

PIEZOELECTRIC CORONECTOMY OF MAXILLARY THIRD MOLAR FUSED WITH THE SECOND MOLAR

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Aim: fusion of the root cementum of two adjacent teeth is known as concrescence. This condition is rare and most commonly occurs in the upper molars. Typically, the treatment involves the extraction of both involved teeth. The aim of our study is to introduce an alternative approach focused on preserving the second molar by employing the piezoelectric coronectomy technique for third molars.

Methods: a 74-year-old woman presented to the Dental Clinic of the University of Padua with localized pain in the upper right second molar. Bi- and three-dimensional radiographic examinations revealed carious lesions localized to the third molar, which was partially impacted, with its roots fused to the roots of the second molar. With the patient's consent, it was decided to perform a coronectomy of the

third molar. Following proper local anesthesia, a surgical access flap was created, and coronectomy of tooth 1.8 was performed using a dedicated insert mounted on a piezoelectric handpiece.

Results: the coronectomy of tooth 1.8 using piezoelectric surgery allowed preservation of tooth 1.7. At the clinical and radiographic follow-up after 3 months, the post-extraction socket showed early signs of ossification, and tooth 1.7 remained vital and asymptomatic.

Conclusions: the well-established surgical approach of coronectomy was innovatively applied to an upper third molar, allowing preservation of the second molar in the arch. Longer follow-up and a larger case series may provide further insights into the predictability of this technique.

NITROUS OXIDE COMBINED WITH MIDAZOLAM FOR 5TH GRADE GAG REFLEX MANAGEMENT IN ORAL SURGERY

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Aim: this study aims to report the case of a successful management of a very severe GAG reflex with a combined sedation technique.

Methods: the patient, a 62-year-old man (ASA 2), had a history of dental treatment failures due to a 5th grade GAG reflex according to Dickinson and Fiske Gag Severity Index (GSI). Previously, attempts with Nitrous Oxide (N₂O) sedation were made with no success and he was therefore treated with general anesthesia. The patient needed the extraction of the left second upper molar and to avoid general anesthesia a combined conscious moderate sedation was performed. After titration N₂O was set at 70% and a dose of 5 mg of midazolam I.V. were administered to reach a 3rd-grade Ramsay Scale of sedation. Vi-

tal parameters (NIBP, HR, and SpO₂) were continuously monitored.

Results: the tooth extraction was performed successfully. All vital parameters remained stable before, after, and during the procedure that lasted only 10 min. 0,4 mg of flumazenil were administered postoperatively because the patient, even if conscious, complained about the effect of midazolam sedation. The patient reported a postoperative hiccup lasting some hours and spontaneously resolved.

Conclusions: N₂O combined with midazolam can be effective in gag reflex management. Combining two techniques that allow titration makes the technique safe for dentists with adequate education and training (dental sedationist).

RARE LOCALIZATION OF ALVEOLAR FIBROMA IN AN INFANT: CASE REPORT AND HISTOLOGICAL EVALUATION

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Aim: to describe a clinical case of an unusual localization of alveolar fibroma in an infant and the surgical approach used for its removal and the subsequent histological investigation.

Methods: a 3-month-old patient was referred by pediatrician for evaluation of a suspected growth localized on the alveolar mucosa. The operation was performed under general anesthesia after administering of antibiotics. The suspected fibroma was removed using an electric scalpel after infiltration of local anesthesia, thus promoting a good hemostasis.

Results: the clinical examination showed an acceptable heal-

ing by secondary intention. The parents of patient reported that the procedure was well tolerated by the infant without complications. The histological evaluation highlights a polypoid formation, covered by malpighian epithelium, the site of mild parakeratotic hyperkeratosis with an aggregate of so-called cells CD68PGM1+, S100-, ALKD5F3-.

Conclusions: the electric scalpel can be used with good result for the removal of suspected alveolar fibroma with an adequate coagulation, no need for sutures and less inflammation and pain.

GUIDED ENDODONTIC SURGERY. A CASE REPORT

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Aim: the aim was to describe the application of a Guided Endodontic Surgery (GES) protocol.

Methods: GES was performed on tooth 47, which had a peri-apical lesion and a broken instrument beyond the apex in the mesial root. An optical impression was taken, and a cone beam computed tomography was performed. Then, both digital impression and CT scan were matched through the use of a dedicated software. After assessing the lesion and the thickness of the buccal cortical bone, it was decided to proceed with a piezosurgical guided approach using a 3D printed resin template with dental support. A bone lid and apexes section

were performed simultaneously with a piezoelectric insert. Then retrograde preparation and retrofilling with bioceramic cement was performed, and finally the lid was repositioned without fixation media.

Results: good healing of both soft and hard tissues was observed. The 3-year follow-up endoral x-rays and CT scan showed complete healing of the area.

Conclusions: the guided protocol could be useful in complex cases with large buccal bone thickness or surgical areas with nearby noble anatomical structures. The procedure is easy, quick and predictable.

RIDGE PRESERVATION USING AUTOLOGOUS DENTIN AND PRF FOR IMPLANT THERAPY: A CASE REPORT

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Bone remodeling after dental extraction may limit dental implant rehabilitation. Two autologous materials - Demineralized Dentin Matrix (DDM) and platelet concentrates (PRF) - are new alternatives to conventional bone substitutes. DDM shows both osteoconductive and osteoinductive properties, and PRF facilitates the healing and can be used with other substitutes to obtain PRF-blocks. This report aims to describe the combined use of DDM and PRF (dentin block) in a ridge preservation procedure for implant rehabilitation and to evaluate the histological quality of the regenerated site.

We extracted two periodontally compromised teeth (2.6, 2.7) in a healthy male aged 66. Teeth were cleaned, dried, and grinded producing particles ranging from 300 to 1200µm. The granules were immersed 5 minutes in a 0.5M NaOH and 20% ethanol

solution to dissolve organic remains and rinsed twice in saline solution. Patient's blood was collected to obtain A-PRF membranes (1500 rotations/min for 14 min in silicon-coated tubes) and liquid fibrinogen (1500 rotations/min for 14 min in clean tubes). During implant insertion, a tissue sample was then taken from area 2.6 to assess the quality of the regeneration.

The histological evaluation showed the presence of regenerated bone tissue, confirming the osteoconductive properties of the dentin block. At site 2.7, adequate thickness was observed for implant placement, while at site 2.6 a sinus lift procedure was necessary.

The use of dentin-block allowed to maintain the thickness of the alveolar ridge, confirming the effectiveness of this technique.

A CONSERVATIVE SURGICAL APPROACH TO A UNICYSTIC AMELOBLASTOMA: A CASE REPORT

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Aim: ameloblastoma is a slowly growing benign tumor of an odontogenic epithelial origin and it is well known for its local invasivity. The enucleation and curettage are considered conservative treatments, but with a major possibility of recurrences; on the contrary, the segmental resection and the "resection en bloc" are considered more aggressive and with minor recurrence rate. The surgical approach should be chosen according to some parameters: the histologic and dimensional aspects of the neof ormation, the adjacent anatomical structures and the age of the patient.

Methods: a healthy 61-year-old female patient has shown a radiographic aspect of a mandibular osteolytic area with a rhizolysis of 4.5 and 4.6. An incisional biopsy was performed in

order to identify the nature of the neof ormation. Therefore, a conservative surgical approach, with simultaneous extraction of 4.5 and 4.6, was performed. The patient was submitted to a post-surgery radiological control every 6 months for the first five years and every 12 months for the next five years.

Results: after ten years, a radiographic follow-up showed no recurrences. The conservative surgical treatment of the ameloblastoma was able to assure the healing of the mandibular neof ormation.

Conclusions: a unicystic ameloblastoma can be treated with many different surgical approaches. The reported case has evidenced how, in selected patients, a conservative treatment can provide results comparable to more demolitive treatments.

MANAGEMENT OF GINGIVAL FIBROMATOSIS: SURGICAL TECHNIQUE

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Aim: gingival fibromatosis is a rare disorder characterized by a benign, non-hemorrhagic, fibrous gingival overgrowth that can appear in isolation or as part of a syndrome. The aim of this study is to show the surgical treatment of this condition.

Methods: it is reported a clinical case of a healthy 54-year-old male patient with poor oral hygiene with a sessile mucosal lesion of 2.4 cm which cover 3 mm of the 1.1 and 1.2 crowns. It had thickness of 1 cm in the central portion and it was covered by undamaged mucosa. The patient reported aesthetic and masticatory problems. Radiographically there were no suggestion of pathological manifestation. A gingival fibromatosis was suspected, and it was planned excisional biopsy. Once anesthesia with vasoconstrictor was done, the surgical tech-

nique is performed with an internal bevel gingivectomy in association with gingivoplasty. Then horizontal mattress suture was used in order to facilitate the second intention healing. In the following days the patient used a local therapy with 0.12% chlorhexidine oral rinse twice a day for 1 week and a systemic therapy with amoxicillina 1 g every twelve hours for 1 week. After 1 week the suture was removed. Two years follow up evidenced no recurrences.

Results: the histological examination confirmed the hypotesis of fibroma.

Conclusions: the surgical therapy of complete excission of the lesion has proven to be effective in the treatment of gengival fibromatosis.

REPLANTING ELEMENT 38 IN POSITION 37

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Aim: the auto-transplantation consists in the replacement of a dental element, indicated for extraction, with a healthy element; in the post-extraction socket of the lost element. The aim of the treatment is to safeguard correct occlusion.

Methods: a 16-year-old patient presents with pain referred to the third quadrant and difficulty chewing. The radiological images highlight dysodontiasis of elements 3.7 and 3.8.

Once truncal anesthesia of the inferior alveolar nerve and plexus has been performed with a vasoconstrictor, a full thickness access flap and osteotomy are performed in the distal vestibule portion, with the aim of making element 3.8 visible, making extraction atraumatic. The tooth is preserved in physiological solution at a temperature of 281K to prevent its deteriora-

tion with the aim of keeping the periodontal ligament intact and vital. Once the element 3.7 has been removed and the socket surgically prepared, the dental transplantation of element 3.8 is performed. Finally, an occlusal splinting of elements 3.6 and 3.8 was carried out in order to stabilize it in place. The flap is sutured.

Results: two week later, radiograph shows good contact of the transplanted tooth with the recipient socket. Mobility and probing of the tooth were clinically assessed (not exceeding 3 mm around the tooth). One year later, complete bone healing was noted via intraoral x-ray around element 3.8.

Conclusions: given the patient's age, autotransplantation appears to be a valid solution, supported by literature.

FIBROUS HYPERPLASIA TREATMENT BY DIODE LASER: A CASE REPORT

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Aim: laser systems are an alternative to scalpel surgery in oral soft tissues interventions. Some advantages of laser systems are: easiness of application, educed surgical time, instantaneous coagulation, limited postoperative pain, reduction of bacterial load.

Methods: a circular lesion with defined margins of approximately 1cm is observed on the patient's left upper lip. Since its origin, about 3 months ago, the lesion had caused: aesthetic discomfort, chewing difficulties and spontaneous pain. The lesion is removed using a 980nm diode laser; antibiotic prophylaxis is no required. After peri-lesional anesthesia with vasoconstrictor, the excisional biopsy is performed by pulling the lesion, while using the laser with tangential movements to spontaneously create a cleavage plane. Laser settings: aver-

age power 1.8W, peak power 9W, frequency 20kHz, T-on 10s and T-off 40s, fiber diameter 400µm. Achieving effective hemostasis with the laser, stitches are not needed. The sample is stored in a tube with formalin and analyzed histologically. H-bagel plus is prescribed for the following 14 days, 3 times a day.

Results: the histological diagnosis is fibrosclerotic stromal nodule. At 7 days from the excision, the patient declares no pain, redness and swelling; nor painkillers were taken during the healing process. Clinically the recovery is still ongoing.

Conclusions: lesser invasiveness and better postoperative outcome may be observed in diode laser procedures, proving to be an excellent alternative to the conventional surgical treatment.

IMPLANT POSITIONING 2.4 WITH D.O.O.R. TECHNIQUE (DOUBLE OVERTURNING OF RIDGE)

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Aim: several horizontal bone regeneration modalities are available for implant placement, including onlay autologous bone grafting, split crest technique and GBR. The proposed clinical case was treated with the D.O.O.R. technique of Libertucci.

Methods: 31-year-old patient wanted to rehabilitate the edentulism of element 2.4. Given the insufficient horizontal bone volume, evaluated in CBCT with a thickness of 4.42 mm, we proceed with regeneration. After antibiotic prophylaxis, plexus anesthesia with vasoconstrictor is performed. Once a trapezoidal mucoperiosteal flap has been performed, the cortex is segmented with two vestibular cuts and one crestal of 8mm depth and the bone fragment is fractured. This is stored in physiological solution at a temperature of 281K to prevent deterioration.

We proceed with implant positioning (3.8 x 13 mm), performing an osteotomy 5 mm deeper than the fragment taken, to guarantee primary implant stability. The cortical part of the fragment is reduced, and a double reversal is performed (according to the minor and major axis) to improve its adaptation to the implant. The stability of the graft is guaranteed only suturing the flap.

Results: at 8 months, radiological osseointegration and clinical implant success can be confirmed; a temporary resin crown is placed. 1 year after the operation, CBCT is performed to evaluate the regenerated bone thickness which turns out to be 6.95 mm, the implant is definitively prosthetic.

Conclusions: correct implant osseointegration confirms that D.O.O.R. is an excellent regenerative surgical alternative.

ENDODONTIC SURGERY OF ELEMENT 1.2 IN PATIENTS WITH AESTHETIC PROSTHESES: A CASE REPORT

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Aim: endodontic surgery is a retreatment alternative in cases of complicated anatomy of the apical third (associated with cysts, recurrent abscesses and granulomas), impossibility of orthograde retreatment, difficulty in managing aesthetic prostheses.

Methods: the 42-year-old patient show painful symptoms in element 1.2, which results positive in the percussion test; periapical lesion confirmed radiographically. The tooth is part of a prosthetic covering of elements 1.3 to 2.3. Before surgical treatment, CBCT is performed. After antibiotic prophylaxis, local plexus anesthesia with vasoconstrictor is performed. Once a mucoperiosteal paramarginal trapezoidal flap has been performed, the apex of the element is seen given the absence of

vestibular cortex. The inflammatory tissue is removed and, using an ultrasonic piezoelectric tip, 3 mm of the root apex is excised at an angle of approximately 45°. Haemostasis achieved, the canal is prepared using ultrasonic tips. The filling of the new apex is performed using MTA cement. The flap is sutured using 5/0 nylon thread. Postoperative control x-ray is performed.

Results: at 6 months, the initial radiolucent area appears to have reduced. Furthermore, the patient does not present pain, swelling, sensitivity to percussion or discoloration of the element.

Conclusions: the regression of the lesion and the absence of symptoms confirm that endodontic surgery is a valid alternative in the case of aesthetic prosthetic rehabilitations.

COVID-19 AS A CRITICAL RISK FACTOR FOR ONJ: DIAGNOSTIC CHALLENGE AND SURGICAL TREATMENT

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Aim: this case report aims to describe a rare invasive rhinomaxillary aspergillosis and mucormycosis, with osteomyelitis of the maxillae, in a post-COVID-19 patient, treated with Corticosteroids (CS).

Methods: in November 2021, a 74-y-old male patient was referred with unilateral rhinorrhea, cacosmia, persistent cough and frontal headache. The patient suffered from a severe form of COVID-19 infection 3 months before our inspection and he was treated with a long-term CS therapy, also due to a consequent maxillary sinus bacterial infection. Clinically, he showed diffuse edema on the left facial areas with a suborbital fistula, a left oro-antral fistula with purulent exudate and a diffuse necrotic bone exposure. D-dimer and fibrinogen values were high. The swab of the purulent exudate showed the presence

of the *Aspergillus Niger*. CBCT showed a remodeling of the maxillary, zygomatic and latero-orbital region. MRI showed inhomogeneous perimaxillary-zygomatic-orbital soft tissue signal. Therefore, he underwent bone sequestrectomy surgery.

Results: the analysis of the purulent exudate showed the presence of the *Aspergillus Niger* and histologic findings established the diagnosis of Mucormycosis. 3 months post-op, he was rehabilitated by a prosthetic obturator. During the follow-ups, the patient received no further treatment.

Conclusions: this case report highlighted a potential association between SARS-CoV-2 infection and ONJ, as complication arising from COVID-19-induced coagulopathy. Furthermore, SARS-CoV-2 infection may amplify the risk of superinfections by opportunistic pathogens.

CONICAL EXPANDERS FOR IMMEDIATE CONE MORSE DENTAL IMPLANT POSITIONING IN THIN BONE RIDGES

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Aim: this case report aims to assess the clinical outcomes of using Cone Morse implants in a split crest augmentation treatment in patients with horizontal atrophic ridges needing regenerative procedures for dental implants-supported rehabilitation. Cone Morse taper implants are known for their precise prosthetic interface, featuring no microgaps or micromovements at the interface.

Methods: a split crest procedure followed by implant-supported rehabilitation was performed in a female patient with partial edentulism in an atrophic posterior maxilla. The procedure involved elevating a full thickness flap and making horizontal and vertical osteotomies using a piezoelectric device. 4 Cone Morse Taper implants (Universal III, Implacil de Bortoli, Brazil)

were placed, and a bone substitute covered with a heterologous membrane was placed on the surgical site.

Results: in this study, the postoperative course was uneventful, and no complications related to the bone ridge expansion was reported. Moreover, a high stability of hard and soft tissue after the procedure was reported at the follow up.

Conclusions: complete healing of the surgical site was observed at the follow-up, with no signs of bone resorption. Radiographic examination showed no radiolucency or inflammation at the treated site. The use of simultaneous Cone Morse implants with the split crest technique appears to be a promising approach for the rehabilitation of atrophic edentulous ridges in the posterior maxilla.

CAVERNOUS HEMANGIOMA OF THE TONGUE: CASE REPORT AND LITERATURE REVIEW

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Aim: the aim of this study was to present a case report concerning cavernous hemangioma of the tongue. A systematic literature review was conducted to extract the characteristics, diagnosis, and management of cavernous hemangiomas.

Methods: a 13-year-old Caucasian female patient presented to our observation at the Department of Dentistry and Dental Prosthetics, IRCCS San Raffaele Hospital, Milan, Italy, with a circular, blue-violet, linguo-edematous protrusion without painful symptoms. The neof ormation was adherent. The association between symptoms and physical examination led to the diagnostic hypothesis of hemangioma. The lesion underwent histological examination confirming the diagnostic hypothesis. The patient was enrolled in a 1-year follow-up program.

For the study, a systematic literature review was conducted in-

volving searches in electronic databases including Cochrane Oral Health Group Specialized Register, Cochrane Central Register of Controlled Trials (CENTRAL), Web of Science, PubMed, EMBASE, and Google Scholar.

Results: no recurrences were observed after one year of follow-up. Based on inclusion and exclusion criteria, 7 articles were selected.

Cavernous hemangiomas predominantly affect females. They are rare in the oral cavity and require surgery in 10-20% of cases due to size and location, compromising swallowing and phonation.

Conclusions: cavernous hemangioma represents a benign proliferation of endothelial cells, primarily observed in the lip within the oral cavity. Surgical excision is the gold standard.

SURGICAL-ORTHODONTIC TREATMENT OF AN ENCLOSED MANDIBULAR CANINE: CASE REPORT

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Aim: this paper documents a case of inclusion of the mandibular right canine in the arch with orthodontic surgical treatment.

Methods: some of the causes of canine bone inclusion are: failure to resorb the deciduous canine, obliteration of the gubernaculum dentis with loss of eruptive guidance, lack of space in the arch, ect. In a patient aged 11.5 years, the absence of permanent canines and retention of deciduous canines is found in the dental arches. After an evaluation with orthopantomographic radiographs a dental inclusion of the 4.3 element with the crown inclined towards the apices of the lower incisors 4.1 and 4.2 is shown.

An X-ray CBCT was also performed for correct planning of the operation, the location of the dental elements and anatomical structures.

After local anesthesia the avulsion of the deciduous element (8.3), the execution of a full-thickness flap with a mesial verti-

cal incision at 4.1 to expose the cortical bone and the crown of 4.3 was performed. Using an adhesive technique, an orthodontic button was placed on 4.3 to which a metal ligature was attached for traction in the arch and finally, non-absorbable sutures were applied.

Results: correct repositioning in the dental arch was achieved 8 months after surgery and orthodontic traction of the included canine.

Conclusions: the success of the orthodontic surgical therapy of the included canine depends on an early and accurate diagnosis made with dedicated clinical and radiological examinations such as rx OPT and CBCT considering some predictive factors of the dental eruption such as the axis of eruption of the included canine, persistence of the corresponding deciduous tooth, necessary space in the dental arch.

SURGICAL ENDODONTIC TREATMENT OF MANDIBULAR INCISOR: A CASE REPORT WITH ONE YEAR FOLLOW-UP

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Aim: this clinical case evaluates the effectiveness of endodontic surgery when non-surgical treatment of the right mandibular incisor has failed.

Methods: a 15-year-old female patient came to San Raffaele Dental Clinic reporting an abscess in the mandibular incisors. After clinical and radiological examination, an osteolytic apical lesion was observed. Dental pulp vitality testing of the incisors was negative so, elements 42, 41, and 31, were submitted on root canal treatment. After 9 months, a radiographic control revealed the persistence of the lesion apically to the element 41, so an apicoectomy on the 41 was performed. Under local anesthesia, a triangular mucoperiosteal flap was elevated from 43 to 33, exposing the lesion that was carved to reduce endo-

cystic pressure. Once the lesion was enucleated, the apex of element 41 was cutted by 3 mm, retrograde instrumentation was executed using ultrasonic tips and sealed with MTA. The cavity was filled with collagen sponges. The flap was sutured using interrupted absorbable 4/0 sutures.

Results: histological exam reveals that the lesion was benign and related to the tooth. Radiographic control at 1 year shows that the periapical lesion has completely healed after the apicoectomy and new bone has formed.

Conclusions: this case shows the power of endodontic surgery and its aiding in bone healing. Clinicians must balance risk and benefits between treating or extracting endodontically treated teeth with correct patient selection and operator skill.

LARGE MAXILLARY DENTIGEROUS CYST ASSOCIATED WITH IMPACTED THIRD MOLAR: A CASE REPORT

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Aim: the aim of this case report is to evaluate the correct surgical management of a large osteolytic lesion associated with an impacted third molar.

Methods: a 36-year-old female patient came to San Raffaele Dental Clinic, reporting pain in the upper right maxilla. After clinical and radiological examination, an impacted upper third molar (18) was observed to be very close to the maxillary sinus and was affected by a massive osteolytic lesion. Under local anesthesia, a trapezoidal mucoperiosteal flap was elevated from 14 to 17, revealing that the vestibular cortical wall of the maxillary sinus had been completely eroded. After subluxation, the tooth was extracted from the sinus. Once the lesion caused by stretching was removed, an oroantral communication occurred. A bi-

chat fat pad was isolated and mobilized to close the communication and anchored to the flap via sutures. In the end, the initial flap was sutured using interrupted and crisscrossed stitches.

Results: histological exam reveals that the lesion was a dentigerous cyst, benign and related to the tooth. Radiographic control by CBCT at 1 year proves that the osteolytic lesion has completely healed after the avulsion, new bone has formed, and the patient has no symptoms.

Conclusions: this case shows how even a large and difficult osteolytic lesion can be successfully enucleated and that if the anatomical structures are preserved and the oroantral communication repaired, the healing process is fast, complete and predictable.

USE OF TAD FOR THE TREATMENT OF IMPACTED MANDIBULAR SECOND MOLAR: INNOVATIONS IN TECHNIQUE

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Aim: the anomalies of eruption affecting second molars, although relatively rare, can be a challenging issue to deal with. Several orthodontic and surgical techniques have been described in the literature.

The aim of the present case report is to present a novel approach to distalize and to upright the impacted mandibular second molars using a Temporary Anchorage Device (TAD).

Methods: a 16 years-old patient with an impacted second molar (37) was selected. The tooth was retained between the crown of the first molar and the third molar germ. The orthodontic-surgical protocol consisted in extracting the third molar germ and positioning a screw distally to the extraction socket, in the mandibular ramus. After that, an orthodontic button was bonded on the impacted second molar and a 200 g NiTi closed

coil spring was secured both to the TAD with a cover screw and the button. In this way, the direct traction force exerted by the spring allowed for bone remodeling, facilitating tooth movement. After 2 months, the tooth 37 was completely uprighted and, consequently, the skeletal anchorage was removed.

Results: after a relatively short period of time, tooth 37 achieved the desired position in the arch by taking advantage of the chosen TAD, its components and morphology, and the advantage of the intense bone remodeling resulting from the extraction of the third molar germ.

Conclusions: although further clinical trials are needed, it seems that this approach represents a valid alternative to the surgical and orthodontic techniques already proposed in the literature.

BONE HISTOLOGICAL EVALUATION OF RIBOSE CROSS-LINKED COLLAGEN SPONGE IN ARP PROCEDURES

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Alveolar Ridge Preservation (ARP) is a procedure recommended to prevent bone volume resorption following tooth extraction. At the end of the healing process, biomaterial that is not reabsorbed remains unabsorbed in the bone over time. In this context, ribose cross-linked biomaterials have been proposed, which have demonstrated their ability to promote osteoconduction and complete resorption.

Aim: the aim of the study was to observe through histomorphology if a sponge of collagen cross-linked with ribose undergoes a substantial resorption maintaining the volume of bone and regenerates new bone.

Methods: after the extraction a sponge of collagen cross-linked ribose (Ossix[®] Bone) with was placed in the cavity and left uncovered at the end of the procedure. After six months,

the biopsy sample was taken immediately before the implant was inserted. Histological analysis was then performed.

Results: at six months, CBCT shows advanced cortical mineralization and slight transparency in the inner part of the newly formed bone. The newly formed tissue was composed of: 28.75%±1.30% osseified matrix with a high level of mineralization, 56.42%±2.32% ossifying matrix in the mineralization phase, 14.83%±3.62% bone marrow space.

Conclusions: ribose-crosslinked collagen sponge emerges as a promising alternative to traditional biomaterials in Alveolar Ridge Preservation (ARP) techniques. Its use eliminates the need for flap advancement or adding a membrane to cover the graft, potentially lowering invasiveness, simplifying procedures, and cutting overall treatment expenses.

TREATMENT OF PATIENT WITH INDOLENT MASTOCYTOSIS AND BIPHOSPHONATE THERAPY: A CASE REPORT

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Aim: this case report illustrates the dental management of a patient with indolent mastocytosis undergoing bisphosphonate therapy.

Methods: D.P., male, 49 years of age, smoker, diagnosed with indolent mastocytosis and severe systemic osteoporosis with multiple vertebral fractures was referred from his general practitioner. The patient presented with swelling on the left hemimandible and pain on tooth 36, which was non-responsive upon vitality testing. Panoramic radiography revealed a periapical radiolucency around the roots of tooth 36, leading to the decision to extract the tooth. The patient had a high risk of anaphylaxis related to indolent mastocytosis and an increased risk of MRONJ due to intravenous bisphosphonate therapy for more than 3 years.

Results: tooth 36 extraction was planned, applying a dual protocol to prevent potential anaphylaxis and MRONJ. The patient followed an antiseptic protocol and antibiotic therapy to prevent MRONJ, including rinsing with 0.12% chlorhexidine starting one week before the procedure, and a combination of clarithromycin and metronidazole starting the day before the procedure and continuing for the following 7 days. During the operative session, the patient's vital signs were monitored and local anesthetics without reported anaphylactic reactions were used. The patient was discharged without complications, and the post-operative course was uneventful.

Conclusions: implementation of appropriate preventive protocols is essential to avoid perioperative and postoperative complications.

MARSUPIALIZATION OF MANDIBULAR DENTIGEROUS CYST IN A PEDIATRIC PATIENT: A CASE REPORT WITH 4-YEAR FOLLOW-UP

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Aim: among odontogenic cysts, the dentigerous cyst is the second most common after the root cyst. This neof ormation develops from the tooth follicle, it is associated with an impacted or unerupted tooth and characterized by slow and asymptomatic growth. Radiographically, it appears as a well-defined radiolucent area with sharp margins and a characteristic radiopaque rim and is associated with the crown of an unerupted tooth. The aim of this study is to present a case of a dentigerous cyst treated by marsupialization.

Methods: a 12-year-old girl is referred for evaluation following an occasional radiographic finding that occurred during a visit for orthodontic evaluation. Based on clinical and radiographic examination, and considering the size of the le-

sion, it is decided to proceed with a marsupialization and incisive biopsy of the lesion. The fragment is sent for histopathological analysis, which confirms the initial diagnostic hypothesis of a dentigerous cyst. Subsequently, the patient is placed on an annual follow-up protocol for long-term evaluation of healing.

Results: at follow-up visits, the progressive eruption of the premolars and the clinical and radiographic disappearance of the lesion are evident, in the absence of recurrence.

Conclusions: the surgical protocol employed proves to be effective in treating the lesion, promoting good bone healing, and facilitating normal development of the permanent dentition while reducing surgical risks.

BICHAT FAT PAD IN ORO-ANTRAL COMMUNICATIONS: A CASE REPORT WITH A REVIEW OF THE LITERATURE

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Aim: the Bichat's fat pad is an adipose tissue located in the para-pharyngeal spaces. It is also used in oral surgery for the closure of larger oro-antral communications.

The aim of this study is to examine and compare the difficulty of repositioning the Bichat's fat pad in patients presenting with interposition of compromised dental elements between the harvesting area and the repositioning zone.

Methods: a 59-year-old patient presented with discomfort in the first quadrant, which upon physical examination revealed an oro-antral fistula, confirmed by radiographic imaging. As documented in literature, the absence of dental elements facilitates the mesial repositioning of Bichat's fat pad.

Results: the presence of dental elements hinders the proper

mesialization of Bichat's fat pad. Avulsion of these elements facilitated tissue gain and reduced tension during flap repositioning. Consistent with literature findings, this case report underscores the efficacy of Bichat's fat pad in promoting optimal healing.

Conclusions: this case highlights how the absence of dental elements facilitates adipose tissue gain during the mesial repositioning of Bichat's fat pad, aiding in the effective closure of oro-antral communications. Conversely, the presence of dental elements restricts the amount of available adipose tissue from Bichat's fat pad during translocation. Hence, their extraction is favored to ensure proper mesialization of the fat pad and adequate coverage of the oro-antral communication.

ORAL SURGERY AND DENTAL IMPLANTS PROCEDURES IN SUBJECTS WITH CHRONIC KIDNEY DISEASE

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Aim: the Chronic Kidney Disease (CKD) cases requiring renal treatment/organ replacement therapy represent a consistent occurrence in the medical and dental clinical practice. The aim of the present review was to evaluate the clinical management of subjects affected by chronic kidney disease and renal dialysis in the oral surgery and dental implant clinical practice.

Methods: the narrative review was conducted considering the PubMed/Medline, Google Scholar, Scopus Databases.

Results: the most common oral involvements in the patients concerns with periodontal disease, gingival hyperplasia, alteration of the composition and secretion rate of saliva, uremic

stomatitis. In these subjects, uremic stomatitis and xerostomia are common in patients on dialysis and kidney transplant recipients. CKD subjects are generally affected by severe changes in bone metabolism due to calcium, phosphorus, vitamin D homeostasis, as well as parathyroid hormone and FGF (Fibroblast Growth Factor) modulations. These factors are involved with bone demineralization bone trabeculae and cortical bone thickness reduction, fibrocystic bone lesions, fractures and delayed wound healing after tooth extraction.

Conclusions: for these reasons, oral health management of elderly hemodialysis patients poses serious clinical problems and require a scrupulous management of the clinical picture.

MANAGEMENT OF DIFFUSE GINGIVAL OVERGROWTH IN PAEDIATRIC PATIENT WITH NEPHRONOPHTHISIS

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Aim: the aim of this report is to show the surgical management of diffuse gingival overgrowth in a paediatric patient with nephronophthisis (NPHP), a rare inherited renal cystic pathology causing end-stage renal disease.

Case presentation: in July 2023, a 13-year-old male patient with NPHP, combined kidney-liver transplant, cerebral ischemia with focal epilepsy, hearing loss, and blindness was referred to the Complex Unit of Odontostomatology of Policlinico of Bari because of diffused gingival overgrowth. Every day, the patient received immunosuppression by 500 mg mycophenolic acid and 6.5 mg tacrolimus; antiepileptic therapy by 210 mg phenytoin and 3.75 mg nitrazepam. The gingival overgrowth caused the failure of the exfoliation of the deciduous

teeth, the absence of several permanent teeth, diffuse cavities and difficulty chewing and swallowing. Dental treatments were performed under general anesthesia. First, the authors performed diode laser gingivectomy (continuous power output of 7 W, contact technique) to expose four permanent teeth and extracted five persisting lower deciduous teeth. The authors sent samples of the excised gingiva for histological examination. The complete healing of the treated sites occurred without postoperative complications after three weeks.

Conclusions: gingivectomy is a necessary surgical procedure to allow normal feeding in those patients. Prolonged follow-up is mandatory to avoid recurrences and decide the timing of continuation of the treatment.

MRONJ TREATMENT USING A-PRF: CASE REPORT

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Aim: the aim of this study is to evaluate the effectiveness of using L-PRF in the treatment of patients with medication-related osteonecrosis of the jaw (MRONJ), assessing its impact on the healing process and improvement of clinical outcomes.

Methods: the CARE guidelines were followed to enhance the reliability of this case report. A 75-year-old Italian woman with severe osteoporosis presented to our observation with complaints of pain in the left maxillary arch, attributed to an ill-fitting prosthesis. The diagnostic process described by the “S.I.C.M.F.” (Italian Society of Maxillofacial Surgery) and “S.I.P.M.O.” (Italian Society of Oral Pathology and Medicine) was used to determine the severity of the case, which was classified as grade 3b. The patient was prescribed a one-week drug holiday before the surgical intervention.

Results: two months post-surgery, the fistula was completely closed, and no further treatments were necessary. At this point, the patient will undergo follow-up appointments not exceeding 6 months. The 8-month follow-up post-surgery showed complete wound healing, no evidence of MRONJ-related symptoms, and no clinical or radiographic evidence thereof.

Conclusions: while our understanding of MRONJ is growing, there are currently no established treatment protocols involving L-PRF. Both existing literature and our clinical experience indicate that this technique could represent a promising option for managing severe cases of MRONJ. Therefore, the aim is to encourage further comprehensive studies in this area to develop robust treatment guidelines.

RECURRENT AMELOBLASTOMA IN A 63-YEAR-OLD FEMALE PATIENT: A CASE REPORT

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Aim: ameloblastoma is a benign odontogenic tumor generally affecting the jaw bone. It clinically appears as an aggressive, often asymptomatic, and slow-growing tumor. Its treatment is focused on surgical resection with a wide margin of normal tissue because of its relatively high recurrence rate. This study aims to describe a clinical case of a 63-year-old female patient affected by recurrent ameloblastoma, treated twice with surgical resection.

Methods: in 2017 the patient was sent to the Oral Surgery Unit of Dental School in Turin for an oral examination, after a tumefaction located to 3.3 and 3.4 had appeared. The patient was surgically treated and then returned annually for follow-up. The

histological examination led to the diagnosis of ameloblastic fibrome. In October 2023 radiological findings of recurrence were detected. On the 22nd of November the lesion was surgically removed, resecting a wider margin of normal tissue and preserving the adjacent teeth (3.3 and 3.4).

Results: the resected lesion had a soft consistency and was approximately 5mm in diameter. The histological report confirmed once more the diagnosis of ameloblastoma, proving the patient was affected by a recurrent benign odontogenic tumor.

Conclusions: this case report showed the importance of correct follow-up management concerning relatively high recurrence rate diseases.

GNATHODIAPHYSEAL DYSPLASIA: REVIEW OF THE LITERATURE AND TREATMENT OF TWO CLINICAL CASES

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Aim: the aim of this paper is to perform a literature review regarding the etiopathogenetic aspects of Gnathodiaphyseal Dysplasia (GDD), in particular to the cervical-facial characteristics.

Methods: a literature search on PubMed and Scopus was carried out using the following keywords (“Gnathodiaphyseal Dysplasia”; “anoctamin 5”; “jawbone disease”; “fibro-osseous lesion”).

Two clinical cases of GDD patients (mother and son) are presented: the syndrome was diagnosed on the basis of bone alterations and genomic analysis that shows the mutation of the p.Thr513Ile gene. Patients came to the dental clinic of Santi Paolo and Carlo hospital for the surgical treatment of maxillary

exostosis due to the syndrome, and for the extraction of the symptomatic mandibular right third molar respectively.

Results and conclusions: Gnathodiaphyseal Dysplasia is a rare autosomal dominant syndrome due to a mutation in the ANO 5 gene. It is characterized by maxillary fibro-osseous lesions, bone fragility, diaphyseal cortical thickening and bowing of long bones. However, there is great variability between patients. Genetic screening is at present the only reliable diagnostic tool. Gnathodiaphyseal Dysplasia is a rare genetic syndrome that requires in-depth study and a multidisciplinary team. The consequences of this syndrome may be strongly compromised the quality of life of these patients.

ODONTOGENIC CUTANEOUS FISTULA: A LITERATURE REVIEW AND A CASE REPORT

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Aim: Odontogenic cutaneous fistula (OCF) is a rare pathological communication between the oral cavity and the facial cutaneous surface, as a spontaneous route for the drainage of purulent material from a chronic dental infection. Typically manifesting in middle-aged individuals, OCF predominantly involves mandibular teeth in 80% of cases. This case report aims to delineate the diagnostic approach and surgical management of an OCF, from initial assessment to resolution over a 2-year follow-up.

Methods: a 39-year-old male presented with a purulent swelling at the left malar region, corresponding to the premolar region. Orthopantomogram revealed a radiolucent lesion around the apex of tooth 2.5, etiologically linked to the cutaneous lesion. Following antibiotic therapy and plexus anesthesia, tooth

2.5 was extracted without subsequent suturing to facilitate drainage of pus. The patient underwent postoperative follow-up until complete healing and resolution of symptoms.

Results: following the elimination of the infectious source through tooth extraction, the patient ceased experiencing purulent discharge and the cutaneous drainage site resolved completely with residual scarring.

Conclusions: approximately half of OCF cases are initially misdiagnosed as dermatological lesions, underscoring the necessity of considering dental etiology in the differential diagnosis of orofacial skin lesions. Endodontic intervention or dental extraction serves to eradicate infection and promote healing of the lesion via secondary intention within a short timeframe, without further therapeutic measures.

SURGICAL TREATMENT OF A MANDIBULAR CYST: LITERATURE REVIEW AND CASE REPORT

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Aim: this clinical case aims to present a case of extraction of the inferior third molar associated with a cystic lesion.

Methods: a 35-year-old patient presented for a routine checkup. Radiographic examination revealed the presence of an osteolytic lesion associated with tooth 3.8. Following a thorough intraoral and extraoral examination, extraction of tooth 3.8 and simultaneous excision of the associated cystic lesion were proposed. Under local anesthesia, a triangular mucoperiosteal flap was raised, osteotomy was performed, and the tooth was extracted along with excision of the associated lesion. The flap was closed with interrupted and crossed sutures. The patient was discharged with prescriptions for antibiotics and analgesics, along with instructions for mouthwash using 0.2% chlorhexidine.

Results: at the one-week follow-up appointment, stitches were removed and the wound had healed well with no changes in sensitivity in the affected area. The patient underwent a follow-up protocol, including check-ups and X-ray examinations at 3, 6, and 12-month intervals until complete healing of the tissues involved. At the 12-month follow-up, the intervention site was completely healed and there was no recurrence.

Conclusions: consistent with existing literature, surgical excision of the lesion, aided by a piezoelectric instrument and appropriate surgical technique, is deemed one of the optimal treatments for preserving the integrity of the inferior alveolar nerve, especially in cases of close proximity to vital structures and considering the reduced size of the injury.

SURGICAL TREATMENT OF AN ODONTOGENIC CYST IN THE RETROMOLAR AREA

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Aim: this case report aims to demonstrate the treatment approach for an odontogenic osteolytic lesion located in the retromolar area, along with a literature review to enhance understanding of diagnosis and treatment strategies for that lesions.

Methods: a 63-year-old healthy patient presented to the Department of Dentistry of IRCCS Hospital San Raffaele, Milan, Italy, with swelling in the retromolar area. Radiographic examinations (panoramic radiography and cone-beam computed tomography) revealed a multilocular osteolytic lesion. An incisional biopsy was performed, resulting in decompression of the lesion through drainage, which was removed after 12 months. Histopathological examination confirmed the diagno-

sis of an odontogenic cyst in the retromolar area. The patient underwent follow-up at 3, 6, and 12 months postoperatively.

Results: at the 1-year follow-up, the patient had an excellent postoperative recovery with normotrophic tissues and no recurrence of the lesion.

Conclusions: conservative approaches can be effective in treating various osteolytic lesions, promoting healing without resorting to invasive or disabling techniques. Adequate follow-up is crucial to prevent recurrence, and patients should adhere to rinsing protocols and use caution during chewing to minimize the risk of bone fractures resulting from weakened bone.

REPLANTATION OF A CENTRAL INCISOR AFTER TRAUMATIC AVULSION

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Aim: this case report illustrates the successful management of an avulsed maxillary central incisor through replantation, despite being outside the oral cavity for about 24 hours and preserved in saline solution with incisal fracture.

Methods: a 14-year-old female patient presented with a traumatic dental injury to the anterior maxillary region following a accident. Clinical examination revealed an avulsed tooth (tooth 1.1), which was replanted after root canal therapy performed outside the oral cavity, rifamycin irrigation of the tooth socket, and then stabilized using metallic splinting from 1.4 to 2.4. Four weeks postreplantation the splinting was removed. Regular follow-up appointments are necessary to assess the

absence of clinical signs and symptoms, as well as to confirm the absence of resorption upon radiographic examination.

Results: the element 1.1 remains stable, shows no signs of suppuration and no pain or sensitivity to percussion.

Conclusions: replantation stands as the primary treatment choice following avulsion, as it not only addresses the patient's functional and aesthetic concerns but also maintains the integrity of the surrounding bone for potential prosthetic intervention if replantation fails. Despite a prolonged extra-oral time, successful replantation of an avulsed tooth is achievable when all recommended guidelines and protocols are adhered to.

MANDIBULAR IMPACTED CANINES TREATMENT WITH VISTA TECHNIQUE: CASE REPORTS

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Aim: canine disimpaction is a common occurrence in orthodontic surgery. Various therapeutic approaches have been described in the literature for expose, guide and align impacted canines. Vertical Incision Subperiosteal Tunnel Access (VISTA) technique has been recently proposed to treat impacted canines. Introduced by Zadeh to treat anterior recession defects, this technique has been modified by Chang for submucosal traction of maxillary vestibular impacted canines supported by Temporary Anchorage Devices (TADs). Since there are no data supporting the same approach in the mandible, three cases are presented.

Methods: two cases of unilateral and one of bilateral mandibular impaction are reported. Complexity factors include tight relation with incisors' root and significant canine displace-

ment. After local anesthesia with vasoconstrictor, a vertical incision is made to expose the impacted canine crown surface and to bond a button on it. Then a mini screw is inserted between the two premolars, followed by a second vertical incision, made in the ideal canine position, or distally to the deciduous canine. The mucosa is then dissected to create a subperiosteal tunnel in which a spring is passed, to be connected to the TAD.

Results: follow up showed optimal biomechanical outcomes for impacted canines with no complications for adjacent teeth and good canine periodontal conditions.

Conclusions: the successful results demonstrate that VISTA technique may be used even for mandibular canine disimpaction.

IMPACTED CANINE EXTRACTION AND IMMEDIATE POST-EXTRACTIVE IMPLANT PLACEMENT

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Aim: this case report shows the management of an impacted canine and the following immediate post-extractive implant placement in a one-stage surgery, by recurring to a particular vestibular access flap.

Methods: a 23-year-old girl presents the element 6.3 with a high mobility. After x-ray, the position of the impacted canine 2.3 is evaluated and different therapeutic options were proposed to the patient. The patient opted for the extraction of the deciduous tooth with the simultaneous extraction of the impacted permanent canine 2.3 with a non-functional immediate loading post-extractive implant placement. Pre-surgical planning suggests a vestibular access for the extraction surgery. Under local anesthesia, a full buccal flap is elevated, the osteotomy of the vestibular cortex is performed and the ex-

traction of 2.3 is carried out by using a dental elevator. A titanium dental implant is placed, and an immediate cemented-retained crown is attached to a screw-retained temporary abutment by relining with direct resin, obtaining an immediate non-functional loading.

Results: the vestibular extraction approach of an impacted canine is rarely performed as the element is usually tilted enough to be approached palatally. In this case the palatal approach would have compromised the stability of the implant to the palatine cortex.

Conclusions: this case demonstrates how to perform simultaneously extraction of an impacted canine with vestibular access with the placement of a non-functional immediate loading implant successfully at 24 months of follow-up.

INTRAORAL SURGICAL MANAGEMENT OF AN ACUTE MAXILLARY SINUSITIS DUE TO A SINUS LIFT FAILURE

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Aim: the authors describe the management of a clinical case of iatrogenic maxillary sinusitis related to the failure of a sinus lift procedure by an intraoral approach. The main goals of the surgical treatment were the removal of the graft material to empty the sinus and the detersion of the preserved dental implants for the resolution of the infectious condition.

Methods: a 62-year-old female patient in good health presented to the authors with signs of left maxillary sinus infection following a sinus lift with simultaneous dental implants placement performed 2 months earlier. Since previous antibiotic therapies had failed, surgical removal of the infected graft was necessary. In agreement with the patient, the im-

plants were left in situ as their primary stability was maintained.

Results: after the surgery, the patient showed a complete healing of the peri-implant mucosa and the radiological examinations no longer presented radio-opacity of the left maxillary sinus. 6 months after surgery the implants were loaded.

Conclusions: maxillary sinusitis is a possible complication after sinus lift; the clinical management may require, in addition to antibiotic therapy, a re-entry surgery and grafting material removal. Clinicians should consider if the maintenance of the implants is possible, although no clear evidence were found in recent studies.

ASPERGILLUS FUMIGATUS: THE CAUSE OF MYCOTIC SINUSITIS

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Aim: the study describes how to prevent the development of mycotic sinusitis, which are mainly supported by *Aspergillus Fumigatus* (AF).

Methods: ninety percent of fungal maxillary sinusitis are related to endodontic cement overfilling. To investigate this, studies were carried out on rabbits in which the A.F. was inoculated into the maxillary sinus. Cement is both a culture medium for fungi and induces ciliary paralysis, which leads to hyperplasia and finally block of the host. With the latter condition, eighty percent of Aspergillosis is observed, and the combination of zinc oxide and A.F. results in mycotic sinusitis.

Results: it turned out that root canals near the maxillary sinus, when treated with zinc oxide (ZnO) filling materials or

other metals, constitute a risk factor for the pathogenesis of mycotic sinusitis. This is a consequence of the fact that A.F., for its metabolism needs metals such as Zn, and its growth rate is directly proportional to the concentration of Zn itself. In addition, it has been observed that, eugenol is an inhibitor of A.F. but by mixing it its effect is reduced and after seventy-five days it decreases until it disappears.

Conclusions: fungal lesions of the maxillary sinus, caused by A.F., are observed in ninety percent of cases in patients who have been treated with canal therapy and in patients who have foreign bodies, in most cases they are represented by the root cement. Therefore, it is clear that to resolve this injury, the most effective therapy is to intervene surgically using the Functional Endoscopic Sinus Surgery (F.E.S.S.).

REHABILITATION ATROPHIC EDENTULOUS MANDIBLES WITH SHORT IMPLANTS ALL ON FOUR: CASE REPORT

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Aim: incorrect procedures in dental implant placement can lead to significant bone loss, functional, and psychological consequences. The aim of the study is to present a rehabilitation method in severely atrophic mandibles, facilitating thereby the protocol of all-on-four technique.

Methods: a 79-year-old male presented at E.R. with a significant abscess in the submandibular region, swelling and fever, complaining about pain after an implant placement surgery. He underwent to an emergency implant removal and drainage of the abscess. After an 8-month follow-up, CBCT showed a 12 mm bone height in the intraforaminal region and 8 mm bone height tops from the alveolar ridge to the upper side of the

mandibular canal. Four short implants (5 x 6 mm) were placed straight, using a guided surgery with a flapless approach in the intraforaminal region. The dental prosthesis was screwed onto implants immediately after surgery (immediate loading).

Results: the patient has not complained pain and swelling or adverse effects, resulting in a favorable clinical outcome. Post-surgery CBCT confirmed the accurate placement of all implants and the successful immediate loading of the prosthesis.

Conclusions: the procedure involves an unconventional all-on-four technique utilizing short and placed straight implants without prosthetic angulation to simplify both the surgical procedure and prosthetic rehabilitation.

GUIDED BONE REGENERATION OF A BONE DEFECT WITH SIMULTANEOUS IMPLANT PLACEMENT

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Aim: the aim of this study was to assess the efficacy of Guided Bone Regeneration (GBR) with non-resorbable titanium membrane in treating a bone defect with contextual implant placement in the treated site.

Methods: a 45-year-old non-smoking female patient with severe bone resorption in the edentulous site 3.1 underwent GBR with implant placement. A trapezoidal flap was raised using Modified Papilla Preservation Technique (MPPT), followed by implant fixture insertion. GBR was performed using a mixture of autologous and deproteinized bovine bone, along with a non-resorbable membrane stabilized with pins. Sutures were removed at 15 days, while the membrane and pins were re-

moved after 7 months. A provisional prosthesis was placed to ensure tissue conditioning.

Results: after 7 months, bone regeneration around the implant up to the implant platform was observed. At the 5-year follow-up, peri-implant health and medium-long-term clinical success were evident. Adequate interdental spaces facilitated good oral hygiene maintenance.

Conclusions: the 5-year implant success demonstrates GBR as a predictable technique for bone tissue augmentation. This approach increases further the indications for dental implant placement even in patients with minimal bone quantity.

OSTEONECROSIS OF THE JAW TREATED WITH LOW-LEVEL LASER THERAPY: CASE REPORT

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Aim: multiple protocols are available to prevent and treat ONJ. The proposed clinical case was treated with surgery, home Ozone medication and Low-Level Laser Therapy (LLLT).

Methods: a 72-year-old female patient affected by Systemic Lupus Erythematosus (SLE) under corticosteroid therapy has developed a condition of iatrogenic osteoporosis due to medication, for which she used Alendronate for 10 years, while now takes Prolia[®]. She presented to department for a limited area of bone exposure, next to teeth 2.5-2.6 on palatal side, persistent for more than 2 months. Diagnosis is idiopathic focal ONJ grade 1. The treatment plan proposed provides surgical excision of the lesion through curettage (performed by diamond nozzle ball and tungsten carbide ball respectively set on red and blue contra-angle) until obtain bleeding surface, Laser Therapy (LLLT, 3 cycles by 1 min each one), Home Ozone Therapy (HOT, OXORAL GEL, COL-LUTTO3, DENTO3 3 times/day for 14 days), check-up ap-

pointment every 2w, during which was performed LLLT and prescribed HOT. LLLT has been performed using WISER 3 Doctor Smile, with following setting for each wavelength: 450 nm Peak = 0.2W Medium Power (MP) = 0W Frequency (F) = 8.33KHz tOn = 20µs tOff = 100 µs - 635 nm OFF - 808nm Peak = 2.5W MP = 0.5W F = 10,00KHz tOn = 20µs tOff = 80 µs. At 4w has been performed again curettage. At 6w we observed immature gingival tissue. At 10w was performed another curettage. At 14w healing is in progress and is possible to note initial epithelialization.

Results: follow-up confirmed the validity of this therapeutic protocol, particularly underlining the value of LLLT in management of ONJ.

Conclusions: idiopathic ONJ are very uncommon, but its management is equal to other forms. Adopte a standardized and individualized therapeutic protocol, integrated with LLLT, allows to resolve the osteonecrosis.

HEALING OF A PERIPHERAL GIANT CELL GRANULOMA IN A YOUNG PATIENT: A SEVEN YEAR FOLLOW-UP

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Aim: to evaluate the healing of a Peripheral Giant Cell Granuloma (PGCG) in a twelve-year-old patient through a series of clinical and radiographic follow-up.

Methods: an evaluation of both clinical and radiographic parameters was performed, highlighting a gingival swelling localized in region 2.1. Cone-Beam Computed Tomography (CBCT) exam showed the resorption of the buccal bone cortex of affected tooth. The surgical procedure was performed in order to preserve anatomical and functional integrity of the affected dental and bone structures. A histological examination was scheduled resulting in the diagnosis of peripheral giant cell granuloma therefore a series of follow-up was programmed.

Results: periodical follow-up was scheduled at 7 days, 3

months, 1 year, 2 years, and 7 years, showing a progressive tissue healing with no sign of gingival recession and good periodontal health while Cone-Beam Computed Tomography highlighted the complete regeneration of the buccal bone on 2.1. at 2-years follow-up.

Conclusions: the management of PGCG requires a careful anamnesis and a proper surgical planning in order to obtain optimal aesthetic and functional results thus a conservative approach is needed to preserve both dental and periodontal structures. Furthermore, tissue healing should be carefully monitored through a series of follow-ups also to intercept any recurrences. In addition, following the removal of the lesion, we found a complete regeneration of the vestibular cortex of the involved tooth at two years of follow up.

CLEAR CELL ODONTOGENIC CARCINOMA: A CASE REPORT

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Aim: the present case report aims to add another case of the rare Odontogenic Clear Cell Carcinoma (CCOC) to the literature as well as guide histopathologists regarding the approach to be taken when encountering a clear cell-rich lesion.

Methods: we present the case of a 65-year-old woman with asymptomatic, painless swelling in the upper jaw on the palate, measuring 4 cm × 4 cm. Incisional biopsy with a 3 mm punch was performed, sub-sequently histopathologically diagnosed as a case of clear cell odontogenic carcinoma with the following description: fragment of mucosa with intra-stromal epithelial proliferation composed of small nests, partially confluent, at the center of which are cells with clear cytoplasm, and with the following immunophenotypic profile: cytokeratin pool (+); cytokeratin 5/6 (+); cytokeratin 7 (-); DOG-1 (-); p40 (+); p63 (+); S100 protein (-); SOX10 (-). No mitotic activity or

necrosis is detected in the examined sections, and the Ki67 proliferation index is less than 5%.

Radiographic findings consist of a poorly defined expansive radiolucency.

Results: given the aggressive nature of CCOC and the high rate of recurrence, surgical resection with wide clear margins is the gold standard treatment. The therapeutic approach of this case still has to be defined and discussed with a otolaryngology and maxillofacial surgery equipe

Conclusions: being locally aggressive, the reported data and understanding of this rare carcinoma needs to be strengthened by reporting new cases (there are only 104 cases reported in literature), and it also demands to be distinguished from other primary and metastatic clear cell tumors of the head-and-neck region.

CLINICAL, RADIOGRAPHIC AND HISTOLOGIC FEATURES OF FCOD: A CASE REPORT

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Aim: objective of this study is to present a case of FCOD in a 29-year-old African woman without comorbidities.

Methods: the patient accessed to the Dental Clinic of the University of Brescia for reported right neck pain diffused to the ear and hemimandibula. Objective examination revealed vestibular hard-elastic swelling at element 46, slightly painful at acupressure with concomitant laterocervical lymphadenopathy. The endoral periapical X-ray showed a radiolucent periapical area between 46 and 47 teeth, no root resorptions were evident. Both elements were responsive to vitality and percussion tests. The patient underwent CBCT, which showed three areas of resorption in elements 47-46, 41-42 and 31-32. Haematochemical examinations (parathormone dosage, Vit D, Calcium, Phosphate) were prescribed to rule

out manifestations of secondary osteodystrophy and hyperparathyroidism. A bone biopsy was performed for histological diagnosis. The first sampling (31-32 area), in the presence of intact cortical bone appeared non-significant. The second biopsy (41-42 area) resulted in a collection of particulate material of a case-like consistency. Analysis of the haematochemical, radiographic and histological findings led to the diagnosis of FCOD.

Conclusions: a second-level radiographic imaging is usually necessary to perform a correct FCOD diagnosis. Bone biopsy, however, could be decisive in the initial clinical stage. 12-months clinical and radiographic check-ups are recommended, associated with a regular and correct oral and professional hygiene maintenance.

A RARE CASE OF IMPACTED PREMOLAR ASSOCIATED TO DENTIGEROUS CYST AND PERIODONTAL LESION

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Aim: presenting a rare clinical case of an odontogenic cyst extending from 3.4 to 3.7, associated with an unerupted 3.5, and highlighting the treatment decision-making process. Characteristics, radiographic and histopathologic diagnoses, and surgical intervention of the cystic neof ormation were emphasized. The report also detailed the management of the impacted premolar near the alveolar nerve.

Methods: treatment involved enucleation of the cyst and extraction of the impacted tooth. Histological examination using hematoxylin and eosin staining determined the cyst's nature.

Results: the patient's postoperative recovery was uneventful, with complete remineralization after one year. Histological

findings revealed an inflammatory infiltrate, predominantly lymphocytes, with some plasma cells and Russell bodies, suggesting a periodontal cyst. Degenerated tissue with non-keratinized stratified cellular layers resembling cystic lesions was observed. The adjacent tooth showed no pathology or prior treatment.

Conclusions: this case highlights successful management of an impacted mandibular premolar with a dentigerous cyst and periodontal lesion, stressing accurate diagnosis and tailored treatment planning for complex dental cyst cases. A conservative approach is recommended to minimize surgical risks near critical anatomical structures.

SURGICAL REMOVAL OF PLEOMORPHIC ADENOMA OF THE PALATE

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Aim: the purpose of this case report was to show a surgical case of palate pleomorphic adenoma. Additionally, a literature review was conducted to deepen the diagnosis and treatment related to the treated lesion.

Methods: a 49-year-old patient presented to our observation at the Department of Dentistry, IRCCS San Raffaele Hospital, Milan, Italy, complaining of swelling in the 2nd quadrant. On physical examination, a tense-elastic, roundish lesion with well-defined margins was noted in the area of the left upper jaw. Considering the morphology and location, the diagnostic hypothesis is pleomorphic adenoma. To make a definitive diagnosis, it was decided to perform excisional biopsy while

carefully reviewing the residual bone cavity to decrease the likelihood of recurrence. The lesion presented a well-defined and partially encapsulated mass. The patient was placed on a follow-up protocol at 3, 6, and 12 months.

Results: biopsy analysis confirms the suspicion of pleomorphic adenoma. At 1 year of follow-up, excellent post-operative healing characterized by normotrophic tissues without recurrence is noted.

Conclusions: management of pleomorphic adenoma of minor salivary glands requires timely diagnosis and definitive treatment. Complete excision of the lesion is essential to minimize the risk of recurrence and malignant transformation.

RADICULAR CYSTS ENUCLEATION IN THE MANDIBLE: A CASE REPORT AND REVIEW OF THE LITERATURE

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Aim: the aim of this paper is to show how to enucleate a huge radicular cyst in contiguity to the mental foramen without affecting the vitality of the adjacent teeth and causing paresthesia or dysesthesia to the homolateral lower lip.

Methods: the patient came to San Raffaele Dental clinic reporting a vestibular swelling near tooth 4.6, affected by a destructive decay, and complaining of paraesthesia of the lip and chin. The radiological examination shows a radicular cyst located at the apex of tooth 4.6. Under local anesthesia, the roots of 4.6 were separated, by removing first the distal root, then the mesial. A full-thickness vestibular flap is performed to identify the mental foramen and protect it. A bony breach is created in order to enucleate carefully the osteolytic lesion, which is finally detached by trac-

tion using Klemmer forceps. The bone cavity is filled with fibrin sponges and sutured with horizontal mattress stitches in resorbable suture.

Results: in the majority of the clinical cases, these lesions expand into bone tissues, both medullary and cortical. In this case the lesion expanded mesially up to the mental foramen. Particular attention must be paid off in the surgical approach due to the risk of damaging the nerve fibers during dissection and separation.

Conclusions: a proper surgical approach performing odontotomy and rhizotomy associated with a vestibular bone access may allow the carefully removal of a radicular cyst without temporary or permanent damages to the mandibular inferior alveolar nerve.

POSTOPERATIVE EXPOSURE OF DERMAL MATRIX SEALED WITH TISSEEL IN PEDIATRIC PATIENT

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Aim: Acellular Dermal Matrix (ADM) is a biocompatible material introduced in periodontal and implant surgery for surgical reconstructive procedures. Bioactive properties promote natural revascularization and cell repopulation in tissues remodeling process. The aim of the poster is to evaluate postoperative ADM exposure after cyst enucleation in pediatric patient.

Methods: a 12 y.o. male was referred to our observation for malposition of upper incisors with history of trauma at 5 y.o. Radiographic examination showed dislocation of 1.2 and 1.1 dental elements with follicular cyst in right maxilla. Under general anesthesia, a mucoperiosteal flap was elevated from 1.6 to 2.1, enucleation and extraction of 1.2 involved were performed and histologic evaluation was required. To ensure space making effect acellular dermal matrix stabilized with

fibrin sealant was positioned on remaining bone with 1.1 dis-closed and sutured with 4/0 vycril. The 10 days follow-up revealed good healing of the bone lesion and displaced teeth. 3 months after surgery ADM was removed due partial exposure to avoid the spread of infection to the newly forming tissue.

Results: despite the exposure of the membrane, secondary intention healing with reformation of bone tissue awaiting the possibility of orthodontic traction of 1.1 was observed excluding the possibility of surgical return.

Conclusions: membrane exposure has a significant detrimental influence on healing but specially in pediatric patient, stabilization with fibrin sealant can avoid second surgical management, infection or mucosal inflammation.

THE USE OF PIEZOELECTIC LEVERS IN THE CONTEXT OF THIRD MOLAR EXTRACTION: TWO CASE STUDIES

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Aim: this study aims to assess the impact of piezoelectric levers usage in third molar extractions surgeries. Such implications have been demonstrated through the analysis of two different clinical cases.

Methods: two patients came to the clinic to have their wisdom teeth extracted, the 1.8-4.8 and the 2.8-3.8, respectively. Due to their proximity to important anatomical structures, the use of piezoelectric levers was preferred in order to be as little invasive as possible.

All extractions followed a standardized procedure: the incision and lift of a mucoperiosteal flap, the sindesmotomy through a Mectron (Mectron s.p.a., Carasco, Italy) chisel piezoelectric insert (EX1), the pericoronar osteotomy through micro-saw piezoelectric insert (OT7) and the clear exposure of the crown. While upper third molars were kept whole, inferior third molars

were then separated into their mesial and distal portions with a conical bur and a regular lever. The removal procedure was made through the use of short-lever piezoelectric insert (EXL-2) and then the socket was buried by suturing the flaps with single-stitch sutures.

Results: both patients needed to take pain medications just for the day following surgery and both reported minor discomforts. The sites healed up perfectly.

Conclusions: the increased visibility of the operative field ensured a much more precise ostectomy, which enabled the extraction of such buried teeth with minimal invasiveness. The described approach would help to preserve bone volume, granting a better possibility of the site being suitable for future implant rehabilitations.

MANAGEMENT OF PARTIALLY EDENTULOUS PATIENT THROUGH SINUS LIFT AND IMPLANT PLACEMENT

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Aim: the purpose of this report is to present the clinical case of a partially edentulous patient, treated through lateral sinus lift and implant placement.

Methods: a patient comes to the clinic to solve the partial edentulism of 2.6 and 2.7. CBCT shows insufficient bone height, so sinus lift is programmed. A crestal flap is performed and two vestibular bone windows are created with Esacrom (Esacrom SRL, Imola, Italy) wide diamond ball piezoelectric insert (ES015T). The two hatches are to avoid the complications of membrane disconnection, hence the presence of Underwood septum. Schneider's membrane is lifted through a round bent chisel insert (ES003AT) and an initial amount of heterologous grafting material (XenoGraft, Straumann Group, Basel, Switzerland) is placed. The sites are then prepared and two

3.75 x 13 mm implant fixtures (Win Implant, Oxy Implant, Biomec, Colico, Italy) are placed. More biomaterial is added, adequately compressed, covered with a resorbable membrane (Membrane Flex, Straumann Group, Basel, Switzerland) and then covered with the sutured flaps.

Results: postoperatively, an OPT is performed to assess proper insertion of the biomaterial and implants. The patient will be seen again in 8 months to evaluate the osseointegration of the implants and then proceed to prosthesis.

Conclusions: osteotomy maneuvers are performed through the use of piezoelectric technique in order to reduce patient postoperative discomfort. Additionally, at the operative level, the selective action of the piezoelectric handpiece allows for greater control and visibility during osteotomy window setup.

BONE REGENERATION USING CONCENTRATED GROWTH FACTOR (CGF) IN BONE DEFECT

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Aim: the aim of this clinical case report was to present an alternative method for bone regeneration following the excision of a cystic lesion in the upper jaw.

Methods: after performing a cystectomy, the resultant bone defect was treated by filling it with autologous clots rich in fibrin and Concentrated Growth Factors (CGF). The case involved a 45-year-old female patient diagnosed with a cystic lesion causing extensive bone damage to the vestibular and palatal walls between teeth 2.2 and 2.3. CGF was utilized to bridge the defect, fostering bone growth.

Results: a year post-operation, clinical and radiological follow-ups indicated that the tooth was symptom-free and the bone repair continued to progress.

Conclusions: the article discusses a novel approach to managing a two-wall defect in both the palatal and buccal bones following cyst removal, using CGF as an alternative to traditional bone graft materials. CGF fibrin shows promise as a bone repair material, potentially stimulating new bone formation in jaw deformities and enhancing bone tissue healing.

GIANT CELL LESIONS ASSOCIATED WITH DENTAL IMPLANTS: CASE REPORT AND LITERATURE REVIEW

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Aim: giant cell lesions of the jaws are characterized by the presence of large, locally aggressive multinucleated cells. The types which are most frequently associated with dental implants are: Peripheral Giant Cell Granuloma (PGCG) and Central Giant Cell Granuloma (CGCG). We report a case of giant cell lesion associated with implant insertion.

Methods: a 54-year-old female patient was referred to the Academic Dental Center of the University of Parma for evaluating an intraosseous, radiolucent lesion that had occurred following implant placement, 14 months earlier in position 3.5. The lesion was surgically removed after the elevation of a mucoperiosteal flap. A sample of the lesion was submitted for histological evaluation.

Results: the histological evaluation of the removed tissue re-

turned a diagnosis of CGCG. The patient healed without any recurrences, and it was possible to save the implant, which regained its osteointegration. At 8 months, the healing process of the bone gap could be appreciated on the panoramic radiograph.

Conclusions: according to a literature review conducted by the Parma research group, the only giant cell lesion associated with implants is PGCG, with no reported cases of CGCG arising following implant placement in the literature. These lesions are prevalent in middle-aged women, in the latero-posterior sectors, and seems to derive from irritative triggers, such as implant placement, occlusal trauma, poor oral hygiene and incongruous prosthesis. However, surgical removal of these lesions is essential, regardless of where they occur.

DIFFERENTIAL DIAGNOSIS OF AN OSTEOLYTIC MANDIBULAR LESION: A CASE REPORT

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Aim: the aim of this study is to report an emblematic case of a lesion of the mandibular ramus, that, by clinical radiographic characteristics, could refer to developmental cysts, such as keratocysts, or benign tumors of dental origin, such as ameloblastomas; all disproved by histological examination.

Methods: the 40-year-old patient came to our observation with a radiating pain in site 3.8 for approximately 6 months, with swelling and redness. The intraoral examination revealed an edematous and red mucosa, with purulent fluid draining from the affected area. The OPT and CBCT revealed a unilocular radiolucent lesion of approximately 4-5 cm which extended from the distal 3.7 to the mandibular condyle and involved the 3.8 impacted. Dental pulp vitality test of element 3.7 was negative. An incisional biopsy was planned.

Results: the histological examination of the incisional biopsy highlighted fragments of tissue covered by non-keratinized squamous epithelium, compatible with the diagnosis of a radicular inflammatory odontogenic cyst. For this reason, a conservative approach with enucleation of the lesion, extraction of the involved dental elements and revision of the residual bone cavity, was made.

Conclusions: this report demonstrates that for the osteolytic lesions of the mandible the differential diagnosis must be always considered. In addition, the removal of cystic lesions affecting large areas of the jaw bones is possible while fully respecting the anatomy and bone structure, following an accurate and precise diagnosis which must derive from a clinical, radiographical and histological examinations.

TREATMENT OF ORAL MUCOCELE BY COLD BLADE EXCISION: A CASE REPORT

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Aim: this case report aims to provide a comprehensive insight into the successful treatment of an oral mucocele using cold blade excision in a 19-year-old patient.

Mucoceles are benign lesions that arise from the accumulation of liquid or mucoid material due to trauma from lip biting or disruption of minor salivary gland ducts. They commonly manifest on the lower lip and present as asymptomatic pink vesicles with soft consistency and absence of inflammatory signs.

Methods: the mucocele, measuring 10 mm in diameter, was identified on the internal aspect of the lower lip. After local anesthesia with vasoconstrictor 1:100.000, an accurate circular incision was made around the lesion using a No. 15 blade. Traction was applied to isolate the cleavage plane, allowing for meticulous excision until complete separation from the muco-

sa was achieved. The underlying tissue was similarly treated, followed by closure with silk sutures. Biopsy samples were collected and subjected to histological analysis after preservation in formalin.

Results: histological examination confirmed the diagnosis of mucocele, with the second fragment revealing glandular stroma interspersed with inflammatory tissue. At the 7th day control an optimal healing was observed; moreover, after three months, there was no sign of recurrence.

Conclusions: cold blade excision emerges as a viable treatment option for mucocele, despite the risk of recurrence. Our case underscores the effectiveness of this approach, with no recurrence observed during subsequent follow-up assessments, indicating a favorable prognosis.

MANAGEMENT OF A DENOSUMAB ONJ AFTER EXTRACTION IN AN OSTEOPOROTIC PATIENT: A CASE REPORT

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Aim: to describe the management of an Osteonecrosis of the Jaws (ONJ) in an osteoporotic patient.

Methods: an 81-year-old female patient presented with pain in an edentulous area of the posterior mandible. The patient reported the extraction of a third molar (#4.8) 11 months before our examination. After clinical and radiographic examination, a bone exposure and a non-healed post-extraction socket was noticed. Anamnesis reported a history of osteoporosis treated for over 5 years with Prolia® (Denosumab 60 mg) injections twice-year. The last assumption was 2 months before. A 4-month wait and see strategy was decided.

One month before the end of this awaiting period, the patient presented with an abscess. CT scan was prescribed. Focal bone marrow sclerosis and a sequestration limited to the alveo-

lar bone were noticed. Focal MRONJ stage 1b was diagnosed.

Results: surgical removal of the bone sequestration was performed, and systemic antibiotics were prescribed (Amoxicillin and Metronidazole) for 14 days. A histological analysis was conducted; the results were consistent with necrotic bone colonized by *Actinomyces spp.* No complications were observed 1 month after the surgery. The endocrinologist was consulted to approve the resumption date of Prolia® at a period of 3 weeks after the extraction.

Conclusions: although Prolia® related ONJ is described as a rare adverse drug reaction, setting a correct time frame for surgical interventions seems to be mandatory. A 6-month waiting period from the last administration might be considered a valid therapeutic option.

AUTOTRANSPLANTATION OF IMPACTED CANINES: A RETROSPECTIVE STUDY

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Aim: in dentistry, the impaction of maxillary and mandibular canines is a common clinical scenario that requires an interdisciplinary approach for diagnosis, management and optimal treatment. The aim of this study is to demonstrate that reduced extraction and extra-alveolar times increase the success rate of autotransplanted dental elements.

Methods: the present retrospective study evaluates 20 impacted canines that were extracted and subsequently autotransplanted in their original site; the study relates the surgical outcome in terms of success, loss or survival, with the time required for explant and extra-alveolar management of the ca-

nines. Patients' follow up lasted from a minimum of 1 year to a maximum of 12 years.

Results: the illustrative clinical cases reported in this retrospective study confirm the relationship between the success of dental autotransplantation and reduced management timing of the impacted canine, both in terms of extraction and extra-alveolar times.

Conclusions: dental autotransplantation represents an alternative surgical technique to surgical-orthodontic treatment which can often be too complex due to the position of the impacted dental element, or excessively long, and therefore hardly accepted by the patient.

DEEP LEARNING APPROACH IN LOWER THIRD MOLAR IDENTIFICATION, SEGMENTATION, AND 3D ANALYSIS

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Aim: this study aimed to develop a deep learning algorithm to automatically identify and segment the lower third molar (M3M). Additionally, the objective was to train the AI to classify M3M surgical extraction difficulty based on its relationship with the mandibular canal.

Methods: a cohort study was designed including CBCT with at least one M3M. A Faster Rcn architecture was trained on 2D Maximum Intensity Projection images (sagittal and axial views), obtained from initial CBCT, to detect M3M. A 3D U-Net model, trained on manually defined contours, was employed for the automatic M3M segmentation. Two expert operators identified the M3M's relationship with the mandibular canal and, to maximize the number of images to show to the AI algorithm, specific data augmentation techniques were applied. A custom 3D model was then trained to predict M3M surgical complexity. The algorithm's performance was evaluated using a k-fold approach with 5

fold, randomly varying the patients used in the training and testing phases.

Results: a total of 537 CT scans were included in the study, and 3104 sample units were obtained for AI analysis. Spatial M3M detection was achieved with a Mean Average Precision of 98.9% and 100%, respectively in sagittal and axial view. Segmentation accuracy was very high (Dice Similarity Index equal to 0.91). Preliminary results showed an accuracy of 0.71 ± 0.095 in identifying the relationship between the M3M and the mandibular canal.

Conclusions: the deep learning algorithm exhibited excellent accuracy in M3M identification and segmentation and promising preliminary results for surgical complexity assessment. The use of AI could overcome the limitations of manual interpretation, offering a robust and efficient solution for dental professionals. Further studies are required to optimize the model's performance by incorporating new evaluation parameters.

CYSTECTOMY SURGERY: RETROSPECTIVE EPIDEMIOLOGICAL STUDY, A TEN-YEAR EXPERIENCE

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Aim: the aim of this study is to analyze the epidemiological features and determine the frequency of different types of cyst of the jaw diagnosed at the Maxillofacial and Odontostomatology Clinic of the Maggiore Hospital in Trieste (Italy).

Methods: a retrospective observational study was performed on 238 patients, 117 treated as out-patients and 121 that underwent surgery in the operating room.

Results: the mean major diameter of the lesions removed under local anesthesia was significantly lower than those removed under general anesthesia (14.3 ± 5.01 mm and 23.7 ± 11.3 mm, respectively, $p < 0.05$). Complications occurred in 19,7% of all cases. Paresthesia of the third branch of the trigeminal nerve

was the most common complication observed, more than a half of those cases show a complete remission in the first year of follow-up. The positive association was underscored with the simultaneous extraction of one or more impacted teeth.

Conclusions: the incidence of this pathologic condition is probably underestimated because of its scarce symptomatology; however, in the advanced stages cysts could become a clinical issue: great bone resorption, infection process, and compression of nerve endings, just to mention a few signs and symptoms. It could represent a tough problem, it means that a second surgery must be performed, with a high cost for patient and for the clinician.

ASSESSMENT OF EXPERTISE IN REDUCTION OF ODONTOGENIC CYST UNDERGOING MARSUPIALIZATION

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The aim of this study is to evaluate intra- and inter-observer agreement and reproducibility of CBCT segmentation related to marsupialized cysts, processed by three operators with different expertise, using the open-source software 3D Slicer with the GrowCut algorithm. Pre- and post-operative CBCT scans of five patients undergoing marsupialization of large odontogenic cysts ($>2000\text{mm}^3$) were segmented, obtaining volume in mm^3 . Segmentation was performed by three operators with different expertise, blinded and independent: maxillofacial surgeon, dentist in specialized training in the last year of oral surgery, and a sixth-year student in Dentistry and Dental Prosthesis. Each evaluator performed two evaluations of each CBCT scan one week apart.

This study included five patients with the following characteristics: male sex (100%); mean age 36.6 ± 23.1 (16-76); site of the cystic lesion in the mandibular body (100%); three dentigerous cysts (DC) (60%), one radicular cyst (RC) (20%), and one keratocyst (20%) were included; one cyst with four walls (20%), three cysts with five walls (60%), and one cyst with six walls (20%) were included. In the study, good intra-rater and inter-rater agreement and reproducibility were demonstrated, with an ICC >0.8 for all comparisons between raters.

Therefore, the 3D Slicer software used for volumetric segmentation in this thesis study proved to be clinically reliable in oro-maxillofacial surgery regarding the treatment of jawbone odontogenic lesions.

MAXILLARY DIFFERENCES IN BONE REGENERATION WITH TOOTH AS GRAFT: A RETROSPECTIVE STUDY

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Aim: the study evaluated histological and clinical differences in alveolar ridge preservation procedures between the maxilla and mandible using demineralized dentin treated with Tooth Transformer[®].

Methods: the study enrolled 178 healthy patients with sockets lacking buccal or palatal bone walls. The patients were divided into Group A (99 mandibular samples) and Group B (108 maxillary samples). After the extraction the teeth were prepared with the TT[®], and then the dentin graft was placed into the sockets. After approximately 5 months, single bone biopsies were conducted for histological and histomorphometry analysis.

Results: Histomorphometric analysis revealed that Group A had a slightly higher total bone volume ($48.96\% \pm 14.35$) compared to Group B ($43.83\% \pm 12.73$). Moreover, Group A exhib-

ited a higher proportion of vital new bone ($38.35\% \pm 20.09$) compared to Group B ($33.04\% \pm 17.1$). Both groups showed a small percentage of residual graft dentin material: Group A with $9.24\% (\pm 10.00)$ and Group B with $8.93\% (\pm 10.21)$.

Conclusions: these results emphasize the efficacy of alveolar ridge preservation procedures using demineralized dentin treated with Tooth Transformer[®] in facilitating favorable healing outcomes and maintaining bone volume and architecture. A 5% variation between the maxilla and mandible highlights genuine distinctions in their natural bone structures. This indicates that bone regeneration post-tooth extraction adheres to an anatomical-functional pattern unique to each area, thereby aiding in maintaining the form and function of the surrounding bone tissue.

RETROSPECTIVE ANALYSIS OF COMPLICATIONS IN 630 IMPACTED THIRD MOLAR AVULSION

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Aim: analyze whether the careful analysis of all parameters following the surgical extraction of the lower third molars can reduce the risk of both intra- and post-operative complications.

Methods: a sample of 380 patients (aged 14-30 years) had indications for the extraction impacted lower third molar due to different diagnoses, for a 630 extractions. All surgeries were performed by the same surgeon and the same surgical technique collecting the following: patients' age; extracted tooth; pathological history; indication for extraction; antibiotic prophylaxis; duration of the surgery; anesthesia; radiographic examinations; relationship to the inferior alveolar nerve; Pell and Gregory Classification; flap design; whether or not the osteotomy and odontotomy procedures and the instruments used;

type of suture; intraoperative complications; post-operative complications; administration of cortisone.

Results and conclusions: the application of this standardized surgical protocol has shown significant results in reducing intra and post-operative complications. As for significant intra-operative complications, there was only one case of major bleeding during surgery. As far as post-operative complications are concerned, three different clinical scenarios were observed: late abscess (0.63%), dehiscence of the flap (0.48%) and infection (0.16%). No permanent sensory changes to the nerve structures were reported. The best age to extract wisdom teeth seems to be 16-26 years due to the consistent reduction of complication and reduction of the surgery 22.36 minutes.

ANALYSIS OF ODONTOMAS AS A RISK FEATURE OF TOOTH IMPACTION: A CLINICAL STUDY

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Aim: this study aimed to assess the prevalence, location, and relationship between odontoma presence and delayed or impacted teeth.

Methods: employing a retrospective study design, demographic and clinical data of patients presenting with odontomas were collected. The impact of active therapy on dentition and the management of impacted teeth were analyzed. 36 patients (mean age 14.2 years) with 23 complex and 13 compound odontomas were included.

Results: initial symptoms included delayed eruption of permanent teeth (n = 19), pain (n = 4), swellings (n = 4), and asymptomatic cases (n = 9); incidental discovery occurred in 29 pa-

tients, all via panoramic radiographs. The mandible/maxilla ratio was approximately 2:1. 24 out of 36 odontomas were close to at least one tooth (n = 19 involving incisors). 11 teeth were extracted (7 complex, 4 compound), while 25 displaced and retained teeth were not extracted. Among these, 22 were aligned through orthodontic-surgical intervention, and 3 teeth erupted spontaneously post-surgery during follow-up.

Conclusions: odontoma detection often occurs incidentally through routine radiographic examination, emphasizing the importance of regular radiographic analysis. Early diagnosis of odontomas in primary dentition is vital to prevent future complications such as tooth impaction or eruption failure.

THREE-DIMENSIONAL BONE VOLUME CHANGES AFTER SINUS AUGMENTATION: A TOMOGRAPHY STUDY

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Aim: the aim of this study was to evaluate the differences of maxillary sinus graft after the augmentation procedure and the long-term graft volumes by cone beam computed tomography (CBCT).

Methods: a total of 32 sinuses from 16 subjects were evaluated. The patients were subjected to a bilateral sinus augmentation procedure using with porcine cortical bone as graft. The CBCT scans were obtained at the baseline and 6 months after surgery.

Results: no significant correlation between initial sinus diameters and graft at the follow up. The anterior recess was fre-

quently filled to roughly 15% of the grafts total volume, the lowest of the primary recesses.

Conclusions: the study findings reported that no correlation between initial sinus dimensions and long-term graft dimensional changes was reported. Moreover, the sinus anterior recess is generally the least filled among the main recesses. The clinical difficulties accessing the anterior recess may contribute the underfilling. This outcomes support the importance of accurate anatomical assessment and surgical technique in sinus augmentation procedures.

TILTED OSSEOINTEGRATED IMPLANTS AND BONE RESORPTION: A RADIOGRAPHIC ASSESSMENT

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Aim: the purpose of this study was to evaluate, at a distance of at least 1 year from insertion, the degree of vertical peri-implant resorption around implants inserted with an inclination increased more than 10°.

Methods: for the study, a sample of 47 patients with a total of 115 implants was selected. We excluded subjects whose conditions could compromise treatment outcomes. Orthopantomography of dental arches was conducted using Orthophos XG 3D Sirona at two time points: T₀ (end of definitive prosthesis insertion) and T₁ (at least 1 year after T₀) with individualized positioning. Implants with equal to or greater than 10° inclination were divided into three

groups; those with 0-10° inclination were used as controls samples.

Results: in group I, a statistically significant difference is observed between T₀ and T₁ in at least on one side (especially on the distal side). Groups II and III show a statistically significant discrepancy in bone resorption degree, where the mesial side differs from the distal side. Group IV reveals a statistically significant difference on both sides. The survival rate of implants at 1 year was 100% in all cases.

Conclusions: an increase in implant inclination may result in accelerated bone resorption, either mesially or distally, and this is a factor that surgeons must consider.

ASSESSMENT OF IMPLANTOPLASTY EFFICACY FOR PERI-IMPLANTITIS: A RETROSPECTIVE STUDY

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Aim: this study aims to evaluate implantoplasty effectiveness for peri-implantitis, assessing: bone loss; periodontal history; tobacco use; compliance; prosthesis type; masticatory load; and absence of narrow diameter fractures.

Methods: this retrospective study examined 75 patients, of which 113 were affected by peri-implantitis and treated with implantoplasty. Those identified as pathological were initially treated with non-surgical therapy, consequently, in the absence of clinical resolution, they underwent surgical procedure. This involved a full-thickness flap to expose the apical osseous margin to the defect and the implant body. So the latter was treated with implantoplasty, modifying its microstructure and then, submerged again by soft tissues. At the end of the procedure, a postoperative control X-ray was performed, and follow-up visits were scheduled every 6 months, for a

maximum of 24 months. Then, a statistical analysis was conducted on possible factors influencing the success of the procedure.

Results: during the follow-up, 89 implants out of 113 didn't exhibit any significant bone loss, and only 9 failed, all presenting an implant exposure greater than 50%. The statistical analysis showed that none of the parameters affected the outcome of implantoplasty; the only factor that seems to contribute to success is the choice of screw-retained prosthesis, as opposed to cemented ones.

Conclusions: implantoplasty appears to be a safe method, as it did not lead to the fracture of any implant, did not cause adverse biological reactions or bone necrosis. In most cases there was a stabilization of peri-implant disease, except for implants with reabsorption exceeding 50% of the implant length.

ANALYSIS OF ORAL AND SYSTEMIC COMPLICATIONS FOLLOWING BONE MARROW TRANSPLANTATION

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Aim: retrospective assessment of the systemic and oral health status, occurrence of systemic and local complications, psychological and emotional impact of patients undergoing stem cell transplantation (HSCT) after more than twelve months.

Methods: we examined 80 patients who were divided in two groups. We compared the patients who were treated according to the clinical protocol of infectious foci removal (GROUP A) prior to HSCT and patients in whom it was not possible to complete the planned protocol (GROUP B); we proceeded with a dental examination of the oral cavity, comparison of pre- and post-transplantation orthopantomography (OPT). Oncohaematological specialist medical reports were examined for evaluation of post-transplantation complications related to cardiovascular, pulmonary and neurological system. Pathologies such as

Graft versus Host Disease, dysgeusia, infectious complications, disease relapse, secondary carcinoma or other disorders linked to the oral cavity were taken in considerations during the anamnestic report. And finally the patients were given a questionnaire in order to assess their quality of life (OHIP-14).

Results: comparing the impact of transplantation on patients' daily lives and the complications occurred afterwards, there is no statistically significant difference in the two groups except for neurological disorders (they were more frequently detected in group A).

Conclusions: since nowadays there are no specific clinical guidelines, we think that it's necessary to conduct more studies in order to find which proper preventive treatment should be applied in patients prior to HSCT.

NON-RESORBABLE PTFE MEMBRANES IN GBR: AN UP TO 10-YEAR RETROSPECTIVE STUDY ON 104 PATIENTS

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Aim: this study aimed to evaluate the clinical and radiographic outcomes of Guided Bone Regeneration (GBR) procedures with non-resorbable PTFE membranes in the rehabilitation of partially edentulous atrophic arches, with a follow-up period of up to 10-years.

Methods: a retrospective study was conducted on patients undergoing GBR with non-resorbable PTFE membranes for the treatment of bone atrophy, with a minimum follow-up of 5 years. Patients were classified according to age, sex, smoking status. Outcome measures included biologic complications, implant and prosthetic failures, height and width of bone augmentation, and peri-implant Marginal Bone Loss (MBL).

Results: the study included 104 patients with a mean follow-up of 8.39±1.65 years. Six patients experienced implant

failure (5.77%), while complications were observed in 26 patients (25%). Smoking habit and height augmentation greater than 6 mm were associated with more complications ($p = 0.004$; $p < 0.001$). The mean MBL per year of the implants was 0.21 ± 0.14 mm. A mean positive correlation was found between bone height increase and annual MBL ($r = 0.44$; $p = 0.001$). Additionally, older patients and heavy smokers exhibited higher MBL/year ($p < 0.05$). Furthermore, patients with more hygienic sessions showed lower MBL/year ($p = 0.002$).

Conclusions: in summary, given the retrospective nature and data variability of the study, cautious interpretation is crucial despite the promising results of non-resorbable PTFE membranes in Guided Bone Regeneration for atrophic arches.

PRIMORDIAL ODONTOGENIC TUMOR: LITERATURE REVIEW AND RETROSPECTIVE STUDY

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Aim: Primordial Odontogenic Tumor (POT) is an uncommon odontogenic tumor included in the 2017 WHO classification of Head and Neck Tumors. This study aims are to conduct a literature review on POT and to perform a retrospective analysis of 143 cases of odontogenic tumors treated at the Maxillo-facial Surgery and Odontostomatology Units of the Academic hospital of Parma from 1998 to 2018.

Methods: from 143 initial cases of odontogenic tumors, 43 had possibly useful data on epidemiological, clinical, histopathological, and diagnostic aspects to identify POT in previously diagnosed odontogenic tumors.

Results: the patient cohort considered included 28 males and 15 females, with an average age of 44.7 years, and predominantly exhibited mandibular lesions. Review of the pathologi-

cal specimens revealed some controversies in the initial diagnosis, but no POT were identified. There are 27 cases of POT documented in the literature, evenly distributed between sexes, with a mean age of 12.5 years. Radiographically, POT typically manifests as a radiolucent lesion with distinct margins and related to an impacted tooth. Macroscopically, it presents as a solid, shiny, white lesion with well-defined borders, while, microscopically, it is characterized by fibromyxoid mesenchymal tissue and columnar or cuboidal epithelium.

Conclusions: POT remains a complex odontogenic tumor to identify. This preliminary study does not provide enough data to identify or exclude with certainty new cases of POT. Further studies, including immunohistochemical analysis, are needed for better completeness.

DIFFERENCES IN MRONJ SEVERITY BETWEEN CANCER AND NON-CANCER PATIENTS

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Aim: severe MRONJ has significant complications such as pathological fractures, extra-oral fistulas, osteolysis extending to the mandibular border or sinus floor.

The aim of this study is to retrospectively describe the severity of MRONJ in cancer and non-cancer patients, assessing if any notable differences are present between the two groups.

Methods: in 21 years (2004 to 2024) at the Odontostomatology Units of Parma we identified 584 MRONJ patients, 452 oncologic and 132 non-oncologic, classified using the staging system of SICMF-SIPMO.

Results: ninety-nine patients (17%) with severe MRONJ were identified, 77 oncologic and 22 non-oncologic. In both groups, females were more affected, and smoking was not a risk factor. In both groups bisphosphonates were used more frequently than Non-Bisphosphonate (NBF), particularly zoledronate

(88%) in oncology and alendronate (71%) in non-oncology. Denosumab was the most used NBF (64%). In cancer patients, dental extraction was the most common trigger (42%) followed by spontaneous onset (32%). In non-cancer patients, 38% of MRONJ followed dental extraction, 38% had a spontaneous onset and the remaining 24% were due to implant positioning and periodontitis. In both groups the maxillary was most affected (60%).

Conclusions: the data indicate an equal risk (17%) of developing stage III among cancer and non-cancer patients. This suggests MRONJ severity may not be significantly influenced by oncological status.

Prevention and early diagnosis remain crucial, as management of severe MRONJ is complex due to non-conservative treatments and patients' conditions.

THE HEALING RATE OF POST-EXTRACTION SITES AND PLATELETS COUNT IN THE BLOOD

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Aim: in daily surgical practice, the dentist deals with various types of oral surgery. At the first visit, the patient fills out a questionnaire about their state of health. If the questionnaire does not reveal any particular hematological problems, no special tests are usually required to determine the platelet count. The aim of this prospective study was to evaluate the healing process of patients and its correlation with platelet levels before surgery.

Methods: a total of 50 patients were included in whom blood chemistry tests were performed with special attention to the platelet count and before their mandibular eights were extracted. The type of healing (EHI) and pain on the second

day (VAS) were assessed using methods validated in the literature.

Results: after the EHI and VAS scores were noted in the medical records, envelopes containing the platelet scores of the previously requested blood samples, which were not read at the time of observation, were opened. An increase in EHI scores and a decrease in VAS scores was observed that were statistically significantly correlated with increasing platelet scores.

Conclusions: these results suggest that the dentist should request preoperative blood test, especially if the patient is to undergo a particularly demanding oral surgical procedure, such as implants, guided bone regeneration or extractions.

SURGICAL MANAGEMENT OF MRONJ USING HUMAN AMNIOTIC MEMBRANE (HAM)

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Aim: human Amniotic Membrane (hAM) has various beneficial effects such as low immunogenicity, anti-inflammatory, antimicrobial and analgesic properties. It is also a source of stem cells and growth factors that promote tissue regeneration. At the Oral Surgery Unit of the C.I.R. Dental School of Turin, we are currently conducting a pilot study to test the use of cryopreserved hAM for patients with stage 2 (SIPMO-SICMF) MRONJ.

Methods: 9 patients diagnosed with MRONJ received surgical treatment between November 2023 and January 2024. The patients underwent sequestrectomy surgery, carrying out osteoplasty of the necrotic bone with piezosurgery and positioning the hAM on the treated bone. Then the patients were enrolled in a regular follow-up schedule, which included visits at 7, 14 days, 1, 2 and 6 months post-intervention. At 6 months the patients underwent a new x-ray. The primary endpoint was

evaluated through a clinical examination of bone re-exposure and the extent of wound healing at each follow-up visit. The secondary endpoints were presence of signs of inflammation and infection.

Results: there were 2 male and 7 female patients with an average age of 72.66. 6 patients were treated with Denosumab and 3 with bisphosphonates. After 14 days, 4 patients experienced extensive hematoma. At the 2-month follow-up, 2 patients showed bone re-exposure of the treated site which persisted in 1 patient at the 6-month follow-up.

Conclusions: although there's not enough clinical evidence to support the superiority of hAM over traditional MRONJ surgery, it has shown potential as a viable alternative. Our pilot study, despite having a limited number of patients, provides preliminary data that is encouraging regarding the use of hAM in the surgical treatment of MRONJ.

MICROBIOLOGICAL COMPARISON OF SLOW AND RAPID RESORPTION SUTURES: PRELIMINARY RESULTS

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Aim: the aim of this study was to compare the retention of plaque in two types of Polylactic-Glycolic Acid (PGLA) sutures with different resorption rates. One of the two (“fast”) is irradiated in order to make its resorption faster. The microbial colonization of the sutures was investigated 7 days after the surgery, once they had been removed from the patient’s mouth.

Methods: 26 patients that needed extraction of a mandibular third molar were included. Half of them received PGLA sutures (Polysorb™) while the other half fast absorbable PGLA sutures (Velosorb Fast™). After a healing period of one week, the sutures were cut with sterile instruments and removed. Sutures

were then directly put in Eppendorf tubes containing sterile BHI and sent to the laboratory to analyze the microbial colonization.

Results: preliminary microbiological results suggest that there is no difference between PGLA normal and fast resorption sutures. The patient’s choice of whether to use Chlorhexidine-based mouth washes didn’t seem to influence the microbiological contamination of the sutures.

Conclusions: it can be concluded that both sutures are very suitable in oral surgery. The use of fast-absorbable sutures could be further implemented to avoid patients recall for suture removal after simple single tooth extractions.

EVALUATION OF DISTAL PERIODONTAL BONE DEFECTS ASSOCIATED WITH LOWER THIRD MOLAR EXTRACTION

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Aim: this study focuses on the periodontal evaluation of the second molar in relation to the extraction of the lower third molar. Risk factors influencing periodontal tissue healing include patient age, impaction type, surgical techniques, and pre-operative periodontal status. Longitudinal studies suggest that younger patients benefit more from surgical extraction, exhibiting better bone healing and reduced intraoperative risks.

The present study aims to evaluate changes in the periodontal status of the lower second molar at least 12 months post-surgery following lower third molar extraction.

Methods: a sample of 53 patients, meeting inclusion criteria, underwent surgical extraction, and a comprehensive analysis was performed through clinical and radiographic assess-

ments. The study considers parameters such as impaction type, angulation, and pre-operative conditions.

Results: indicate a trend toward less healing in horizontal third molars, although statistical significance is limited by the sample size. The study aligns with existing literature, emphasizing the importance of early extraction in young individuals to improve periodontal outcomes.

Conclusions: this pilot study sheds light on the periodontal consequences of lower third molar extraction, emphasizing the potential benefits of early intervention in specific impaction types. Future research with larger sample sizes and in-depth complication analysis could provide valuable insights into optimizing patient outcomes following third molar surgery.

CUSTOMIZED TI-MESH FOR GBR: A MORPHOLOGICAL, CHEMICAL, AND PHYSICAL OBSERVATIONAL STUDY

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Aim: the present study aims at evaluating the morphological, chemical, and physical features of differently treated customized titanium meshes for guided bone regeneration procedures.

Methods: different titanium meshes were produced to fit the same alveolar ridge defect: Group A (electropolished external surface and sandblasted internal surface), Group B (electropolished external surface, sandblasted internal surface and anodization) and Group C (electropolished external and internal surfaces). The meshes within the groups were conditioned with UV photofunctionalization, alkaline bath or nothing. Scanning Electron Microscopy (SEM) was used to evaluate the meshes' micro-morphology, while Energy Dispersive X-ray Spectroscopy (EDS) was performed to assess their chemical composition. Wettability was measured using a customized contact angle measurement setup.

Results: nine customized Ti-meshes were analyzed. The

whole sample consisted of smooth external surfaces, while internal surfaces showed different characteristics. Group A and B meshes revealed irregular sharp projections and depressions, while Group C meshes showed some smooth areas alternated with rough ones. Chemical components such as Ti, Al and V were detectable in all the samples. In rough surfaces, Si, Ni, and other elements were found, due to the sandblasting treatment. Overall, the conditioning processes allowed to obtain lower contact angles than those of not conditioned meshes. The alkaline bath determined lower contact angles than UV photofunctionalization ($p < 0.001$), and no treatment ($p < 0.001$). UV photofunctionalized meshes were more hydrophilic when compared to untreated meshes ($p = 0.02$).

Conclusions: electropolishing guarantees smooth surfaces, without impurities. The alkaline bath, followed by the UV photofunctionalization, improved wettability.

LOWER THIRD MOLAR EXTRACTIVE SURGERY: A PRE-OPERATIVE DIFFICULTY ASSESMENT SCALE

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Aim: objective of this study is to propose a new scale for pre-operative difficulty assessment of lower third molar extraction.

Methods: in order to evaluate extraction difficulty, a literature based multi-parameters form was designed. These parameters are distinguished in tooth and patient related difficulty factors. This form can be completed after a second level imaging analysis only and offers a numeric value ranging from 4 to 64 points. In this study 68 patients were enrolled, for a total of 79 lower third molars extracted. These patients were referred to the Oral Surgery Department of University of Brescia from November 2022 to April 2024 and the form was filled in the pre-surgical phase for every tooth extracted.

Results: from collected data analysis, extraction difficulty re-

sulted variable, ranging from 11 to 46 points with an average of 21 points. Data shows that out of a total of 79 third molars extracted, 71.3% of surgeries was completed by initially designated operator, regardless difficulty grade resulted. On the other hand in 28.7% of remaining cases, the selected first operator failed to complete surgical intervention, in agreement with difficulty assessment scale, which required a more experienced operator.

Conclusions: proposed assessment scale can be regarded as a reliable tool in terms of pre-operative difficulty evaluation in lower third molar extractive surgery. Since sample size is the principal limitation of the present study, further researches are needed in order to evaluate each chosen criteria weight and thus to correlate them with each others.

CUSTOM SUBPERIOSTEAL IMPLANTS IN SEVERE MAXILLARY ATROPHY REHABILITATION: DIGITAL WORKFLOW

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Aim: in the last few years, thanks to the CAD/CAM technologies improvement, subperiosteal implants have been brought back to light as an alternative to more invasive techniques to perform the rehabilitation of patients with severe atrophy of the maxilla.

The aim of our study is to contribute to standardize the approach to the atrophic maxilla through subperiosteal implants, by defining a digital workflow from diagnosis to therapy and to evaluate the implant survival and complication rate.

Methods: the workflow starts with the acquisition of the volumetric data of the maxillary anatomy and the scans of the entire dental arches. Then, the customized titanium implant is designed directly on the three-dimensional model of the maxilla involved and manufactured through additive techniques, placing the osteosynthesis screws, after an anatomical evaluation, in the areas of greatest resistance and thickness and that do not undergo bone resorption.

A total of 4 patients with severe maxillary atrophy were included in this study and treated with subperiosteal implants with a one year follow up.

Results: the proposed digital workflow showed, in each case, a great precision and reproducibility of the surgery passages and a perfect implant fitting. No symptoms of infection were described.

Conclusions: despite our results are preliminary, they allow considering subperiosteal implant as a valid alternative to other more invasive techniques, such as bone regeneration or zygomatic implants, in patients with severe maxillary atrophy on whom traditional implants cannot be placed, avoiding the involvement of the maxillary sinus. and reducing the risk of sinusitis.

Modern additively manufactured subperiosteal implants presented a perfect fitting, a good survival in the short-time with a low number of soft-tissue related complications.

OBSERVATIONAL STUDY ON DELAYED ONSET INFECTIONS AFTER THIRD MANDIBULAR MOLAR EXTRACTION

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Aim: the surgical extraction of the third mandibular molar is one of the most frequently performed procedures in oral surgery. Like all surgical procedures, this one is not exempted from complications, which may occur during the surgery, days and even months later.

The aim of this study is to assess the incidence of postoperative complications, particularly the Delayed Onset Infections (DOI) that can occur months after third mandibular molar extraction.

Methods: an observational study was conducted on 104 patients undergoing third mandibular molar extraction between June 2022 and February 2024, gathering in total 119 extractions. Data were collected the day of the surgery (T₀) and seven days after during the suture removal (T₁); the patients

were then contacted by phone 30 days after the surgery (T₂) to assess their healing process. The day of the surgery the patients were given a survey with a Visual Analogue Scale (VAS) to inquire the post operative pain and drug therapy.

Results: a single case of delayed onset infection was recorded (1.04% of patients). Among the other complications, the most frequent were: wound dehiscence (15.5%), swelling (18%), trismus (9.5%), alveolitis (6%), neurosensory alteration of the inferior alveolar and lingual nerve (1.2%). The dose of painkillers was raised in response to a higher postoperative pain.

Conclusions: the results of this study were consistent with those found in others research on the same topic. Postoperative complications are not common, but the patient must be always informed before surgery.

THIRD MOLAR EXTRACTION HEALING FOLLOWING ANTIMICROBIAL PHOTODYNAMIC THERAPY (APDT)

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Aim: the aim of the study was to evaluate the efficacy of APDT on healing after surgical removal of inferior third molars.

Methods: 65 patients, aged 14-39 years, were assigned to test or control group. The test group received a photoactive substance in post-extractive sites before suturing. After 3 minutes, the photosensitizer was washed out and the laser light (20 mW) was applied for 60 seconds. Evaluation of Probing Pocket Depth (PPD), Bleeding on Probing (BOP), Plaque Index (PI), gingival Recession (REC) and Clinical Attachment Loss (CAL) was performed for both groups at second adjacent molar site before surgery (T_0), after 14 days (T_{14D}) and after 3 months (T_3M). Moreover swelling, VAS index, quantity of painkillers taken, alveolar probing and Landy's healing index were recorded at

T_{14D} . Bone healing was assessed with intraoral X-ray at T_3M .

Results: 32 and 33 patients were respectively assigned to test or control group. Follow up at T_{14D} was performed for all cases except for one drop-out, while follow up at T_3M is still in progress. In the evaluation of buccal side, except for REC, significant increases ($p < 0.05$) between T_0 and T_{14D} were found for all periodontal indexes. PI significantly decreased in control group compared to test group ($p = 0.001$); CAL significantly decreased in test group compared to control group ($p = 0.001$). Evaluation at T_3M (both at buccal and lingual side) evidenced a moderate decreasing trend in all parameters except for PI.

Conclusions: considering a short-term follow-up, the use of APDT seems to positively decrease values of CAL and REC.

LOWER THIRD MOLAR DIFFICULTY EVALUATION: PROSPECTIVE STUDY AND NEW CLASSIFICATION PROPOSAL

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Aim: establishing the level of complexity in third molar extraction is essential for proper surgical planning, reducing postoperative morbidity and informing the patient. The aim of this work is to verify whether the preoperative assessment, conducted using the Pederson and CSDS classifications, is reflected in the execution of the surgical procedure.

Methods: this prospective study involved 80 healthy patients with impacted lower third molars. Each tooth was assessed using the Pederson and CSDS classifications. The following variables were measured: corticomedullary osteotomy, odontotomy, root sectioning, duration of the procedure. Each variable was assigned a score, and the sum resulted in a total score to reproduce the surgical difficulty encountered by the operator.

Results: correlations between the analyzed variables were in-

vestigated using the Spearman's rank correlation test with R and p indices, the latter being significant for $p < 0.05$. R measures the degree of correlation between two variables (1] Pederson or CSDS, 2] surgical complexity, surgical time, corticomedullary osteotomy) where 0 = no correlation and 1 = perfect correlation.

The CSDS demonstrated a statistically correlation with values related to the complexity of the procedure.

Conclusions: preoperative assessment of difficulty using the CSDS can be considered consistent with the postoperative complexity encountered during the surgery. This classification could be an effective tool for estimating operative duration, thus adequately planning daily workload and providing accurate information to patients.

SURGICAL MANAGEMENT OF MRONJ WITH L-PRF ADJUNCT AS DRUG DELIVERY SYSTEM FOR METRONIDAZOLE

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Aim: to assess the feasibility of the adjuvant use of leucocyte- and platelet-rich fibrin (L-PRF) as a drug delivery system for metronidazole in the surgical management of Medication-Related Osteonecrosis of the Jaws (MRONJ).

Methods: after ethical committee approval (2023/26), patients diagnosed with MRONJ requiring surgical treatment were included. All patients were classified according to the AAOMS staging system. All the patients received a single-antibiotic therapy for one week. L-PRF was prepared collecting 4-6 tubes of venous blood and adding 0.5 mL of metronidazole (2.5 mg) before centrifugation. After surgical removal of necrotic bone, L-PRF membranes were placed in the surgical site and sutured with absorbable sutures. Clinical outcomes of interest were mucosal healing in the treated area and downstag-

ing of the MRONJ lesion. Each outcome was evaluated at 0.5, 1, and 3 months after surgery.

Results: fourteen patients were enrolled, ten women and four men; mean age: 69.93 ± 11.68 years. Among them, 7 patients were treated with bisphosphonates and 7 with denosumab. One MRONJ lesion was classified as stage 1, 9 as stage 2, and 4 as stage 3. Complete mucosal healing was achieved in 12 patients (85.7%) at the 3-months follow-up. Downstaging was achieved in the other 2 patients (14.3%).

Conclusions: surgical treatment with L-PRF loaded with metronidazole as adjuvant treatment showed a high success rate in the management of MRONJ. This approach prevented the administration of combined antibiotic therapy, improving patients' quality of life and acceptance of treatment protocols.

MORPHOLOGICAL AND STRUCTURAL DIFFERENT GRAFT BIOMATERIALS EVALUATION: AN *IN VITRO* STUDY

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Aim: evaluation of different morphological and structural specific characteristics of selected graft biomaterials, to assess if the differences have a positive effect on bone regeneration and remodeling processes.

Methods: five different bovine, porcine, equine bone grafts (Geistlich Bio-Oss; Dentsply Ossix Bone; Bioteck Cancellous Cortical Granules; Bioteck Activabone; Straumann XenoFlex) were analysed with a light microscope AXIO to evaluate morphological characteristics (granules and bone blocks), morphometric characteristics, surface characteristics and different specific components (collagen or vitamin C).

Results: Geistlich has asymmetrically shaped granules 0.609 x 1.067 mm; 0.871 x 0.456 mm; 1.268 x 1.104 mm and circular holes 0.21 x 0.21 mm; 0.22 x 0.23 mm; 0.075 x 0.088 mm.

Compared to Bioteck CCG, a mixture of spongy and cortical granules, electrostatic, thinner, with symmetrical holes. Dentsply has two different types of surfaces: logs of hydroxyapatite crystals 0.055 mm apart and crystals of 0.038 mm. Versus the Straumann bone block, which has a homogeneous architecture of porous bone and lost granules. The Activabone gel appears as a previously ground material, with elongated, ovoid chips embedded in a collagen matrix.

Conclusions: macroscopical characteristics could influence the blood clot stabilization in different post-extraction conditions or in edentulous sites in which the granules it will be not suggested. Other microscopical characteristics seem to influence the bone formation suggesting an ideal using in specific conditions to contribute the better bone formation.

DRY TEETH OSTEOINDUCTIVE EVALUATION AFTER CHEMICAL DEMINERALIZATION

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Aim: *in vitro* evaluation of osteoinductivity characteristics maintenance in dry stored extracted human teeth after chemical demineralization treatment with Tooth Transformer (TT) device.

Methods: twelve human extracted teeth were selected in healthy patients. Caries, tartar, and filling materials were removed from each tooth, and then each tooth was roughly dissected and stored at room temperature until use. Each sample, after being cut, was subjected to shredding, demineralization and disinfection using the TT device and the granules obtained were analyzed with BCA protein assay kit to detect the total protein content. Bone Morphogenetic Protein-2 (BMP-2) and Collagen type I (COL-I) were recorded using the Enzyme-Linked Immunosorbent Assay (ELISA) test and Mineralization Protein LIM-1 (LMP-1), Transforming Growth Factor- β

(TGF- β) and β -Actin were evaluated with the Western Blot Analysis.

Results: ELISA test showed BMP-2 and COL-I presence in all specimens analyzed. Western Blot Analysis showed the presence of LMP-1 in all samples, while TGF- β did not follow the same trend and β -Actin was absent in all samples.

Conclusions: further studies with a larger number of samples will be needed to confirm the experimental data. Moreover, the dry stored extracted human teeth seem to preserve the osteoinductivity characteristics after chemical demineralization with TT device. These interesting results could suggest the use of extracted tooth as an autologous bone grafting material in bone regeneration procedures and to prevent or reduce the bone resorption in several clinical cases.

IN VITRO EVALUATION OF FIVE DIFFERENT RESORBABLE BARRIER MEMBRANES FOR GBR IN DENTISTRY

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Aim: *in vitro* evaluation of macroscopic and microscopic differences between 5 different resorbable membranes used for GBR in dentistry.

Methods: 5 different resorbable membranes (Bio-Gide[®], OSSIX Plus[®], Osteoxenon Flex[®], XC Collagen Xenomatrix[®], Straumann Membrane Flex[®]) were analyzed with a light microscope (ZEISS Axio Zoom[®]). For each material, the appearance of the surface, the presence and size of reliefs and depressions and the number of layers were described. Each membrane was cut into 1 x 1 cm squares of which the mass was calculated.

Results: all the barrier membranes are rough, with the pres-

ence of reliefs and depressions. These are greater on the side in contact with the blood and smaller on the side in contact with the soft tissues. In section, the only one to present a stratigraphy is OSSIX Plus[®]. The heaviest barrier membrane is the Osteoxenon Flex[®] and the lightest is OSSIX Plus[®].

Conclusions: the barrier membranes appear similar to each other, even if they have more different conformations, which could guarantee a different stability of the post-extraction socket. In section, the presence of a stratigraphy and the different grade of compaction can affect the healing of the blood and soft tissues.

PRIMARY STABILITY OF IMPLANTS INSERTED INTO POLYURETHANE BLOCKS: AN *IN VITRO* STUDY

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Aim: to evaluate the influence of different techniques used to prepare the implant site on the primary stability of the implant in two different densities of artificial bone.

Methods: a total of 150 implant sites were prepared in rigid polyurethane blocks to simulate two distinct bone densities of 15 Pounds per Cubic Foot (PCF) and 30 PCF, with a 1-mm-thick simulated cortex. The implant sites were equally distributed among Piezoelectric Surgery (PES), Traditional Drills (TD), and black ruby Magnetic Mallet inserts (MM). To evaluate implant's primary stability Osstell and micro-tomography were used.

Results: our findings indicate that the ISQ values were generally higher for 30 PCF compared to 15 PCF. PES exhibited the greatest ISQ values, followed by MM and TD. These findings corresponded for both bone densities of 30 PCF and 15 PCF. By utilizing Micro-CT scans, we were able to determine the ra-

tio of the implant occupation to the preparation site and calculate the maximum distance between the implant and the wall of the preparation site. The findings demonstrated that PES had a higher ratio of implant to preparation site occupation, followed by TD, and then the MM, at a bone density of 30 PCF. Nevertheless, there were no statistically significant differences in the occupation ratio among these three approaches in the bone density of 15 PCF. The smallest gaps between the implant and site preparation were seen when TD were used, followed by MM and by PES, either in a bone density 15 PCF or 30 PCF. A statistical analysis using ANOVA revealed these differences to be significant, with *p*-values of <0.05.

Conclusions: the outcomes of this study indicate that employing the PES technique and osteo-densification with MM during implant insertion may enhance the primary stability and increase the possibility of early implant loading.

ORAL MUCOCELE AND ITS MANAGEMENT: A LONG-TERM FOLLOW-UP OF 5 CASES AND LITERATURE REVIEW

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Aim: the aim of this study is to describe the clinicopathological features of oral mucocele and to show how complete surgical excision of the neoformation and of the minor salivary glands adjacent to it allows a concrete reduction in the recurrence rate.

Methods: five cases of oral mucocele diagnosed at the Department of Dentistry of San Raffaele Hospital in Milan, Italy, between 2015 and 2018 are presented. For each patient, the following data were analysed and recorded: age and sex of the patient, general medical history, remote and forthcoming dental history, clinical features of the neoformation (location, color, size and consistency), treatment, histopathological diagnosis and possible recurrence.

Results: during the period under review, the histopathological

diagnosis of oral mucocele was made in 5 cases with a male: female ratio of 3:2 and a mean age of 26.4 years. The most common site of occurrence was the lower labial mucosa, most often blue, purple or normal color neoformations with an average diameter of 1.5 cm were observed. The most diagnosed type of mucocele was extravasation (80%), while the main etiological factor detected was trauma. All patients underwent surgical exeresis of the lesion followed by a post-operative follow-up of a mean duration of 96±60 months, with no signs of recurrence.

Conclusions: the study demonstrates that complete surgical excision of the neoformation and of the surrounding minor salivary glands, as well as appropriate post-operative management, are decisive factors in reducing the risk of recurrence.

LATE-ONSET MULTIPLE SUPERNUMERARY TEETH IN NON-SINDROMIC PATIENTS: CLINICAL CONSIDERATIONS

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Supernumerary teeth denote dental anomalies characterized by teeth or tooth-like structures exceeding the normal complement of 20 primary or 32 permanent teeth. Hyperdontia exhibits a spectrum ranging from singular to multiple occurrences, unilateral to bilateral manifestations, and involvement of both the maxilla and mandible.

Prevalence rates vary, encompassing 0.3-0.5% in primary dentition and 0.1-3.8% in permanent dentition. Notably, males exhibit a higher susceptibility, with a male-to-female ratio of 2:1.

Eruption of supernumerary teeth occurs in approximately 13-14% of cases, often presenting as impacted entities, thus frequently necessitating incidental discovery for diagnosis.

Various theories have been proposed as etiological factors, with the embryogenetic theory being prominent in the litera-

ture, which suggests that hyperactivity of the dental lamina may play key roles. Genetic factors also seem to influence the development of supernumerary teeth; however, while a causative relationship has not been established, hyperdontia has been correlated with different Mendelian syndromes.

Prevalence of multiple supernumerary teeth in non-syndromic patient is reported at 1%. Limited evidence exists regarding the occurrence of late-forming supernumerary teeth, and studies on the timing of supernumerary tooth formation are rare.

This study presents cases of multiple supernumerary teeth in non-syndromic patients, developed and treated at different times.

Further research is needed to evaluate late-forming supernumerary teeth and to understand the underlying causes of this phenomenon.

NOVEL APPLICATION OF INTEGRA DERMAL SUBSTITUTE TO PROMOTE HEALING IN LARGE MUCOSAL DEFECTS

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Aim: dermal substitutes are biomatrices that promote tissue growth and improve wound healing, thus acting as a proper dermal layer. The Integra Dermal Regeneration Template is a porous matrix composed of glycosaminoglycans and collagen derived from bovine tendons. In this study, it is shown how this particular dermal substitute is used for the reconstruction of large defects of the oral cavity.

Methods: for this study, five patients were selected. They presented particular conditions which primary intention healing is difficult to achieve, such as the presence of extensive lesions or localized ones at specific areas in the oral cavity, like the palate, the alveolar ridge and the cheek. Lesions were surgically excised, followed by application of the double-layer In-

tegra dermal substitute, stabilized with a plate secured by synthetic screws. After 21 days, the plate and silicone layer were removed.

Results: between 7 to 14 days post-surgery, new collagen and neoangiogenesis were evident. By day 21, the dermal tissue was completely formed and re-epithalization could begin from the margins of the defect, after the removal of the plate. By the 30-40 days follow-up, full healing of the initial defect was achieved.

Conclusions: although currently there are limited studies regarding the use of dermal substitute in dentistry, they represent an excellent alternative for the reconstruction of losses of substance in the oral cavity.

5 YEARS OBSERVATIONAL STUDY: REPORT OF MRONJ CASES FROM 2019 TO 2023

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Aim: analysis of 74 cases of MRONJ from January 2019 to December 2023.

Methods: a retrospective research and analysis of 74 cases of ONJ has been made by compiling a dataset recording: drug and period of taking, pathology, cause of ONJ, treatment, staging and recurrence of ONJ.

Results: a close correlation was found between ONJ and zoledronic acid (37,8%), denosumab 120mg-monthly (31,1%), alendronic acid (18,9%). The 64,9% of the ONJs were seen in women (33% denosumab 120mg-monthly) and 35,1% in men (62% zoledronic acid). The most frequent causes of ONJ were: 35% decubitus, 32% tooth extractions and 12% perimplantitis.

Were analysed the distribution of ONJ based on stage I, II, III and for each stage the drugs involved. Zoledronic acid is well

represented in each stage with a greater correlation to stage I, unlike denosumab 120 mg monthly which is more correlated to stage II. Denosumab 60 mg every six months correlates with a lower number of cases and less severe (I and II). At the time of diagnosis, 53% of patients were still on antiresorptive therapy and 30% had suspended it less than a year before. 50% of patients took the drug for 1-5 years and 16% for more than 10 years. The treatments performed were predominantly surgical: local surgery in 39% of cases and maxillofacial surgery in 28%. Following surgical treatment, a recurrence of ONJ was then detected in 12% of cases.

Conclusions: a correct modulation of denosumab 60 mg every six months can reduce the risk of ONJ. Also, a correct follow-up of edentulous patients allows the risk of prosthetic decubitus to be minimized.

REPORT OF 41 SURGICAL CASES TREATED WITH CGF FOR MRONJ PREVENTION OR TREATMENT (2022-2023)

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Aim: analysis of MRONJ surgery (prevention or treatment) using CGF.

Methods: a retrospective research and analysis of the 41 surgical cases has been made by compiling a dataset recording: drug and period of taking, pathology and type of surgery (extraction or sequestrectomy). Drug holiday was evaluated by a Specialist Doctor. The quality of the CGF obtained from all the patients and CGF membranes for closure by first intention were recorded.

Results: the 68,3% of the cases were for MRONJ prevention (tooth extractions using CGF) in patients using antiresorptive drugs (mostly alendronic acid, clodronic acid and zoledronic acid), while the 31,7% were for bone sequestrectomy (50% denosumab 120mg-monthly, 17% zoledronic acid, 17% deno-

sumab 60mg-six months, 7,5% ibandronic acid, 7,5% unknown drug). The 27% of the patients treated for MRONJ had been taking the drug from less than 1 year up to 5 years (mostly denosumab 120mg-monthly and zoledronic acid). Were reported 3 recurrences of ONJ after our treatment; then 2 of them underwent maxillofacial surgery.

About the CGF datas, we generally noticed a good quality (color, consistency, length and quantity) mostly of the CGF obtained from the first tube. We used plastic and glass tubes randomly. CGF allowed us closure for first intention in most cases, which is ideal for optimal healing.

Conclusions: CGF contributes in a positive way for the post-extractive wound healing, but also for MRONJ treatment.

MACROSCOPIC ANALYSIS OF CGF OBTAINED WITH DIFFERENT TUBES IN PATIENTS TAKING NOAS

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Aim: to test if and how different tubes can influence the obtaining of CGF in patients taking NOAs. Calcium gluconate (0,3 ml) was used as a presumed accelerator.

Methods: a macroscopic analysis of 11 tubes (Silfradent 10 ml tubes, PV 200R) was made: 4 glass tubes, 2 plastic tubes and 5 glass tubes added with calcium gluconate. After centrifugation with Medifuge MF200CGF were evaluated: color, consistency, quantity, length (mm) and mass (g) of the CGF obtained. If the consistence was not as expected, CGF was left settling from liquid to gelatinous.

Results: one plastic tube and one glass tube added with calcium gluconate needed extra settling time (44 minutes) to reach the desired consistency and length (2,9 mm and 2,5 mm). All

the other glass tubes were optimal in consistency, color and length after the 14 minutes of centrifugation. We noticed an increased mass of CGF obtained from glass tubes (4 mm), a paler color in CGF obtained from plastic tubes and a minor length of CGF obtained from plastic tubes and glass tubes added with calcium gluconate.

Conclusions: in our experience, calcium gluconate does not improve the formation of CGF and does not reduce the condensation time; it could be useful to increase the numbers of this study for more comprehensive results, but also the dosage of calcium gluconate. Testing conical tubes or heating them up could also be a way to improve CGF formation.

ADVANTAGES OF USING MAGNETIC MALLET® IN POST EXTRACTION SOCKET PRESERVATION

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Aim: a recently introduced extraction method involves the use of the Magnetic Mallet®, which allows the clinician to be more precise, faster and less traumatic for the patient. The aim of the study was to evaluate clinically whether extractions performed by means of Magnetic Mallet® can lead to less buccal-palatal/lingual bone resorption.

Methods: between February 2023 and June 2023, 9 patients with an average age of 62 years underwent 29 extractions using the Magnetic Mallet®. Sectoral CBCTs were performed to measure bone thickness at time 0 and 3 months after extraction in order to assess buccal-palatal/lingual resorption. A two-sample t-test was performed to assess possible statistically significant differences between measurements taken at time T_0 and those taken at 3 months (T_3M) in the 29 dental elements.

Results: 22 teeth were extracted in the upper jaw and 7 in the lower jaw. The average degree of mobility was 1 and 5 teeth had no hard lamina. The average force impressed by the instrument to extract the teeth was 2, while the average frequency of blows administered was 7. The average time taken for the extractions was 3½ minutes. After 3 months, mean buccal-palatal/lingual bone resorption was 1.54 mm. Statistically, the difference of bone resorption between T_0 and T_3M patients' sample was significant at an alpha significance level of 0.01.

Conclusions: the use of the Magnetic Mallet® during extraction procedures resulted in less bone resorption in the 3 months following dental extractions, compared to the use of manual hammers, chisels and levers.

INTRAORAL RANULA: CASE SERIES AND LITERATURE REVIEW

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Aim: salivary gland that typically occurs on the oral floor but could develop from the Blandin-Nuhn glands on the ventral tongue's surface. This study aims to demonstrate that complete intraoral excision of this subtype of mucocele stands as the most anatomically rational approach for managing oral ranula.

Methods: five cases of patients with diagnosis of oral ranula who underwent intraoral resection are presented. Each case outlines the patient's clinical history, histological examination, surgical procedure and postoperative outcomes. These case reports offer valuable insights into the modality and challenges associated with intraoral resection for managing oral ranula.

Results: the blunt dissection approach to the lesion ensures the preservation of vital structures within the sublingual space.

Correct resection of the ranula has significantly reduced the risk of recurrence, with a follow-up period exceeding one year for each case presented. Surgical excision of the mucocele along with the sialoadenectomy of the associated salivary gland, is preferred when the lesion is persistent, recurrent or symptomatic. After adequate removal, the chances of recurrence are reasonably low.

Conclusions: the study shows the efficacy of intraoral resection as a viable treatment option for oral ranula, based on the favorable outcomes observed in the presented cases and supported by the literature review. The potential advantages of this approach are minimal invasiveness, low recurrence rates and preservation of surrounding structures.

DISEASE RECURRENCE FOLLOWING EXCISIONAL ORAL BIOPSY: A RETROSPECTIVE COHORT STUDY

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Aim: to evaluate the prevalence of disease recurrence following Excisional Oral Biopsy (EOB) in relation to patient-, surgery- and disease-related characteristics.

Methods: patients undergoing EOB at the Operative Unit of Dentistry, Azienda Unità Sanitaria Locale, Ferrara, Italy in the years 2021-2024 and presenting at least at one follow-up visit were retrospectively considered. Surgeries had been performed by 3 expert oral surgeons. Disease recurrence (as objectively assessed by the operator at the follow-up visit) was described in relation to patient-related characteristics (e.g., age, biological sex), surgery-related factors (e.g., operator) and disease nature and characteristics (e.g., histological nature of the lesion, dimensions, topography).

Results: seventy-four EOB in 67 patients (M = 30, mean age: 57±17 years) were included for analysis. The maximum length of follow-up was 2.7 years. Seven (9.5%) lesions in 6 patients (9.0%) recurred. Recurrences included lesions with dysplasia (n = 3; RR = 60%), papilloma (n = 1; RR = 25%), or non-specific histological diagnosis (n = 3; recurrence rate, RR = 17%). The proportion of males for recurring and non-recurring lesions was 100% and 40%, respectively. Moreover, 71% of recurring lesions had unclear margins.

Conclusions: disease recurrence following EOB seems to be influenced by biological sex as well as the nature and characteristics of the lesion. In particular, male sex, dysplasia and unclear margins of the lesion seem to be associated with higher RR.

INTRA- AND POST-OPERATIVE MORBILITY OF ORAL BIOPSY: A RETROSPECTIVE COHORT STUDY

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Aims: to evaluate (i) the type and incidence of complications in a cohort of patients undergoing oral biopsy (OB) in a public clinical setting, and (ii) the association of complications with patient-, site- and surgery-related factors.

Methods: patients undergoing OB in 2021-2024 at the Operative Unit of Dentistry, Azienda Unità Sanitaria Locale of Ferrara, Italy, were retrospectively considered for eligibility. Each complication was qualified in terms of type, incidence, severity, and resolution, and was characterized according to patient characteristics and exposures, site-related characteristics and surgery-related factors.

Results: eighty-seven OB (74 excisional, 13 incisional) in 78 patients contributed the analysis. Complications occurred in 9 (10%) patients undergoing excisional OB. Intraoperative

complications consisted of 1 flap fenestration and 1 hemorrhage, while postoperative complications consisted of 4 neurologic lesions, 2 hemorrhagic events (both occurring in patients under anticoagulant and/or antiplatelet therapy) and 1 scar fibrosis. One neurologic lesion persisted beyond the 9-month follow-up, even though with a milder intensity. Mucocoele and size >30 mm² were associated with higher complication rates.

Conclusions: in a public clinical setting, complications related to OB occurred with an incidence rate of 10%, with 1% of the events persisting after 9 months and being of neurologic nature. Complications rates seemed to be negatively influenced by exposures to anticoagulant/antiplatelet therapy and the nature, size and localization of the lesion.

AMINOGAM GEL IN HEALING OF THE POST-EXTRACTION ALVEOLUS IN PATIENTS WITH DMT2

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Aim: the purpose of the study is to evaluate the clinical and biological effects of Aminogam therapy on the healing of post-extraction sockets in patients with type 2 diabetes mellitus. The objective is to determine whether socket healing is accelerated and improved, and whether the risk of superinfection is reduced. This is a case-control study, post-extraction sockets of patients in the study group are treated with Aminogam, while those in the control group undergo natural healing. The patient selection is randomized.

Methods: we examined twenty patients, who met both inclusion and exclusion criteria, of which we provide the specifics: inclusion criteria: age over 18, diagnosis of diabetes for at least one year, adequate cognitive level, voluntary participation in the study, evidence of at least one systemic complication from diabetes mellitus, need for one dental extraction, ability to complete the trial. Exclusion criteria: known allergy to

any of the components of the compound, severe deterioration of general health conditions. Patients will be recorded with an electronic medical record containing age, sex, smoking status, systemic diseases, glucose level, HbA1c, blood pressure, BMI, episodes of ketoacidosis, years since initial diagnosis of DM, previous hospitalization for DM complications. Periodontal screening and PSR code, conditions of non-treatable teeth undergoing extraction, extraction difficulty, patient-reported symptoms, and any pharmacological therapy for these symptoms will be recorded. Aminogam will be applied in the sockets of patients selected as study sites. Each patient will undergo a precise follow-up program, at each session, the 3 variables will be remeasured.

Conclusions: we hope that this study can allow us to evaluate the use in clinical practice of a medical device without known side effects.

TRIGEMINAL NEUROPATHIES FOLLOWING DENTAL ANESTHETIC BLOCKS. A REVIEW OF THE LITERATURE

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Aim: Trigeminal Nerve Injuries (TNI) represent possible complications associated with dental procedures. While most patients experiencing TNI undergo spontaneous recovery, some develops chronic pain. This review offers an overview of TNI, specifically focusing on dental anesthetic injections. The aim is to educate about potential TNI and to inform clinicians of the importance of early management and prompt referral to enhance patient care.

Methods: the research comprises a comprehensive literature review conducted on PubMed, Google Scholar, Scopus, Ovid, and Science Direct until February 2023. The search was conducted for articles discussing injuries to the trigeminal nerve from dental procedures.

Results: predictive factors for long-term persistence of somatosensory disturbance include female sex, higher number

of painful comorbidities, presence of thermal and mechanical hyperesthesia, higher pain scores and maxillary nerve lesions. Pre-existing neuropathic conditions should be identified and adequate radiographic images should be obtained before any dental procedure. In confirmed cases of TNI, early management and intervention depend on the etiology and duration of TNI; in cases where chronic post-traumatic neuropathic pain persists, appropriate management necessitates referral to orofacial pain specialists and long-term use of neuropathic pain medications.

Conclusions: predictive factors associated with patients, procedures, and providers are identified. Adequate education in TNI is essential as early identification and management of TNI are needed to enhance prognosis.

HISTOLOGICAL ANALYSIS OF DENTAL FOLLICLES AFTER THE EXTRACTION OF THIRD MOLARS: A REVIEW

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Aim: removal of impacted third molars is a common procedure performed in oral surgery. Although indications for the extraction of symptomatic impacted third molars have been well established, there is still no general agreement about the need for surgical removal of asymptomatic impacted third molars. On the other hand, the absence of clinical symptoms does not imply the absence of illnesses. The aim of this study was to perform a narrative literature review about the pathological alterations related to third molars dental follicles.

Methods: the Scopus database and Medline (PubMed) were used as searching tools to find articles that are published between 1999 and 2023, about the pathological alterations related to third molars dental follicles. The search was executed with various combinations of the following terms: “third mo-

lar”, “dental follicle”, “pathology”, “cyst” in the publications title, abstract and keywords.

Results: literature review identified 20 published articles which met the inclusion criteria. Overall, 1692 specimens were observed. The most prevalent type of lesion was the dentigerous cyst with a percentage varying from 1 to 51%. In 3 articles ameloblastoma was identified as one of the pathological alterations (0,5-1%). Other pathologic alterations identified were inflammatory changes, granulation tissue, squamous metaplasia, pyogenic granuloma and odontogenic keratocyst.

Conclusions: pathological changes may be present in the dental follicle of impacted third molars even in the absence of clinical or radiographic signs of disease.

PRENATAL DIAGNOSIS OF ORAL MALFORMATIONS

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Aim: in this work it was analyzed the importance prenatal diagnosis of oral alterations which were in our case the cleft lip and the cleft palate.

The objectives were to diagnose oral disorders using technology and prenatal complementary tests which provided us the information on the current state of the fetus and establish the most useful diagnostic tool for early detection of oral disorders in pregnant women.

Methods: the scientific articles published have being selected trying to select only the ones in English.

Some articles showing the relationship between syndromes and these oral pathologies have been included.

Results: the majority of articles emphasized the use of 3D ultrasound because they have the ability to detect oral alterations of the fetus in the first months of the pregnancy.

Scientific articles showed the use of magnetic resonance while in others it has been observed a comparison between these and ultrasound.

They also explained how the possible alterations can be analyzed with the same complementary tests regarding the anatomical point of view and they also demonstrated the importance in the early detection of these alterations in order to perform the intervention as soon as possible.

Conclusions: raising the importance in the early detection of these alterations and demonstrating how much it was important for them to intervene precisely.

The chosen articles showed us the importance of complementary tests such as ultrasound and magnetic resonance that are used to confirm the presence of these pathologies also the magnetic resonance can be used.

ATTITUDE OF THE DENTIST TOWARDS THE ANTI-AGGREGATE PATIENT IN ORAL SURGERY

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Aim: this paper aimed to provide information to clinicians regarding the approach to adopt towards patients who were undergoing some type of oral surgery and who were taking antiplatelet drugs at the same time. A documented overview was given regarding rising cardiovascular disease in much of the developed and developing world. Furthermore, the mechanisms of actions of most important antiplatelet drugs were described, and then it was analyzed what surgical treatments performed in the dentist's clinic more likely can cause bleeding.

Methods: the keywords used were "antiplatelet therapy",

"dental surgery", "oral surgery", "dental extractions", and only articles in English and from the last 10 years were considered.

Results: according to this overview, it is not necessary to stop antiplatelet therapy in oral surgery patient, the suspension of the antiplatelet therapy could cause the onset of thrombo-encephalic complications and post-surgical measures of hemostasis are an excellent ally in reducing postoperative bleeding.

Conclusions: it is neither advantageous for the clinician nor beneficial for the patient to suspend antiplatelet therapy before undergoing oral surgery.

LOWER THIRD MOLAR CLASSIFICATIONS: REDUCING SURGICAL RISK WITH COMPREHENSIVE FLOW CHART

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Aim: the purpose of this research is to analyze the two best-known classifications on the position of the lower third molars, such as Pell and Gregory's classification and Winter's classification, examining how they affect planning surgery in lower third molar extraction.

Methods: a review of the scientific literature on the international PubMed and MedLine platforms of English-language articles was performed. The keywords used in the search were "third molars classifications"; "third molars extraction"; "Winter classification third molars"; "Pell and Gregory classification".

Results: Winter's classification evaluates the angulation of the

lower third molar relative to the axis of the lower second molar, from which four different positions of the third molar are derived: mesio-angular; horizontal; normo-angular and disto-angular. This classification is important because angulation determines the extraction route and it is critical for planning surgery. In Pell and Gregory's classification, the position of the lower third molar is evaluated with respect to two parameters: anterior margin of the mandibular upright branch and occlusal plane.

Conclusions: the combination of the two classifications allows the clinician to be guided in planning surgery. Proper surgical planning allows the reduction of risk during surgery.

IMPACT OF ANTIBIOTICS ADMINISTRATION ON PLATELET-RICH FIBRIN: A REVIEW OF THE LITERATURE

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Aim: evaluation of Platelet-Rich Fibrin (PRF) incorporated with antibiotics.

Methods: a literature review was conducted to analyse the impact of antibiotics administration and incorporation on PRF. Main administered antibiotics, changes in physical properties and antibacterial effects of PRF through agar diffusion test were examined.

Results: Principally Ampicillin/Sulbactam, Metronidazole and Clindamycin were analyzed.

Following the local injection of a volume of 0.5 ml of antibiotic solution into blood samples before centrifugation, no changes in physical and antibacterial properties of PRF were observed. Powdered antibiotics and larger volume led to inadequate, whitish, fragile and non-compressible PRF. Growth factors release had not been influenced. The greatest antibacterial ef-

fect was observed in Clindamycin and Ampicillin/Sulbactam, mainly against *S. Aureus*, *F. Nucleatum* and *E. Faecalis* for up to 4 days. Oral/intravenous antibiotic administration did not alter PRF properties. Better antibacterial effects were observed for 48hours following intravenous administration of Ampicillin/Sulbactam and Clindamycin 600 mg compared to oral administration.

Direct injection of antibiotic into PRF after centrifugation did not affect its physical properties. The addition of 0.5 ml of Amoxicillin+ Clavulanic Acid and Clindamycin 600 mg improved PRF's antibacterial effect, which persisted for up to 7 days.

Conclusions: incorporating local antibiotics into PRF in oral surgical treatment could be an alternative method to systemic antibiotic therapy.

CONSCIOUS SEDATION IN DENTISTRY

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Aim: this poster aims to elucidate the benefits of Conscious Sedation in Dentistry, delineating suitable patient profiles and the classes of medication employed. It will be explained how there are different types of dental therapies and various types of patients, some of whom are good candidates for this technique. The concepts of anesthesia and its distinction from altered consciousness techniques will be discussed.

Methods: various levels of sedation utilized during dental procedures will be explained ranging from anxiolysis to moderate sedation, deep sedation, and, ultimately, general anesthesia. This research is based on a comprehensive review of the current literature, supplemented by a case study of a phobic patient through conscious sedation. The patient, affected by se-

vere dental phobia, didn't access dental services for over two decades, resulting to have significant plaque and tartar accumulation. This situation was causing the patient a chronic inflammation and profound psychological distress.

Results: through conscious sedation, the patient successfully underwent the extraction of all remaining teeth and then could be rehabilitated with a mobile prosthesis.

Conclusions: anxiolysis represents a promising frontier in dentistry, offering advantages to both practitioners and patients. This practice can extend medical care to individuals otherwise reluctant or unable to tolerate traditional treatments. Of course, a proper training is imperative, but this practice could be an alternative to general anesthesia in some cases.

ACHIEVING NATURAL-LOOKING TEETH THROUGH EMERGENCE PROFILE MANAGEMENT IN DENTAL IMPLANTS

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Aim: this systematic review was aimed at evaluating how soft tissue, thus emergence profile design, is best managed in implant dentistry in order to achieve stable and satisfactory aesthetic results. The main challenge in order to do so is the long term stability of the free gingival margin.

Methods: a narrative review was conducted using electronic databases such as PubMed and Wiley. The key words used were "emergence profile", "aesthetic implant restoration" and "soft tissue management in oral implantology".

Results: the migration of the free gingival margin is mainly due to inadequate bone volumes, thickness and width of keratinized tissue around implants, and constant chemical, biologi-

cal or mechanical damage, among which an inadequate emergence profile, that interfere with the formation of the biologic width around an implant.

Conclusions: this systematic review highlighted that provisional implant supported crowns aid in gingival recontouring, therefore in establishing an optimal emergence profile. Implants with an optimal emergence profile are expected to provide superior aesthetic and functional results.

Moreover, reduced quality and quantity of keratinized mucosa is associated with poor peri-implant health that can result in plaque accumulation, mucosal recession, marginal bone resorption and poor aesthetic outcomes.

INFLUENCE OF PIEZOELECTRIC SURGERY IN SINUS LIFT

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Aim: the aim of this narrative review is to assess if the use of piezoelectric surgery (CP) in sinus lift procedure is associated with a lower incidence of sinus membrane perforation than surgery with conventional rotary instruments (CT).

Methods: a literature research was performed in the databases of PubMed, Google Scholar and Scopus, covering a period from 2000 to 2023. Using the PICO model, patients undergoing sinus lift by piezoelectric surgery or conventional rotary instruments were included, and the perforation rate of the two techniques was assessed. BIAS risk assessment of randomised and non-randomised studies was performed through the RoB-2 and ROBINS-I methods, respectively.

Results: thirty-six studies with a total of 3,320 patients undergoing sinus lift were selected. Among the 4,429 total interventions, 703 were performed by CP while 3,710 by CT. The analysis of the articles revealed a perforation rate of 9.18% for CP and 25.5% for CT. Among the selected studies, the group of RCT studies indicated a perforation rate with CP of 8.18% and with CT of 11%.

Conclusions: the data suggest that CP is associated with a lower incidence of sinus membrane perforations than conventional surgery. However, the RCT cluster of randomised clinical trials suggests that there is no significant difference between the two techniques.

THE IMPACT OF SCIENTIFIC RESEARCH IN DENTISTRY AND ORAL SURGERY: A BIBLIOMETRIC STUDY

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Aim: in the fields of Dentistry and Medicine, the constant demand for updates and adherence to evidence-based practices remain a paramount issue. Bibliometric analysis represents a critical tool to uncover emerging trends, to highlight collaboration network and to evaluate the performance of researchers and academic associations. The aim of the present study was to analyze the academic scientific production carried out by public and private Italian Universities.

Methods: the list of MED/28 academic researchers, associate and full professors with relative affiliations were retrieved from

the national database CINECA. The SCOPUS database was chosen for the bibliometric data evaluation.

Results: the scientific output of 416 researchers and 37 Italian universities was analyzed calculating the number of total academic papers, citations and h-index. Interestingly, an increased scientific production trend was observed over the last 5 years.

Conclusions: a significant impact of the different academic classes on the scientific production was observed. The bibliometric approach revealed an increased trend in research by dental clinicians.

IN-VIVO MODELLING OF WOUND HEALING IN A COHORT OF PATIENTS UNDERGOING THIRD MOLAR SURGERY

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Aim: wound healing is a primary outcome of success of oral surgical procedures. In the present study, the effects of chlorhexidine + anti-discoloration system (CHX+ADS) with or without Hyaluronic Acid (HA) mouth rinse compared to placebo in promoting wound healing following third molar surgery were assessed.

Methods: this was a single center, randomized, placebo controlled trial. Healthy subjects with indication to third molar extraction were included. The surgical procedure was performed under standardized conditions. In all patients, an experimental incision in the keratinized gingiva at the base of the interdental papilla was performed. Following surgery, the patients were randomly assigned to 3 treatment groups, namely CHX+ADS+HA, CHX+ADS, or placebo. Wound healing was assessed at 3, 7 and 14 days postoperatively with the Early Heal-

ing Index (EHI) proposed by Wachtel & collaborators, ranging between Score 1 (complete wound healing in the absence of fibrin line) and 5 (incomplete wound healing with total necrosis).

Results: fifty-four patients (18 per group) were enrolled. At 3 and 7 days, lower EHI scores were found in both groups treated with CHX+ADS-based mouth rinses compared to placebo ($p < 0.01$ for CHX+ADS+HA, $p < 0.05$ for CHX+ADS). CHX+ADS+HA showed improved healing compared to CHX+ADS ($p < 0.05$) at days 3 and 7. At 14 days, no differences among groups were found.

Conclusions: CHX+ADS-based mouth rinses promoted early wound healing compared to placebo. The adjunct of HA appeared valuable in improving wound closure especially in the first post-operative week.

USE OF I-PRF IN THE EXTRACTION OF IMPACTED LOWER THIRD MOLAR: AN RCT STUDY

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Aim: the aim of this study was to clinically evaluate complications related to lower third molar extraction, such as swelling, pain and healing of surgical wound following submucosal infiltration of i-PRF (Injectable Platelet Rich Fibrin).

Methods: 56 patients were recruited and divided into 2 groups: in the control group the socket was left to heal spontaneously, while the test group was treated with submucosal infiltrations of i-PRF. Pain was assessed by means of a VAS until the 7th postoperative day. Swelling was measured with a flexible ruler using the diagonals joining Trago and Pogonion, Gonion and labial cleft. The swelling was calculated as the sum of these diagonals. All measurements were taken before surgery, on day 3 and day 7. Surgical wound healing was evaluated by the Healing Index (HI) by Landry. Data

comparison between the groups was performed using the T-test for independent samples.

Results: there was no statistically significant difference in the change in swelling on day 3 and day 7 between the two groups. About pain, a statistically significant difference was found at day 1 and day 3 post-surgery. In both groups, pain decreased on the following days and was non-significant at day 7. Regarding surgical wound healing, a significant difference was observed only at day 3 postoperatively.

Conclusions: this study revealed that submucosal injections of i-PRF after third molar extraction included lead to a decrease in pain in the first few days post-surgery, while they had no effect on swelling. However, further clinical studies are needed to confirm these results.

COMPARING THE EFFECTIVENESS OF PTFE, MESHES, AND FOILS IN GBR: 3-YEAR RESULTS OF A RCT

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Aim: to Compare the clinical effectiveness of three different devices used in Guided Bone Regeneration procedures for partially atrophic arches.

Methods: a randomised controlled trial with three parallel arms was conducted enrolling 27 patients, 9 per group. The study evaluated titanium-reinforced PTFE membranes, semi-occlusive CAD/CAM titanium Meshes and occlusive CAD/CAM titanium Foils in terms of surgical outcomes and complications as well as surgical times, surgeon satisfaction and the MBL in 27 GBR procedures, presenting results from 3 year post-implant placement.

Results: the mean reconstructed bone volume was $1269.55 \pm 561.08 \text{ mm}^3$, with no significant difference observed between the three groups ($P = 0.815$). There was also no significant difference for mean maximum height (6.72 mm, $P =$

0.867) and width (7.69 mm, $P = 0.998$). Eleven complications occurred in 10 patients in the first 3 years with no differences between the groups ($P = 0.858$). Surgeon satisfaction varied significantly, with the PTFE group differing from the mesh ($P = 0.003$) and foil group ($P < 0.001$), but not between meshes and foils ($P = 0.172$). Surgical times showed longer minutes for PTFE membranes compared to meshes ($P < 0.001$) and foils ($P = 0.006$), but with no difference between meshes and foils ($P = 0.308$). The mean marginal bone loss at 3 years after implant placement was $0.89 \pm 0.3 \text{ mm}$.

Conclusions: although this study provides valuable insights into the potential benefits of using different types of CAD/CAM devices, further research with larger sample sizes and longer follow-up periods is warranted.

ACCURACY OF DYNAMIC NAVIGATION GUIDED IMPLANT SURGERY FOR FULL-ARCH: A CLINICAL TRIAL

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Aim: to assess dynamic navigation guided surgery accuracy for full-arch implant placement with immediate loading of digitally prefabricated provisional (FDP).

Methods: consecutive edentulous and terminal dentition patients requiring full-arch FDP were treated between December 2020 and January 2022. Implant placement accuracy was evaluated superimposing pre-operative and post-operative Cone Beam Computed Tomographs (CBCT), recording linear (mm) and angular ($^{\circ}$) deviations at implant apex and platform. T-tests were performed to investigate potential effect of calibration registration algorithm (Fiducial based vs Fiducial free), implant site characteristic (Healed vs Post-Extractive), implant angulation (Axial vs Tilted), type of arch (Maxilla vs Mandible) on the accuracy.

Results: 24 patients, 36 complete-arches, 161 implants were

placed. The overall global platform and apex deviation were 1.17 mm (SD 0.57 mm) and 1.30 mm (SD 0.62 mm), with a mean angular deviation 2.19° (SD 1.26°). Statistically significant differences were found only between healed and post-extraction sites concerning the global platform and the global apical deviation. None of the analyzed variables significantly influenced angular deviation.

Conclusions: dynamic CAIS was reliable for complete-arch implant placement and adequate for immediate loading digitally pre-fabricated FDPs. Implant site characteristics was the only statistically significant variable with healed sites reporting higher accuracy compared to post-extractive. Dynamic CAIS enhanced operator performance and accuracy regardless of implant angulation and type of jaw.

3D-PRINTABLE BIOPOLYMERS FOR SOCKET PRESERVATION TECHNIQUE: A RANDOMIZED CLINICAL TRIAL

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Aim: evaluate the efficacy of 3D printed biopolymers compounded with osteoconductive material (beta-tricalcium phosphate and hydroxiapatite) for soft tissues closure after teeth extraction.

Methods: 39 patients were treated with socket preservation using 3D printed biopolymers and randomly divided in 3 groups (Test 1, Test 2 and Control). All cases were treated without flap elevation, careful cleaning and curettage of the sites and then randomly sealed as follows: T₁: a 3D printed disk of poli-D-lactic acid with 10% of hydroxyapatite; T₂: a 3D printed disk of poli-ε caprolactone with 20% of β-tricalcium phosphate; T₃: the socket was left open to heal. At baseline (extraction time) and 6 weeks after extraction the rate of exposure was evaluated and stratified according to the site (anterior, posterior).

Results: no drop out was observed during the 6 weeks fol-

low-up. All the sites underwent uneventful healing with no complications. Test 1 and Test 2 showed a full healing of the soft tissues with a reduction of the exposed area from 46.5±8.25 mm² to 0.6±0.84 mm² and from 47.1±8.67 mm² to 0.6±0.7 mm² respectively. The control Group exhibited a reduction from 45.6±7.25 mm² to 1.2±0.9 mm². Both Test 1 and 2 when compared to the Control group showed a statistically significant better healing (p <0.05). No differences between Test and Control groups were noticed for anterior teeth.

Conclusions: the future focus of personalized medicine is to employ cost-competitive materials, such as bio-polymers and their compounds, along with 3D printing technology, to achieve precision, biocompatibility, and cost reduction. Both materials used in this study showed evidence to achieve the purpose.