. Patient characteristics such as age, sex, multymorbidities, polimedication, local risk factors and pre- and post- surgery pharmacological protocols were analyzed in addition to the adopted surgical technique.

Results: a total of 220 patients were included.

MRONJ patients appear to be the paradigm of the frail patient with complex cases providing a conceptual basis for moving away from a stage-disease approach toward a multidisciplinary integrative one. There has been a shift toward implemented medical procedures; MRONJ management is becoming more tailored to the patient which can lead to better clinical outcomes.

Conclusions: appropriate decision making in treating the more complex cases and operator surgical experience are key factors for a positive outcome due to technically demanding procedure to obtain stable primary wound closure.

WHAT ROLE OF THE ORAL SURGEON AS PART OF THE ORAL CANCER CARE TEAM?

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Aim: oral cancer is one of the most prevalent cancers worldwide, with tobacco use and alcohol consumption as the leading risk factors. Oral cancer management requires a team of specialists collaborating for comprehensive care. The aim of this study is to explore the role of the oral surgeon in the multidisciplinary oral cancer care team.

Methods: a review of existing literature, expert recommendations and our experience at the Dentistry Unit at the University Hospital of Messina was conducted to examine the strategies employed by oral surgeons to manage oral cancer patients.

The study also includes a review of current protocols and guidelines, highlighting the involvement of the oral surgeon in the different stages of care.

Results: the oral surgeon plays a pivotal role in the prevention of oral cancer through regular screenings, risk assessments and patient education by promoting lifestyle changes such as reducing tobacco and alcohol consumption. Furthermore, the oral surgeon provides pre- and post-treatment care, including monitoring for recurrence and addressing any complications. The oral surgeon contributes to prevent and manage dental issues such as caries, periodontal diseases, and osteoradionecrosis by overseeing oral health throughout the cancer treatment process.

Conclusions: the oral surgeon is an essential member of the multidisciplinary oral cancer care team. The role of oral surgeons is crucial to ensure comprehensive patient care and to create collaborative care models that can lead to more efficient treatment approaches and protocols.

THE ROLE OF REGULAR SCREENING IN MRONJ SEVERITY AND CLINICAL OUTCOMES: A RETROSPECTIVE STUDY ON 608 PATIENTS

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Aim: Medication-Related Osteonecrosis of the Jaw (MRONJ) is a severe complication of antiresorptive and antiangiogenic therapy. This study investigates differences in MRONJ severity and clinical outcomes among patients enrolled in a screening program for prevention, early diagnosis and management in comparison with patients not included in a screening protocol.

Methods: in 21 years (2004 to 2025) at the Odontostomatology Units of Parma we identified 608 MRONJ patients, classified using the SICMF-SIPMO staging system. Among them, 145 were undergoing a screening program according to the Diagnostic-Therapeutic Care Pathway (PDTA) of the Parma Medical Center.

Results: in both groups bisphosphonates were used more frequently than Non-Bisphosphonate. Screened patients were more frequently diagnosed at earlier stages (Stage 0: 7%), while only 1.3% of non-screened patients were diagnosed at this stage, with Stage 3 disease being more common in this group (19.6% *vs* 8.3%). In screened patients, 63.6% received surgical treatment and 36.4% conservative, compared to 55% and 45% in non-screened patients. Clinical improvement occurred more often in screened patients (93.3% *vs* 83.2%, p <0.05), as did complete healing (78.5% *vs* 68.6%, p <0.05).

Conclusions: regular screening is associated with earlier MRONJ diagnosis and improved clinical outcomes. These findings suggest that screening programs may facilitate timely intervention, leading to better prognosis and therapeutic success rates in MRONJ patients.

HEMORRHAGIC COMPLICATIONS IN THE ORAL CAVITY AS RISK INDICATORS FOR SYSTEMIC BLEEDING: A RETROSPECTIVE STUDY ON DOAC PATIENTS

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The introduction of NOACs has allowed overcoming several drawbacks typical of TAOs, as the need for continuous monitoring and various interactions with drugs and food. Despite their greater safety, the associated risk of bleeding is not zero. The objectives of this research were to investigate the association between systemic bleeding and oral cavity bleeding and the influence of certain patient characteristics and comorbidities on the bleeding risk.

In this retrospective observational study, an analysis was conducted on a sample of patients on NOAC therapy in Trieste (Italy) reporting oral bleeding during the period between August 2017 and June 2023.

Out of the 42 patients included in the study, 9 (21%) during anticoagulant treatment also developed an episode of systemic bleeding, mainly at the naso-sinus and gastrointestinal levels. No bleeding was classified as major life-threatening hemorrhage. Despite thorough research, the collected data did not show any statistically significant correlation (p-value >0.05) between oral cavity bleeding and bleeding in other anatomical districts and it was not possible to calculate the strength of association with certain patient characteristics and comorbidities.

This study did not yield statistically significant data supporting the hypothesis of oral cavity bleeding as an indicator of risk for systemic bleeding episodes. It is important to note, however, that this research included a limited number of patients; further investigations with larger samples may be essential to confirm or refute the association between the two factors.

MONITORING FACIAL SWELLING AFTER WISDOM TOOTH SURGERY: 2D VS 3D ASSESSMENT

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Aim: the aim of this study was to compare manual (2D) and digital (3D) facial edema in patients undergoing mandibular third molar (M3M) surgery.

Methods: edema assessment using iPhone app (EM3D), FaceScan Marathon MT-4000, and manual measurements (labial commissure - lower lobe; labial commissure - upper lobe; lateral canthus - gonion; nose wing -gonion) with a soft tape were evaluated. Correlations between these methods and Posse Scale were analysed. For 3D methods, digital analysis was performed to calculate differential linear surface and volume changes within the edema Region Of Interest (ROI) using a standardized workflow on 3D Slicer. Statistical analysis included descriptive statistics and a linear regression model.

Results: fifty M3M were extracted (29 left, 21 right) from 17 males and 33 females (mean age 28.21±10.03). Based on Pell and Gregory classification, 14 M3M were defined as 2A, 16 as 1B, 3 as 1C, 6 as 2A, 8 as 2B, and 3 as 3C. Linear regression analysis showed a positive correlation between 3D facial edema, and both eating discomfort and altered postoperative sensitivity. Among 2D measurements, the nose wing–gonion distance was positively associated with surgical time and pain, and negatively with mouth opening. The external canthus–gonion line correlated with increased eating difficulty.

Conclusions: facial scanning *demonstrated* stronger correlations with clinical outcomes than 2D measurements. Their use allows a more accurate assessment of post-surgical edema, resulting in better post-operative monitoring of the patient after M3M surgery.

PERI-IMPLANT METASTASES: A FIRST SIGN OF PRIMARY UNKNOWN CANCER

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Aim: metastatic peri-implant involvement is exceedingly uncommon. While such lesions typically reflect secondary dissemination from a systemic malignancy, they may constitute the first clinical presentation of an occult primary neoplasm. Clinically, they often present as rapidly expanding masses involving both hard and soft oral tissues, posing substantial diagnostic and therapeutic challenges, requiring careful interdisciplinary management.

Methods: all patients presenting with peri-implant lesions were retrospectively reviewed, and only histopathologically confirmed malignant cases were included. All subjects underwent panoramic radiograph and either Cone Beam Computed Tomography (CBCT) or Magnetic Resonance Imaging (MRI) to assess the extent and nature of the lesions. Surgical excision was performed with wide margins, including the removal of adjacent peri-implant tissues and associated dental implants. After confirmation of metastatic involvement secondary to a primary malignancy, the patient was referred for comprehensive oncologic evaluation and remained under ongoing clinical and radiographic follow-ups.

Results: 3 patients were enrolled (2 male, 1 female). All cases showed peri-implant masses characterized by pain, spontaneous bleeding, and increased periodontal values. Histopathological analysis confirmed metastatic lesions originating from primary lung carcinoma in all patients. One patient succumbed to the disease, while the remaining two are currently under follow-up.

Conclusions: suggestive of malignancy peri-implant lesions should raise a diagnostic suspicion and prompt clinicians to initiate a thorough systemic investigation for potential occult primary neoplasms. Early recognition is essential to avoid diagnostic delays and ensure appropriate multidisciplinary management.

GIANT CELLS GRANULOMA: SITE-DEPENDENT SURGICAL MANAGEMENT

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Aim: Giant Cell Granuloma (GCG) is a benign, osteolytic lesion that arises within the jawbone or adjacent soft tissues. Based on anatomical localization, GCGs are classified as either Peripheral (PGCG), confined to soft tissues, or Central (CGCG), involving intraosseous structures. A distinct entity - GCG associated with hyperparathyroidism - also exists and warrants separate consideration. We aimed to compare surgical strategies for PGCG and CGCG, with emphasis on how lesion localization influences the choice of surgical approach.

Methods: 5 patients complained about a painless swelling of the gingiva. All underwent panoramic radiograph and TC Cone Beam to evaluate osseous involvement and extent. CGCG surgical approach included resection of the lesion with wide osseous margins, osteoplasty of the bony borders, cavitary revision, and wound closure using silk sutures. For PGCG, a minimally invasive surgery was employed, consisting in wide-margin excision with a Diode Laser (Lasonotronix, Poland) set at 4W in Continuous Wave mode. Clinical follow-ups were performed for both PGCG and CGCG. The latter were also closely monitored with panoramic radiograph at 3, 6, 9 and 12 months.

Results: a total of 9 patients were included in the study (5 males and 4 females). Histopathological examination confirmed 6 CGCGs and 3 PGCGs. All lesions healed without recurrence or complications.

Conclusions: management of CGCs should be customized according to lesion's extent, anatomical location, and histopathological features. A site-dependent surgical approach, assessed by a radiographic evaluation, is essential for optimizing outcomes and minimizing risk of recurrence. This strategy ensures that both peripheral and central lesions are addressed with appropriate precision, considering their unique clinical and radiographic presentations.

CEPHALOMETRIC ANALYSIS AS A TOOL TO PREDICT THIRD MOLAR IMPACTION PROBABILITY

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Aim: the retrospective study aimed to investigate a potential correlation between mandibular ramus morphology and lower third molar impaction by comparing subjects with impacted third molars to those with normal eruption patterns, to support early prediction of impaction. The comparison was based on linear and angular measurements obtained from digital panoramic radiographs.

Methods: a total of 726 orthopantomographs were evaluated, and 81 met the inclusion criteria. Subjects were divided into two groups: the control group (38 cases) included individuals with at least one erupted lower third molar, while the experimental group (43 cases) included individuals with at least one impacted or partially impacted lower third molar. Sixteen variables were analyzed (11 linear, 4 angular, and 1 ratio) and all measurements were taken by a trained observer.

Results: the control group showed a wider retromolar space, a greater impaction angle, and a higher retromolar area to the third molar compared to the second group. The experimental group showed a more pronounced sigmoid notch depth. In the control group, moderate positive correlations were observed between retromolar space and both coronoid process length and third molar width. In the experimental group, moderate positive correlations were found between retromolar space and both the condyle-coronoid angle and the inclination of lower posterior teeth.

Conclusions: this study demonstrated that the angular position of the lower third molar, relative to mandibular pain, may serve as a predictive marker for tooth impaction.

PRECLINICAL STUDY MODELS IN REGENERATIVE MEDICINE AND IMPLANTOLOGY: AN OVERVIEW OF IMPLANT RESEARCH OVER THE LAST THREE DECADES

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Aim: this review explored the role of systemic diseases in dental implant osseointegration and examined how animal models have contributed to understanding these interactions. The goal was to highlight how systemic conditions influence peri-implant bone healing and implant success.
Methods: a narrative literature review was conducted on studies from 1990 to 2023 using PubMed and Scopus. The selected articles investigated implant osseointegration in animal models affected by systemic conditions such as diabetes, osteoporosis, and metabolic disorders. Models were evaluated based on their biological similarity to humans, practical use, and ability to replicate systemic pathology.
Results: systemic diseases significantly alter the biological response to implants, impairing bone healing, remodeling, and implant stability. Rabbit and rodent models of diabetes and osteoporosis were commonly used to study delayed osseointegration and impaired bone quality. Larger animals, such as pigs and dogs, offered insights into how systemic therapies (e.g., bisphosphonates or corticosteroids) impact bone metabolism and surgical outcomes.
Conclusions: systemic health plays a key role in determining implant success. Animal models remain essential for studying the complex interactions between systemic pathology and local bone regeneration. Better understanding these dynamics may improve patient-specific protocols and personalized implant therapies.

MANUAL, SEMI-AUTOMATIC AND AUTOMATIC METHODS FOR NEW-BONE VOLUME EVALUATION ON CBCT: AN *EX VIVO* STUDY

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Aim: to compare three CBCT methods for assessing new bone volume after a sinus lift.
Methods: a dry skull was used as model and sinus membrane was simulated by a hydrogel validated by Singhrao et al., 2020. Three grafts were reproduced using bovine xenograft (BioOss S, Geistlich, Switzerland), packed on the sinus floor with resin (Biomedical White, Formlabs). CBCTs of the model were acquired both with and without graft simulations. Manual Method (MM) required manual identification of graft boundaries. Automatic Method (AM) included automatic segmentation of preoperative and postoperative bone tissues, automatic STL superimposition, subtractive Boolean, and isolated components removal (RealGuide, 3Diemme, Italy). Semi-Automatic Method (SAM) added manual correction of graft contour to above reported AM. Each method was applied five times on each phantom and reference volumes were determined by threshold segmentation on CBCT scans of isolated grafts. Relative Mean Errors (RME) and Standard Deviation (SD) were calculated.
Results: MM was the most accurate method but also the least precise (RME = 0,0%; SD: 3,9). AM showed highest inaccuracy, but also highest precision (RME = 11,7%; SD = 1,7). SAM was slightly less accurate than MM and slightly more precise (RME = 3,0%; SD = 2,9).
Conclusions: although a wider study would be required, accuracy of automatic bone segmentation appears still suboptimal. Advanced automated algorithms can effectively assist human work, as demonstrated by quite low RME of SAM method, but its output should be carefully reviewed.

EXTRACTION OF IMPACTED LOWER THIRD MOLARS: HISTOMORPHOLOGICAL DIFFERENCES BETWEEN OSTEOTOMY PERFORMED WITH A SURGICAL BUR AND ER:YAG LASER

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Aim: compare the histomorphological characteristics of osteotomy performed using a surgical bur and Er:YAG laser in QSP mode in an animal model (*ex vivo*).

Methods: six bone tissue samples (2 x 2 mm) were analyzed using 3D microscopy, a profilometer, and conventional histology. The samples were taken from the posterior vestibular side of a pig mandible. Three were obtained using a Lindemann surgical bur at 40,000 rpm and three with an Er:YAG laser in QSP mode (energy: 330 mJ, frequency: 15 Hz, power: 4.95 W).

Results: the 3D microscopy image of the cut surface revealed that the profile peaks on the bone surface cut with the surgical bur were higher than those cut with the Er:YAG laser (respectively 49.76 µm versus 33,03 µm). The profilometer analysis showed that the differences (Δ) between the maximum and minimum peaks on the X-axis and Y-axis of the bone surface were greater for the surgical bur (ΔZx bur = -660 µm, ΔZy bur = -290 µm) than for the Er:YAG laser (ΔZx laser Er:YAG = -92 µm, ΔZy laser Er:YAG = -49 µm).

At the histological level, the Er:YAG laser cut showed less necrotic tissue and fewer apoptotic cells compared to the surgical bur.

Conclusions: the results suggest that the osteotomy performed with the Er:YAG laser will have a better post-operative course as the absence of debris on the bone surface results in increased inflammatory cells, revascularization, and proliferation of fibroblasts and osteoblasts during the healing phase.

ABSORBABLE BIOPOLYMERS IN REGENERATIVE DENTAL SURGERY: A COMPREHENSIVE REVIEW

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Aim: the use of resorbable biopolymers represents a significant advancement in Guided Bone Regeneration (GBR) and Guided Tissue Repair (GTR). This review evaluates their therapeutic potential compared to conventional materials, focusing on bone preservation, soft tissue healing, and complication rates.

Methods: a systematic review was conducted following PRISMA guidelines across PubMed, Scopus, and Cochrane databases. Randomized Controlled Trials (RCTs) on resorbable biopolymers in bone regeneration were selected. Six studies were analyzed, comparing synthetic (e.g., PolyEthylene Glycol, PEG) and natural (e.g., collagen) membranes. Bias risk assessment was performed to ensure study reliability.

Results: PEG-based membranes demonstrated superior early-stage bone retention compared to collagen, though both supported implant success. 3D-printed biopolymers showed advantages in sealing extraction sockets and promoting bone regrowth, particularly in posterior regions. Complications were minimal, mainly delayed soft tissue healing and minor dehiscences.

Conclusions: resorbable membranes provide a reliable alternative to traditional materials. Synthetic membranes enhance bone preservation but may delay soft tissue healing. The promising role of 3D-printed biopolymers warrants further research to confirm long-term efficacy. Material selection should consider defect characteristics and patient-specific needs.

ANTIBIOTIC USE FOR PREVENTING POST-SURGICAL ISSUES AFTER THIRD MOLAR EXTRACTIONS: A COMPREHENSIVE REVIEW ON EFFICACY, RISKS, AND BEST PRACTICES IN CLINICAL DECISION-MAKING FOR IMPROVED PATIENT OUTCOME

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Aim: the extraction of third molars is among the most frequent oral surgical procedures. Despite being routine, it can lead to complications such as infections and alveolitis, causing pain, delayed healing, and additional medical interventions. The use of antibiotics to prevent these complications remains debated due to concerns about side effects, antibiotic resistance, and unnecessary prescriptions. This review examines their effectiveness in reducing post-extraction issues and their appropriate use in oral surgery.

Methods: a systematic literature review was conducted using MEDLINE/PubMed, Cochrane, and SCOPUS databases up to June 2024. The research question was: *Do antibiotics significantly reduce post-surgical complications in healthy individuals?* Studies analyzing infections, alveolitis, and other adverse effects were included.

Results: sixteen systematic reviews were analyzed. The data suggests that antibiotics significantly lower the risk of post-extraction infections and dry socket. Amoxicillin-clavulanic acid was the most effective in preventing bacterial complications, reducing the incidence of infections compared to non-use.

Conclusions: the evidence supports the use of antibiotics, particularly amoxicillin-clavulanic acid, in reducing post-surgical infections and alveolitis. However, prescription must be carefully evaluated, balancing benefits with risks such as adverse reactions and antimicrobial resistance. A judicious approach ensures patient safety while minimizing unnecessary antibiotic exposure.

DENTIST'S APPROACH TO THE ANTIPLATELET PATIENT IN ORAL SURGERY

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Aim: this study aimed to offer clinicians guidance on managing patients undergoing oral surgery while receiving antiplatelet therapy. A comprehensive analysis was conducted on the increasing prevalence of cardiovascular disease across both developed and developing nations. Additionally, the pharmacological mechanisms of major antiplatelet drugs were examined, followed by an assessment of which dental surgical procedures are more likely to trigger significant bleeding.

Methods: a literature review was conducted using the keywords "antiplatelet therapy," "dental surgery," "oral surgery," and "dental extractions." Only articles published in English within the past ten years were included in the analysis.

Results: the findings indicate that discontinuing antiplatelet therapy before oral surgery is generally unnecessary. The interruption of such treatment could increase the risk of thromboembolic events, while proper hemostatic measures following surgery can effectively minimize postoperative bleeding.

Conclusions: halting antiplatelet therapy prior to oral surgery does not provide significant benefits to either clinicians or patients. Maintaining treatment while employing appropriate hemostatic strategies ensures both patient safety and procedural success.

THE EFFECT OF CONSERVATIVE *VS* RADICAL TREATMENT OF AMELOBLASTOMA ON RECURRENCE RATE AND QUALITY OF LIFE: AN UMBRELLA REVIEW

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Aim: the aim of this study is to summarize the findings of Systematic Reviews (SRs) and meta-analysis on the effects of radical and conservative approach on the recurrence rate and post-operative quality of life, to assess the quality of included studies and to discuss clinical implications to provide a comprehensive guide to clinical management.

Methods: PubMed, Scopus and The Cochrane Library were checked. The primary outcome was the recurrence rate after surgical treatment, while the secondary outcomes were the post-operative complications, quality of life, aesthetic and functional impairment. The methodological quality of the included SRs was assessed using the updated version of "A Measurement Tool to Assess Systematic Review" (AMSTAR-2).

Results: the search resulted in eighteen SRs. 4 studies were included in meta-analysis and revealed that the recurrence rate is about three-times more likely in the conservative treatment group compared to the radical treatment group and this result is statistically significant. The latter was more appropriate in the case of smaller lesions and younger patients, due to better post-operative quality of life and reduced functional and aesthetic impairments.

Conclusions: conservative surgery is the first-line therapeutic choice for intra-osseous ameloblastoma. This approach allows for the maintenance of a high quality of life while also enabling early detection of recurrences, provided that the time interval between follow-up visits is reduced. Further prospective studies are needed to establish the best treatment choice and follow-up period.

PERI-IMPLANT LESIONS POTENTIALLY ASSOCIATED WITH TITANIUM AND OTHER METAL NANOPARTICLES FROM SUPPORTED-RESTORATIONS AND DENTAL IMPLANTS: AN UMBRELLA REVIEW

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Aim: the present umbrella review primarily investigated the prevalence of cases with inflammatory (peri-implantitis-like), hypersensitivity, and reactive oral lesions potentially associated with the released Titanium (alloy) and other metal nanoparticles from implant-supported restorations and dental implants. Secondarily, those lesions were classified as peri-implant mucositis/peri-implantitis, reactive lesions, or hypersensitivity reactions, alongside assessing their correlation with patients', implant-supported restorations', and implants' characteristics, as well as the Titanium allergy evidence.

Methods: the study protocol was in accordance with the PRISMA statement and registered on PROSPERO (CRD42022354676) prior to the start of the literature search, which was conducted across PubMed/MEDLINE, Scopus, Cochrane Library, Web of Science databases, and the PROSPERO register till August 19, 2022. Studies were qualitatively synthesized, and the related quality was assessed using the AMSTAR-2 tool.

Results: four systematic reviews were included. The overall prevalence of cases was estimated at 16.9%. Reported lesions resembled peri-implant mucositis/peri-implantitis (55.17%), reactive oral lesions (17.22%), and hypersensitivity reactions (24.12%); no oral contact lichenoid lesions were reported. Titanium allergy was rarely and variously investigated.

Conclusions: the lack of data impaired the establishment of conclusive evidence regarding the role of patient and implant characteristics, as well as Titanium allergy, on lesions' onset, progression, and treatment response.

RE-INTERVENTION RATE AND INDICATIONS FOLLOWING CORONECTOMY OF THE THIRD MANDIBULAR MOLAR: A SYSTEMATIC REVIEW OF SYSTEMATIC REVIEWS

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Aim: coronectomy has been proposed as an alternative to complete third molar extraction to minimize inferior alveolar nerve injury risk. This systematic review of systematic reviews aimed to assess the re-intervention rate, timing, and indications following coronectomy of the mandibular third molar.

Methods: the study followed PRISMA guidelines and was registered on PROSPERO (nr. CRD42024556888). The search conducted through databases (Scopus, MEDLINE/PubMed, BioMed Central, PROSPERO) to identify systematic reviews with or without meta-analyses. Inclusion criteria comprised studies reporting re-intervention rates after at least 6 months from coronectomy. Data extraction focused on re-intervention timing, indications and related complications.

Results: six systematic reviews were included, encompassing 5896 subjects who underwent a total of 8198 coronectomies. The overall re-intervention rate was 4.29%, with timing ranging from 6 months to 10 years (mean 10.4 months). Root exposure (16.76%) was the primary reason of re-intervention, followed by infection (4.55%), pain (2.84%), and other factors as periodontal disease or orthodontic needs. The complication rate after coronectomy was 26.37%, with root migration (12.20%) being the most frequent issue, while inferior alveolar nerve injury was rare (0.76%).

Conclusions: coronectomy showed a relatively low re-intervention rate. However, root migration and exposure are primary concerns requiring long-term follow-up. Further studies should standardize imaging protocols, assess long-term outcomes, and refine re-intervention criteria.

ACCURACY AND PATIENT/CLINICIAN-REPORTED USABILITY AND SATISFACTION OF DYNAMIC COMPUTER-ASSISTED NAVIGATION SYSTEMS IN DENTAL ALVEOLAR SURGERY AND BONE AUGMENTATION: A SYSTEMATIC REVIEW

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Aim: Dynamic Computer-Assisted Navigation Systems (DCANSs) enhance precision and reduce complications, although their accuracy, reliability and usability remain underexplored in some oral surgical procedures. Therefore, this systematic review evaluated reliability, accuracy, surgical duration, postoperative course and patient- and clinician-reported usability, acceptance, and satisfaction in DCANSs bone augmentation and dentoalveolar surgery.

Methods: the study protocol (PROSPERO nr.: CRD42024610153) adhered to the PRISMA statement. Studies were descriptively synthesized and judged with JBI, ROBINS-I and II.

Results: a total of 29 studies and 214 patients were included. DCANSs dentoalveolar surgeries involved 131 patients (69.62%) for third molar (44.86%), supernumerary (9.81%) and tooth (0.93%) extractions, and coronectomies (5.61%), beyond foreign body/implant/cyst/screw removal, sequestrectomy and osteoplasty (8.41%). DCANSs bone augmentation surgeries involved 65 patients (30.38%) for sinus lift (29.91%) and “Sandwich” surgery (0.47%). DCANSs improved surgical accuracy, particularly in sinus lift. Even if poorly investigated, DCANSs enhanced surgical accuracy and safety; surgery duration was almost comparable in DCANSs and non-DCANSs. Patient-reported postoperative pain was generally mild and resolved in 1-2 weeks; positive feedback was recorded.

Conclusions: DCANSs showed higher safety and accuracy compared to non-DCANSs surgeries, besides the extended preoperative duration and learning curve. Further studies should standardize protocols and evaluate long-term outcomes.

THE ROLE OF AUTOLOGOUS PLATELET CONCENTRATES AS A LOCAL ANTIBIOTIC DELIVERY SYSTEM: A SYSTEMATIC SCOPING REVIEW

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Aim: researchers are exploring new ways to combat bacterial infections while reducing side effects, resistance, and poor tissue penetration. Autologous Platelet Concentrates (APCs) show potential for delivering antibiotics directly to infection sites, but their effectiveness is unclear. This systematic scoping review aims to fill this gap to provide a global understanding of the efficacy of APCs in delivering antibiotic therapy.
Methods: the study followed Joanna Briggs Institute guidelines. Three databases (PubMed, Scopus, Web of Science) were searched, with two authors independently conducting the search and data extraction. Studies on APCs as local antibiotic delivery systems were included, and findings were categorized into antibiotic loading capacity, release kinetics, and antibacterial effects.
Results: 14 articles were selected, including 10 *in vitro*, 1 *in vitro* and clinical, 1 *in vitro* and animal, 1 *ex vivo*, and 1 clinical study. All studies confirmed the antibiotic loading and release of doxycycline, gentamicin, linezolid, vancomycin, metronidazole, and penicillin. APCs also demonstrated antibacterial effects against *E. coli*, *P. aeruginosa*, *S. mitis*, *H. influenzae*, *S. pneumoniae*, and *S. aureus*.
Conclusions: incorporating antibiotics into APCs enables the controlled release of antimicrobial agents, potentially reducing post-operative infections and supplementing or replacing systemic antibiotics while preserving APCs' healing properties. Further studies are needed to confirm their effectiveness as a topical antibiotic delivery method in dentistry.

IS ANTIBIOTIC PROPHYLAXIS NECESSARY TO PREVENT PROSTHETIC JOINT INFECTIONS IN PATIENTS UNDERGOING INVASIVE DENTAL PROCEDURES?

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Aim: the need of Antibiotic Prophylaxis (AP) in patients with prosthetic joints undergoing Invasive Dental Procedures (IDPs) is debated.
Periprosthetic Joint Infection (PJI) is one of the leading causes of prosthetic joint failure, and it is primarily attributed to bacteremia. It is essential for clinicians to know if the AP is really effective in preventing PJIs potentially caused by bacteremia originated from IDPs. Clarity is needed since the replacement of deteriorated joints with artificial ones is a procedure that is destined to be performed more and more, and thus, the number of patients with prosthetic joints is going to rise consequently.
The aim of this study is to perform a narrative literature review about the association between IDPs and PJIs and about the efficacy of AP in preventing PJIs.
Methods: the articles consulted were sourced from PubMed, the American Dental Association, and the ISS websites. To find said articles, various combinations of the words "antibiotic prophylaxis", "dental procedures", "periprosthetic joint infection" were used.
Results: literature review includes more than 20 articles published between 2009 and 2024. Every article found neither a clear association between IDPs and PJIs, nor scientific evidence on the effectiveness of the AP in preventing PJIs.
Conclusions: antibiotic prophylaxis in patients with prosthetic joints undergoing invasive dental procedures is not recommended. However, attention to potential odontogenic infectious foci should be kept high, in relation to periprosthetic joint infections in high-risk patients.

CANNABINOIDS, THERAPEUTIC PERSPECTIVES FOR MANAGEMENT OF OROFACIAL PAIN, ORAL INFLAMMATION AND BONE HEALING: A SYSTEMATIC REVIEW

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Aim: cannabinoids, particularly cannabidiol (CBD) and tetrahydrocannabinol (THC), have been increasingly studied for their therapeutic applications in various medical fields. This systematic review aims to explore their role in oral surgery, focusing on pain management, inflammation control, and bone regeneration.

Methods: PubMed, Scopus, and Web of Science databases were checked. The review included clinical and preclinical studies investigating the effects of cannabinoids on orofacial pain, oral inflammation and bone healing up to November 2024. Orofacial pain, oral lesions and bone healing outcomes were evaluated. The risk of bias was made by Joanna Briggs tool for randomized-controlled trials, SYRCLE'S risk of bias for animal studies and QUIN for *in vitro* studies in dentistry.

Results: CBD was the most studied compound. Some studies demonstrated its analgesic and anti-inflammatory effects in patients undergone lower third molar extractions or suffered from recurrent aphthous or myofascial pain, while others found limited or non-superior outcomes compared to standard treatments (e.g., NSAIDs, corticosteroids). Moreover, CBD showed potential in enhancing bone regeneration by activating CB2 receptors, promoting osteoblast activity, and improving collagen stabilization. Three RCTs and the only one *in vitro* study were recognized as low risk of bias, while all animal studies were high risk of bias.

Conclusions: preclinical and clinical studies suggest that cannabinoids represent a promising non-opioid alternative for pain management and for oral inflammation. Despite the potential benefits of CBDs in oral health contexts, findings derived from heterogeneous studies, many with high risk of bias. More high-quality, standardized clinical trials are necessary before recommending cannabinoids for routine dental practice.

CLINICAL OUTCOMES OF THE MAGNETIC MALLET IN ORAL AND IMPLANT SURGERY: A SYSTEMATIC REVIEW OF COMPARATIVE STUDIES

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Aim: the Magnetic Mallet (MM), a magnetodynamic device, provides a controlled application of force using electromagnetism and is used in bone surgery. The aim of the present systematic review was to evaluate the effectiveness of the MM compared to conventional surgical techniques in oral and implant surgery.

Methods: the focused question was: "Does the magnetic mallet improve clinical outcomes in oral and implant surgery compared to traditional instruments?". The following databases were searched up to July 22nd, 2024: PubMed, Scopus, Web of Science. Clinical and animal studies were included comparing MM with traditional techniques.

Results: 187 studies were initially found and 7 matched the inclusion criteria and were included in the review. Two studies focused on sinus lift, 2 on implant site preparation, 2 regarded dental extraction, and one focused on split-crest procedures. Three studies were randomized clinical trials, 2 were prospective studies, one was a retrospective study, and one was an animal study.

The results indicate that the MM reduces trauma to surrounding tissues, minimizes heat generation, and improves implant stability through osteocondensation. Furthermore, MM may help reduce complications such as Benign Paroxysmal Positional Vertigo (BPPV) in sinus lift surgeries and alveolar ridge resorption after extractions.

Conclusions: the MM showed several clinical benefits compared to traditional techniques, including increased patient comfort. However, further research is needed to confirm its promising outcomes and to optimize clinical protocols for its application, especially regarding its possible role in the management of critical bone conditions and complex surgery.

IS ROOT CANAL TREATMENT OF VITAL TEETH NECESSARY BEFORE SURGICAL EXCISION OF PERIRADICULAR NON-INFLAMMATORY ODONTOGENIC LESIONS? A CRITICAL LITERATURE REVIEW

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Aim: the management of vital teeth in conjunction with Non-iInflammatory (NI) odontogenic lesions of the jawbones is controversial, especially regarding the necessity of performing pre-surgical Root Canal Treatments (RCTs). The aim of the present literature review is to assess whether pre-surgical RCT of vital teeth in conjunction with NI osteolytic lesions is advisable.

Methods: a multiple database research (Medline, Web of Science, Scopus) was set, using twenty keyword pairs as entry terms (e.g.: "root canal therapy" AND "surgical excision"). Only English literature, public shed from 2000 and focusing on humans was considered. The search identified a total of 1166 papers and, after a selection process, 15 articles were regarded eligible for analysis.

Results: teeth in conjunction with NI osteolytic lesions underwent pre-surgical RCTs in only 3 out of 15 papers. In most studies, despite differences in surgical procedures, the vitality of the assessed teeth was preserved, without performing pre-surgical RCTs. Only one study reported a high necrosis rate in teeth adjacent to NI osteolytic lesions, suggesting they may benefit from pre-surgical RCT.

Conclusions: the management of vital teeth adjacent to NI odontogenic lesions is contentious, with limited literature available. The necessity of RCT is debated and there is still no consensus as to whether it should be performed before surgery. The combination of marsupialization and secondary enucleation represents a conservative surgical approach that seems to ensure the long-term preservation of the vitality of the affected teeth.

ANTIBIOTIC THERAPY IN THIRD MOLAR EXTRACTION: AN UMBRELLA REVIEW

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Aim: to evaluate the antibiotic in third molar extraction.

Methods: an umbrella review was reported according PRISMA statement. Only SR of RCTs' with meta-analyses were included. Two independent reviewers conducted a literature search (PubMed, Cochrane Library, Scopus, and Embase), data extraction and risk of bias assessment using the ROBIS tool.

Results: thirteen SRs' were enclosed. Nine SRs' support the use of antibiotic therapy in preventing post-operative complications, with Odds Ratios (OR) ranging from 0.30 (P <0.00001, 95% CI from 0.19 to 0.47) to 1.794 (95% CI from 1.199 to 2.684) and Risk Ratios (RR) ranging from 0.25 (95% CI, from 0.15 to 0.42, P <0.0001) to 0.43 (95% CI from 0.33 to 0.56, P <0.0001). Clinical significance analysis was conducted in nine reviews using the Number Needed to Treat (NNT), with NNT values for infection at the site ranging from 14 (95% CI from 11 to 19) to 25 (95% CI from 15 to 73), for alveolar osteitis from 13 (95% CI from 9 to 26) to 29 (95% CI from 12 to -57), and for dry socket from 25 to 97. Amoxicilline, Amoxicilline + clavulanic acid and metronidazole were the most investigated drugs.
In seven reviews, no significant difference was found between the treated group and the placebo/no treatment group for adverse reactions. Clinical significance was calculated in three reviews using the Number Needed to Harm (NNH), with values of 26, 16.2, and 25.0 for the treated group.

Conclusions: available evidence (NnT, the low prevalence of complications, antibiotic resistance) may not suggest routine prescription of antibiotics.

EFFECTIVNESS OF CROSS-LINKED HYALURONIC ACID IN ORAL SOFT TISSUE REGENERATION: A CASE REPORT AND REVIEW OF LITERATURE

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Aim: Hyaluronic Acid (HA) is an endogenous glycosaminoglycan that has important structural functions as well as a significant role in regenerative processes such as wound healing and embryogenesis. Due to its function in rapid tissue turnover and repair processes and modulation of the inflammatory response, its positive effect on hard and soft tissue regeneration is well described in literature. Cross-linked hyaluronic acid (xHyA) is a synthetic form of native HA, which has better mechanical stress resistance properties and slower biodegradation. A review of literature on the use of xHyA in oral soft tissue regeneration is proposed. A clinical case of carcinoma in situ of the tongue margin surgically managed with an innovative technique combining the use of Neodimium laser, xHyA gel, and resorbable porcine pericardium membrane is also reported.

Methods: the available literature was searched in the MEDLINE database and the search was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) criteria.

Results: there are currently no clinical studies evaluating the use of xHyA in oral soft tissue regeneration. Clinical case follow-up showed rapid and optimal healing of the surgical site.

Conclusions: despite the lack of literature, the anti-inflammatory and proliferative effects on cells reported in *in vitro* studies suggest the possibility of employing xHyA in soft tissue procedures. Furthermore, the results found from the application of this innovative surgical combined technique are extremely promising in the field of regenerative surgery.

IMPROVING CONE BEAM CT IMAGE QUALITY USING AI: A SYSTEMATIC REVIEW

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Aim: this systematic review investigates Artificial Intelligence (AI)-based methods for artifact reduction in Cone Beam Computed Tomography (CBCT), which offers fast 3D imaging with lower radiation than conventional CT but suffers from image-degrading artifacts.

Methods: following the PIRD framework (Population: CBCT images; Intervention: AI-based artifact reduction; Domain: image quality), a systematic search was conducted in June 2023. Study quality was assessed using the QUADAS-II tool. Extracted data included study aims, imaging modalities, anatomical focus, AI methods, datasets, performance metrics, and outcomes. Comparative analyses were performed using statistical and visual tools.

Results: of 719 records, 39 studies met inclusion criteria. Most aimed to enhance image quality and reduce artifacts using generative or predictive AI models. The thoracic region was most frequently addressed. Many studies used simulated or augmented datasets, while publicly available data and models were limited. Common evaluation metrics included SSIM, PSNR, and MAE.

Conclusions: AI-based approaches show promise in improving CBCT image quality, though significant variability in methods and metrics highlights the need for standardization and increased transparency.

THE EFFECTIVENESS OF TITANIUM MESH AS BONE REGENERATION TECHNIQUE: A META-ANALYSIS OF EXPOSURE RATE AND VERTICAL BONE GAIN

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Aim: the study aims to evaluate the effectiveness of titanium mesh in maxillary bone regeneration, focusing on its early exposure rate and Vertical Bone Gain (VBG). The objective is to compare the outcomes of titanium mesh techniques with other Guided Bone Regeneration (GBR) methods and assess strategies to minimize exposure rates.

Methods: a systematic review and meta-analysis were conducted following PRISMA guidelines. Databases including PubMed/MEDLINE, EMBASE, and Google Scholar were searched for relevant studies. Inclusion criteria required clinical studies reporting VBG and titanium mesh exposure rates. Statistical analyses were performed to compare VBG and exposure rates among different techniques.

Results: the findings indicate that titanium mesh achieves high VBG values post-healing. While no significant differences were observed between titanium mesh and other GBR techniques in terms of VBG, the use of coronally advanced lingual flaps significantly reduced exposure rates compared to control groups. The results support titanium mesh as a reliable approach for vertical bone regeneration when surgical flap management is optimized.

Conclusions: titanium mesh is an effective method for maxillary bone regeneration, achieving substantial VBG. However, its early exposure rate can be minimized through passive flap management techniques. Further clinical studies are recommended to refine surgical protocols and enhance long-term success.

INTRAOSSEOUS MIGRATION AND TRANSMIGRATION OF THE CANINE: NEW PERSPECTIVES ON ETIOPATHOGENESIS AND THERAPY

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Aim: the purpose of the study is to analyze the scientific evidence regarding intraosseous migration and transmigration of teeth, with a special focus on the mandibular canine. The aim is to explore possible etiopathogenic causes and update treatment strategies, highlighting the importance of early diagnosis for optimal clinical management.

Methods: a literature review was conducted through the PUBMED and EMBASE databases, covering the period 1970-2025. Search terms included "intraosseous migration," "transmigration," "canine," and "ectopic eruption."
The selection of studies favored articles published in high-impact journals (Q1-Q2) and was supplemented with a hand search to include papers of particular relevance and depth.

Results: from the approximately 150 articles reviewed, transmigration of the mandibular canine emerges as the most documented phenomenon, with an estimated prevalence between 0.33% and 0.66%. The enzymatic factors of the dental follicle, combined with genetic and exogenous predispositions, are determinants in the rotation and deviation of the tooth germ from the physiological route of eruption.

Conclusions: early diagnosis, supported by panoramic radiographs and 3D tomography, is crucial to decide on the most appropriate treatment approach, which may range from a surgical-orthodontic procedure to extraction. The proposed model, based on changes in dental follicle enzyme activity, offers a plausible explanation for tooth migration, emphasizing the importance of early intervention to preserve function and aesthetics.

COMPARATIVE MORBIDITY OF INTRAORAL DONOR SITES FOR AUTOLOGOUS BONE GRAFTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Aim: implant placement often requires bone augmentation due to insufficient alveolar bone. Autogenous bone is considered the gold standard for grafting but harvesting carries risks. Intraoral donor sites offer benefits like reduced morbidity and ease of access. This study aims to evaluate intraoral donor sites associated with the lowest morbidity, in order to guide clinicians in selecting the safest harvesting site for autogenous bone grafting.

Methods: this systematic review followed PRISMA guidelines (PROSPERO: CRD42024561388). A PECOS model was applied to define inclusion criteria. Searches were conducted in PubMed and Scopus up to February 2025, with additional manual and grey literature searches. Studies involving ≥10 patients and reporting on intraoral bone harvesting outcomes were included. Quality was assessed using NOS and Cochrane tools.

Results: from 2215 articles, 64 met inclusion criteria. Both donor sites provided sufficient graft volume. Neurosensory complications were significantly higher in chin grafts (permanent: 12.1%; transient: 54.9%) compared to ramus grafts (permanent: 0.08%; transient: 2.21%). Infection rate was low (1.72%) with no site-specific difference. Other complications (dehiscence, bleeding, edema, pulp vitality loss) were reported with variable incidence. Only a few studies reported on aesthetic outcomes and surgical time. While chin grafts may offer higher bone volume, they are associated with greater neurosensory risk. The ramus appears safer regarding permanent complications but yields denser cortical bone.

Conclusions: both intraoral sites are viable for autologous bone harvesting. Selection should be case-dependent, balancing graft needs and patient morbidity. The mandibular ramus may be preferred for lower risk of long-term complications.

FEASIBILITY OF IMPLANT PLACEMENT AFTER MOLAR EXTRACTION WITH OR WITHOUR ALVEOLAR RIDGE PRESERVATION TECHNIQUES: A SYSTEMATIC REVIEW

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Aim: to investigate if Alveolar Ridge Preservation (ARP) procedures after molar extraction is more efficient to preserve the ridge vertically and/or if there are additional benefit over spontaneous healing in feasibility of implant placement and need for further bone augmentation.

Methods: an electronic search was performed in accordance with the PRISMA statement on 4 databases, Cochrane, PubMed, Scopus, and Web of Science. This study included records with healthy individuals who underwent any type of ridge preservation following permanent molar extraction with information in feasibility of implant placement, need for further augmentation, height of the residual ridge with a follow-up of at least 20 weeks and at least 10 patients for group.

Results: eleven studies were incorporated in this review, a total of 374 teeth were extracted, of which 16 were premolar. ARP was undertaken in 253 sites, and 121 sites healed spontaneously. No significant difference was found that demonstrate the greater efficiency of one technique compared to another, with regard to ridge residual height. The meta-analysis conducted between sites that required further augmentation and the number of patients showed a high heterogeneity between the included studies suggesting differences in treatment protocols. Additional augmentation was required at 72 sites out of 286 patients.

Conclusions: within the limitations of this study, ARP partially compensates for the physiological bone resorption that occurs after extraction and leads to a greater residual alveolar height and consequently to an increased possibility of implant insertion without GBR techniques. It reduces the need for additional augmentation for implant placement. Further studies are needed with treatment protocols that standardize the parameters analyzed.

APPLICATION OF OZONIZED GEL IN POST-EXTRACTION SOCKETS IN CANCER PATIENTS AT RISK OF MRONJ: A RANDOMIZED SPLIT-MOUTH CLINICAL TRIAL

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Aim: this study evaluated the efficiency and safety of ozonized gel as an adjuvant to reduce the risk of MRONJ development during dental extraction in cancer patients.

Methods: a single-centre, split-mouth randomized clinical trial was conducted. Cancer patients treated with Bisphosphonates (BPs) at both high and low doses were included. All patients underwent periodontal screening and required the extraction of compromised teeth due to periodontal disease. In each patient, extractions were performed bilaterally, with one post-extraction site randomly assigned to ozonized gel application, while the contralateral site served as control. Wound healing was assessed using the Inflammatory Proliferative Remodelling (IPR) scale, with follow-up up to 180 days.

Results: four cancer patients were included in the study (M/F = 1/3, mean age 69.5). Two patients were receiving low-dose BPs treatment for Cancer Treatment-Induced Bone Loss (CTI-BL), while the other two were undergoing high-dose BPs therapy for malignant bone lesions. The mean duration of therapy for both groups was 18 months (SD±10.14). The ozone-therapy group showed improved post-extraction healing, particularly in the inflammatory and proliferative phases. The post-extraction site treated with ozonized gel achieved a mean IPR score of 14.50 (SD±0.58), whereas the control site recorded a significantly lower mean of 6.25 (SD±1.50). No patient developed MRONJ.

Conclusions: ozonized gel seems a promising adjuvant in prophylactic extractions to reduce MRONJ risk. Large-scale studies are needed to confirm findings and refine clinical protocols for ozone-therapy into surgery treatment.

POSSIBLE EFFICACY OF CROSS-LINKED HYALURONIC ACID IN DENTAL EXTRACTIONS IN PATIENTS WITH DIFFICOULT HEALING PROCESSES: A PRELIMINARY STUDY

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Aim: there is evidence that photobiomodulation (LPBM) promotes tissue healing by stimulating cellular repair and reducing inflammation. This randomised controlled study evaluates the efficacy of cross-linked hyaluronic acid gel (1.6% xHyA, 0.2% native HA) in improving healing and reducing postoperative pain after dental extractions, when combined with LPBM by means of Nd:YAG laser (1.25 W, 15 Hz, for 5 minutes) in patients with diabetes, under anti-resorptive therapy, head and neck radiotherapy or on chemotherapy.

Methods: nineteen patients who underwent dental extractions were divided into two groups: 11 patients in the test group, treated with a collagen sponge enriched with HA gel and LPBM, and 8 patients in the control group, treated with an empty sponge and LPBM. Healing was assessed at 3, 7 and 14 days using the Landry, Turnbull and Howley index while pain was measured at 1, 3 and 7 days using the VAS and NRS scales.

Results: patients treated with HA gel and LPBM showed better healing than the control group at 3 (3.72 vs 3.15), 7 (4.36 vs 3.75) and 14 days (4.9 vs 4.42) suggesting rapid re- epithelialisation and absence of inflammation. In addition, the VAS and NRS scales in the test group reported lower scores on pain, discomfort, difficulty chewing, stress, bleeding and postoperative drug consumption.

Conclusions: the study suggests that combining xHyA and LPBM may effectively enhance regeneration in patients with slow healing. xHyA's osteoinductive, anti-inflammatory and bacteriostatic properties support bone formation, accelerate tissue regeneration, shorten recovery time and improve clinical outcomes.

ADVANCED PIEZOELECTRIC SURGERY IN GERMECTOMY: POSTOPERATIVE ASSESSMENT THROUGH 3D FACIAL OEDEMA DETECTION

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Aim: this randomized controlled pilot study aimed to compare two surgical techniques for germectomy - a piezoelectric-assisted approach versus the traditional rotary instruments - and to evaluate their impact on post-operative sequelae.

Methods: a split-mouth randomized clinical trial was conducted in patients requiring bilateral mandibular germectomy. On one side, surgery was performed using piezosurgery with piezolevers (Piezoelectric Group, PG), while the contralateral side was treated using rotary burs and levers (Traditional Group, TG). Post-operative facial swelling (primary outcome) was assessed by 3D facial scanning. Secondary outcomes included pain (VAS), surgical time, trismus (maximum mouth opening), complications, and other patient-centered outcomes. Measurements were recorded pre-operatively, at 48 hours, and 7 days post-operatively.

Results: twelve patients (4 males, 8 females; mean age 14.5±2) and 24 germs (12 PG – 12 TG) were included in this preliminary clinical study. The PG showed significantly reduced facial swelling at 48 hours ($p < 0.05$) and lower VAS pain scores immediately after surgery and at 7 days ($p < 0.05$). No differences were found in surgical time between groups. No major complications occurred. After 7 days, both groups showed substantial clinical recovery with no significant differences in trismus or post-operative complications.

Conclusions: within the limits of this pilot study, the piezoelectric-assisted technique for germectomy appears to reduce early post-operative swelling and pain. Further studies with larger samples are needed to confirm these findings.