UNDERWOOD SEPTA AND CORRELATION WITH THE SCHNEIDERIAN MEMBRANE IN ALTO ADIGE'S POPULATION

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Aim of this investigation is to evaluate prevalence, localization, and height of 120 maxillary sinus septa by using cone-beam computed tomography scans. The study was conduct on the population of Alto Adige.
The thickness of the mucosa has been measured together with the variations of the membrane in relation to those septa.
A total of 240 maxillary sinuses have been considered. Septa were identified using "panorex" reconstructions and axial scans of cone-beam computed tomography using the software "NewTom" The thickness of the mucosa has been evaluated in the paraxial scans and related to those septa where they were present. In the current study, the prevalence of sinus septa is 38.3%.
Significant difference can be found in the height of primary and secondary septa. The mean height of primary septa was 5.7 mm ("1.19) and of secondary septa 3.2 mm ("1.6). Anterior and medium septa resulted significantly higher than posterior septa (P.0.003).
The medium thickness of the mucosa was 0.73 mm ("0.58), whereas close to the septa it turned out to be 1.8 mm ("1.87). The difference is statistically relevant (P.0.003). There is no statistically significant proportional relation between dimensions of septa and thickness of mucosa (P.0.53).
Underwood septa are frequent anatomic variations of the maxillary sinus. Their presence may result in a thickening of the sinus membrane. The systematic study of radiographic anatomy of maxillary sinus is necessary before the sinus lift surgery planning.

SIMPLE MINIMAL SAFE TECHNIQUE IN THE SINUS LIFT WITH APAG GEL: A CASE SERIES

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Aim: in the last 20 years, technological evolution in the regenerative field has made it possible to exploit growth factors and platelet concentrates. Simultaneously, the transalveolar techniques have become increasingly predictable and reliable, leading to the additional advantage of simplified procedures. The aim of this study is to evaluate the effectiveness of a new technique to lift the maxillary sinus through a transalveolar approach, Simple Minimal Safe (SMS), with use of activated plasma albumin gel (APAG).
Methods: a total of 33 patients (22 female and 11 male), aged between 36 and 79, were selected for this study. 44 implants were positioned using the SMS technique in the premolar or molar areas of the maxillary bone (dental elements: 15, 16, 17, 24, 25, 26, 27). The surgical technique was performed in flapless mode with the use of a mucotome and a first drill (2 mm of diameter), in order to perforate the sinus cortex and then inject the APAG gel. No implant was lost during the follow-up period of 6 months and all implants were then prosthetically loaded.
Results: the average bone gain was 4.43 mm. Analyzing the data considering the sex, implants in women had an average gain of 4.66 mm, while in men the average gain was 3.83 mm. Thanks to the SMS technique, we reached a reduction in postoperatory morbidity and in the frequency of Schneiderian membrane perforation.
Conclusions: maxillary sinus augmentation via the transalveolar approach has demonstrated the predictability and the fluency of the surgical procedure due to less operator-dependent processes.

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MEDICATION-RELATED OSTEONECROSIS OF THE JAWS IN OSTEOPOROSIS AFFECTED PATIENT

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Aim: the aim of this study is to demonstrate the importance of centers for osteonecrosis prevention. In our hospital clinic, we have dedicated a special assistance and care service to patients undergoing treatment with bisphosphonates and other anti-resorptive drugs.

Methods: a 77-year-old woman, referred by her dentist for a fistula in the 14-15 area, painful on palpation, noticed after the extraction of root 13, performed almost a year earlier, has been taking bisphosphonates orally since 2005 for osteoporosis. After repeated abscess episodes and cycles of antibiotic therapy without resolution of the clinical picture, she came to our attention. A CBCT was prescribed to better define the contours of a possible right jaw osteonecrotic lesion, which was later confirmed. Therefore, it was necessary to remove the bone sequestrum and extract the residual roots of 22, 23, 24, in broad-spectrum antibiotic therapy, full dosage and prolonged.

Results: at the follow-up, the site of the intervention shows good healing of the mucosa and stable oral conditions. This case demonstrates the importance of the diagnostic interception program, based on an in-depth medical history and follow-up aimed at protecting the quality of life of these delicate patients.

Conclusions: every single patient candidate for or undergoing treatment with anti-resorptive medications must be evaluated with the utmost caution, especially in the presence of systemic health disorders such as diabetes, rheumatic or autoimmune diseases, and the intake of cortisone or other drugs considered ONJ-promoting.

ULTRASONIC SURGERY: AN ALTERNATIVE TO TRADITIONAL GERMECTOMY

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Aim: ultrasonic surgery is a surgical device that allows performing simple and complex extractions in an atraumatic way as an alternative to osteotomy with conventional rotary instruments that could be invasive in several cases. The aim of this study is to evidence the benefits of ultrasonic surgery compared to the traditional one by analyzing 10 third molar split-mouth extractions. This study compares postoperative signs and symptoms after extraction of impacted mandibular third molars using ultrasonic surgery or conventional rotary osteotomy.

Methods: split-mouth germectomy in 5 pediatric patients were performed, with both traditional (C) and ultrasonic (T) surgery, two weeks apart. The following parameters were considered for each patient: intraoperative pain (VAS scale); duration of surgery; measurement of tumefaction pre-surgical and after 7 days; one-, three-, seven- and twenty-one-days postoperative pain (VAS scale) and post-surgical complications.

Results: the sample showed that the T group reported less intraoperative and postoperative pain than the C group. The duration of surgery was shorter on average in the T group. There were no significant differences between the T and C groups for postoperative complications.

Conclusions: complete recoveries without any complication were reported in all patients at the T sites. The beneficial postoperative signs and symptoms make ultrasonic surgery a favorable therapeutic option; it allows a cleaner, simpler and less traumatic surgery than the traditional one. The only disadvantage of the piezoelectric technique was the length of operation time.

MINI SINUS LIFT: RADIOGRAPHIC COMPARISON BETWEEN SUMMERS TECHNIQUE AND MAGNETO-DYNAMICS

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Aim: the magneto-dynamic technique's promise is mini-invasiveness, predictability and standardization in surgical procedures. The aim of the study is to verify these characteristics into the transcrestal mini sinus lift, comparing it with the traditional Summers technique.

Methods: 12 patients were divided into 2 groups: in the test group of 6 patients magneto-dynamic osteotomes were used; Summers osteotomes and a surgical hammer were used in the control group of 6 patients. In both, a truncated cone or root form implant was placed at the same time as the mini-elevation procedure. Through dental x-rays, the volume's maintenance of the bone augmentation compared to the pre-operative residual bone (T0) was evaluated through two following measurements: in the immediate post-operative period (T1) and at 4 months (T2).

Results: from the difference in bone height at T0 and at T2, an average increase of 3.39±0.96 mm is detected for the first technique and 3.42±0.85 mm for the second. From the difference in bone height in T1 and T2, we detect an average bone remodeling of 0.66±0.42 mm for the first technique and 0.85±0.33 mm for the traditional technique. There is a similarity in the results.

Conclusions: the superimpositions of techniques can be affirmed.

However, the magneto-dynamic technology clinically confers less invasiveness, a major frequency of sinus'membrane integrity, shorter treatment's duration, minor intra and post-operative complications, less post-operative pain and a decrease of the waiting time for prosthesis, from 6 to 4 months.

BONE GAIN AFTER MAXILLARY SINUS LIFT: 5-YEARS FOLLOW-UP EVALUATION OF THE GRAFT STABILITY

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Aim: the aim of this study was to evaluate, through digital radiographic measurements, the long-term changes in bone gain after maxillary sinus floor elevation surgery in order to obtain a stable and predictable volume augmentation for implant-prosthetic rehabilitation.

Methods: a retrospective study was conducted on 33 patients affected by atrophy of posterior maxilla. All patients were treated with lateral wall approach, using 100% deproteinized bovine bone mineral as graft material, with simultaneous implant placement. Panoramic radiographs were taken immediately after sinus floor augmentation procedure (t0) and after 5-years follow-up (t1). For the analysis the distance from implant platform to the apex of the grafted material in the maxillary sinus at t0 and t1 was detected (d), using a digital caliper as suggested by Hatano et al.

Results: 77 implants (length: 11 mm) were placed in patients ranged in age from 43 to 74 years. The results of this study showed a survival rate of 100% for all implants inserted. The mean change of "d" at t0 was 19.5±3.53 mm. The mean change of "d" at t1 was 18.25±4.25 mm. The mean of the difference between t1 and t0 resulted to be 1.37±0.138 mm. There was a statistically significant difference ($p < .001$) between measurements before and after sinus regenerative therapy (paired t- test).

Conclusions: these results demonstrate that the graft material remained clinically and radiographically stable after 5-years follow-up, with an average vertical resorption of 1.37±0.138 mm.

WOUND CONDITIONING WITH ENAMEL MATRIX DERIVATIVE IN TOOTH TRANSPLANTATION. A CASE REPORT

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Aim: to describe the procedures and 1-year results of autologous tooth transplantation in combination with enamel matrix derivative (EMD).

Methods: a 28 years-old male affected by stage I, grade B periodontitis presented with an unrestorable first mandibular molar (#3.6), which was programmed for extraction and replacement with #3.8. After root separation and extraction of #3.6, #3.8 was extracted and its root complex was conditioned with EMD. The tooth was immediately transplanted, stabilized with silk sutures and splinted with composite resin. Root canal treatment was performed after 6 weeks. The splint was removed after 4 months, and interdental contact points were adjusted.
The patient was recalled up to 12 months for professional plaque removal as well as clinical and radiographic assessments.

Results: postoperative healing was uneventful. Gingival inflammation and spontaneous gingival bleeding were highly prevalent in the first months and decreased thereafter. After the removal of tooth splinting, grade 2 mobility was recorded. At 7 months, mobility had decreased to + and remained stable up to 1 year. At 1 year, no signs of root resorption or ankylosis were observed, and an almost complete radiographic defect fill was evident.
At all observation intervals, probing depths never exceeded 3 mm.

Conclusions: autologous tooth transplantation in combination with EMD is a valid option for oral rehabilitation.
However, the efficacy and indications of EMD in tooth transplantation procedures remain to be defined.

EVALUATION OF BONE EXPANSION DURING IMPLANT SITE PREPARATION USING MAGNETIC MALLET®

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Aim: the purpose of the study is to evaluate the use of a magnetodynamic instrument (Magnetic Mallet®, Metaergonomica, Turbigo, Italy) to perform a horizontal bone expansion in edentulous sites that need to be rehabilitated with a dental implant.

Methods: from October 2019 to May 2022, a sample of 15 patients, 11 men and 4 women, age between 39 and 78 years, was analyzed. A total of 18 conical-shaped implants with a diameter of 3.80 mm and a length between 10 and 11.5 mm were inserted in the maxillary region in the area between the lateral incisor and the first upper molar. The patients were treated by two different surgeons.

Results: no implant failed and all of them achieved a correct osseointegration. The average pre-surgery bone thickness was 4.36+0.70 mm, it changed to 5.58+1.11 mm after using the Magnetic Mallet®, finally stabilized at 6.72+1.24 mm with the insertion of the implant. Significantly different outcomes were obtained by operators with a different learning curve.

Conclusions: at 3 months of follow-up, the Magnetic Mallet® proves to be a useful tool in the horizontal expansion of the atrophic upper jaw bone crest, along with the preparation of the implant site. A learning curve is necessary to optimize the clinical outcomes. Further studies are needed with a larger patient cohort and a longer follow-up to confirm the present results.

SIALOLITHIASIS OF WHARTON'S DUCT

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Aim: this case report describes clinical evaluation and surgical treatment of sialolithiasis of Wharton's duct.

Methods: a 48-years old no-smoker woman referred to the Oral Surgery unit of Odontostomatology II complaining about pain and swelling under her tongue, exacerbated with eating. Clinical examination revealed normal anatomical structures, except for a hard and painful at palpation mass, floating on the floor of her mouth. X-rays and US exam showed an ovoid mass located in the depth of soft tissues upon mylohyoid muscles. On local anesthesia, exploratory surgery, sialolithectomy and sialodochoplasty were performed. On a 1-week follow-up, pain and swelling were absent. Compression of the salivary gland revealed the correct salivary flow.

Results: laboratory examination confirmed clinical diagnosis of sialolithiasis of Wharton's duct.

Conclusions: sialolithiasis is a common disease, representing approximately one-half of benign salivary gland careful anamnesis, physical examination and imaging techniques are important in the diagnosis of sialolithiasis. The management can be both medical and surgical. Stone removal may be complicated by trauma to the duct and associated sublingual glands (increasing the risk of formation of retention cysts) therefore, surgical treatment should be accurate. Other diseases may affect the salivary glands and must be distinguished from sialolithiasis. These include infections, inflammatory conditions, and masses, including neoplasms.

ASSOCIATION BETWEEN COMMON IL-1α AND IL-β POLYMORPHISMS AND EARLY FAILURE OF OSSEOINTEGRAT

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Aim: interleukin-1 is a pro-inflammatory cytokine indispensable for host immune response and bone metabolism during dental implant osseointegration. The aim of this systematic review and meta-analysis was to identify the possible association between common polymorphisms of the IL-1a and IL-1b genes and complications of osseointegration, that is implant failure and early crestal bone loss in healing period.

Methods: an electronic search was conducted on various databases using the following search string: (Dental OR Oral) AND (Implants *) AND (gene polymorphism OR genotype) AND (IL-1 OR ILs) AND (failure implant complications OR implant loss OR marginal bone loss).

Statistical analysis used: Odds ratios (ORs) and corresponding 95% confidence intervals (CI) were calculated for each polymorphism in different genetic models, or the TT genotype alone was studied.

Results: after the elimination of the duplicates, 34 articles remained, and for first, the title and the abstract were read considering the eligibility criteria. 12 articles were analyzed in the entire full-text and finally 7 studies were included that investigate the association of polymorphisms IL-1α C-889T, IL-1β C + 3954T and C-511T with early implant failure / loss or early marginal bone loss.

The results of the ILα-1 -889 and IL-1β +3954 gene did not reveal significant associations between any genotype of these genes with the risk of complications in osseointegration of the implants. Forest plot that compares the C-511T polymorphism revealed a significant association between the TT genotype and an increased risk of marginal bone loss during healing.

Conclusions: the association with early implantation loss did not yield any significant results and in general studies elaborated according to this type of outcome tend to contain various disturbing factors and to further invalidate the results. More prospective studies with a higher number of participants are needed.

EXTRACTION SOCKET PRESERVATION USING GROWTH FACTORS AND STEM CELLS: A SYSTEMATIC REVIEW

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Aim: the aim of this systematic review is to evaluate the reported literature on the use of stem cells or growth factors for post-extraction treatment of alveolar bone.

Methods: the search was conducted on various computer databases such as PubMed, Scopus, Cochrane and Embase, through the search string: “extraction socket” OR “extraction socket” AND “growth factors” OR “extraction socket” AND “stem cells” OR “extraction socket” AND “mesenchymal stem cells” OR “alveolar ridge preservation” OR “alveolar ridge preservation” AND “stem cells” OR “alveolar ridge preservation” AND “mesenchymal stem cells” OR “socket preservation” OR “stem cells” OR “socket preservation” AND “mesenchymal stem cells”. In order to identify clinical studies reporting the clinical, radiographical, and/or histological outcomes of socket preservation techniques after applying mesenchymal stem cells or growth factors.

Results: seventeen studies were identified fulfilling the inclusion criteria. Of these, 10 studies were on the use of rhBMP-2 (human recombinant morphogenetic protein), 1 study on growth factors (CGFs), 1 study on rhPDG-BB (human recombinant platelet derived growth factor) or PRP, and 5 on stem cells applied in the post extraction socket. The meta analysis considers only those studies evaluating changes in width and height following the use of rhBMP-2. Relative to the first outcome “reduction in alveolar ridge width” an SMD of 0.72 was estimated with 95% IC and SD (0.30-1.15) p value 0.0009. In contrast, a SMD 0.65 95% IC and SD (0.16-0.14) p value 0.009 was estimated for the second outcome “reduction in alveolar ridge height”. The insertion of rhMBP-2 into the post extraction alveolus allows greater preservation of post extraction alveolus width and height. Conversely, in the variably represented control groups, the reduction in width and height is greater.

Conclusions: the use of mesenchymal stem cells or bioactive osteogenic molecules promotes bone regeneration after tooth extraction as evaluated clinically, radiographically and histologically. However specific differences that support particular recommendations are still unclear in light of the current published evidence. Future studies should include the standardization of the mesenchymal stem cell selection and purification as well as dosage and delivery methods of bioactive molecules.

RARE CASE OF SOLITARY BONE CYST OF THE UPPER JAW: A CASE REPORT

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Aim: this case report describes the diagnostic process and the surgical treatment of a solitary bone cyst of the maxilla. In addition, we aimed to verify the bone healing of the surgical site supported by PRF (platelet-rich fibrin), 12 months after the enucleation of the lesion.

Methods: a 59-year-old patient, with no significant systemic pathologies, came to our attention with a large osteolytic lesion of the upper jaw. Surgical enucleation of the lesion was performed under general anesthesia, followed by primary wound closure of the access flaps.

The residual cavity was filled with PRF from a sample of the patient’s blood.

Results: the postoperative course was uneventful, without significant complications. After 12 months, a three-dimensional radiographic evaluation showed complete restoration of bone architecture in the surgical site and no sign of recurrence of the lesion. Pulp vitality was preserved for all the elements adjacent to the enucleated lesion.

Conclusions: the outcomes of this clinical case suggest that the clot formation, the support of both the flap and the clot with palatal plate, and the enrichment of the clot with PRF promote good healing and re-ossification of bone cavities, even after enucleation of large lesions. Noteworthy is also the rarity of the location of the solitary cyst.

FLAP TUNNELING TECHNIQUE IN BONE REGENERATION: REVIEW OF THE LITERATURE

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Aim: techniques for bone augmentation are often associated with adverse events and patient discomfort. In order to overcome them, a subperiosteal approach, the tunnel technique, has been proposed. The aim of this work is to compare this technique to traditional ones in terms of complications and PROMs.

Methods: two electronic databases (Medline, Embase) were screened for articles focused on the tunnel technique for alveolar bone regeneration published in English up to 2nd March 2023. Mesh terms were tunnelORtunnelingANDoral, (Minimally invasiveORmini invasive)AND(alveolar ridgeORsinus liftORbone regeneration)ANDoral. Data regarding postoperative complications and PROMs were extracted and analyzed.

Results: four papers out of 1613 were eligible, including 203 patients (96 tests, 106 controls). The mean follow-up ranged between 6 and 30 months after bone regeneration. All patients were evaluated for implant placement. The main complication was dehiscence in both groups. Complications seem to be lower for the tunnel approach (dehiscence 9.3% *vs* 29.2%). A trend was observed in terms of graft loss reduction (5.1% *vs* 11.3%). No differences in neurological and infectious complications and no PROMs data were found.

Conclusions: the tunnel technique can be considered a safe approach for bone augmentation, presenting a reduced complication rate compared to other flap designs. Well-designed clinical trials investigating patients' experience are recommended. Finally, considering the relative complexity of the technique, future investigations should evaluate the surgeons learning curve.

DENTAL MANDIBULAR AVULSION WITH MAGNETO-DYNAMIC TECHNIQUE: PRESENTATION OF A CASUISTRY

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Aim: evaluating magneto-dynamic technique in dental mandibular extractions aiming to preserving the alveolar bone in view of a prosthetic implant replacement.

Methods: the device used for all extractions is Magnetic Mallet, modern instrument proposed to facilitate tooth extractions and limiting the patient's discomfort.

Teeth, selected using randomized method, are hopeless mandibular teeth from 41 different patients. After a longitudinal dislocation all around the tooth with Magnetic Mallet and forceps 69 mandibular teeth were extracted. Patients have been recalled at 7 and 21 days from extraction evaluating clinically and through intraoral x Ray examination the healing process.

Results: all the teeth analyzed were extracted. The 26% of the cases the tooth was ankylosed: in the extraction none had needed osteotomy or odontotomy, but just using Magnetic Mallet and sometimes forceps.

About 60% of teeth were dislocated just using the instrument inclination of 0° (or 180°) that is parallel to the tooth axis, while in the other cases was necessary changing the inclination from 0 to 45°.

At 21st day from extraction was possible observing clinically and radiographically an effective process healing with a good alveolar preserving.

Conclusions: the results show that the use of the Magnetic Mallet is an efficient alternative for mandibular dental extractions compared to traditional methods using elevators and forceps, making tooth dislocation easier and improving post-extraction healing.

A NEW TECHNIQUE FOR LATERAL SINUS LIFT: "SINUS PACK"

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Aim: the outcome was to evaluate the vertical bone gain obtained with the "sinus pack" technique which involves the insertion of biomaterial wrapped in a resorbable collagen membrane.

Methods: this retrospective study evaluates vertical bone gain, comparing measurements at baseline and after 12 months, in 19 patients in whom lateral sinus lift was performed with the "sinus pack" technique. To be included in this study was required <5 mm of residual crestal bone height below the floor of the sinus and patients had to have no contraindications to the surgery. All patients had preoperative and 12 months postoperative CBCT.

Results: patients preoperatively had a mean bone ridge height of 3.03 mm±0.92 mm and was observed, after 12 months, a vertical bone gain of 8.8±0.9 mm using the sinus pack technique. By histomorphometric analysis of the regenerated bone tissue was found a percentage of viable bone of 44.5%±19.8%. The results obtained are comparable to those obtained with other sinus lift techniques.

Conclusions: a possible explanation of the greater amount of bone present using porcine grafts in Sinus Pack Technique may be that the membrane acted to better contain and immobilize the graft particles during the bone healing phase and the GTO porcine graft, thanks to the presence of copolymers that make it compact at body temperature, remains stable without undergoing micromovements. For this reason, this technique can also be used in the case of Schneiderian membrane perforation.

PREVENTIVE DENTAL PROCEDURES IN PATIENTS AT RISK FOR MRONJ: A RETROSPECTIVE ANALYSIS

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Aim: Medication-Related Osteonecrosis of the jaws (MRONJ) is a serious adverse drug reaction in patients taking bone modifying agents, and major clinical research efforts are dedicated to the development of effective preventive measures and protocols. The purpose of this retrospective study is to evaluate the preventive oral examination and treatments, as well as follow-up therapies performed and their effect on MRONJ risk.

Methods: the study included patients who underwent a preliminary examination and any preventive dental therapies before starting with a drug therapy at risk for MRONJ development (bisphosphonates or denosumab). Patients with previous radiotherapy of the head/neck region were excluded.

Results: 20 patients were included in the retrospective analysis. Patients were treated according to a complete (50%), partial (30%) or non-necessary (20%) preventive protocol. Among the 12 (60%) who underwent preventive extractions, one patient developed MRONJ following post-extraction waiting time of 2 weeks. Most of the teeth were extracted due to endodontic infections (40%), followed by periodontal disease (25%) and non-restorable caries (10%).

Conclusions: maintenance of oral health is not questionable, in particular through the elimination of infectious-inflammatory foci through both surgical and non-surgical therapies. From literature reviews, the time between preventive extractions and initiation of risk therapy seems to be of crucial importance in minimizing the risk of early onset of MRONJ. From the data analyzed, it can be inferred that the time between the last extraction and the start of risk drug therapy is of crucial importance in reducing the risk of disease onset. Despite the limited number of subjects, our results confirm this hypothesis and suggest further investigation to define clearly preventive surgical dental protocols.

RESTORATION OF BONE DEFECT BY GBR TECHNIQUE: THE USE OF CGF AND MELATONIN. A CASE REPORT

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Aim: the aim of this case report is to demonstrate how concentrated growth factors (CGF), a novel generation of autologous platelet concentrate, melatonin and endogenous indoleamine with also bone regenerative characteristics, may be useful for reconstruction of bony defects and esthetic rehabilitation without any complications as well as pain and swelling of perioral soft tissues.
Methods: we report a clinical case of a female patient with substantial bone defect in both dental arches. GBR surgery combining with CGF isolated by blood sample, melatonin and heterologous biomaterial was used to restore defect.
Results: excellent postoperative recovery without any complications was reported. The clinical and radiographic evaluations 5 days after surgery showed significant bone regeneration. In detail, the surgical-treated area presented appropriate bone density and volume that guarantee implants stability. Interestingly, there were no infectious episodes and no other adverse complications during the monitoring postoperative period. The postoperative healing response at the surgical-treated sites was excellent, and the patient reported a good recovery without discomfort or inconvenience in the quality of life.
Conclusions: this is an impact clinical report that used CGF plus melatonin-based scaffold in GBR surgery holding a promising outcome in tissue regeneration applications and restorative dentistry. This protocol may have important roles also in improving implant osteointegration and, not less important, in preventing postoperative complications.

REGENERATION OF SEVERELY ATROPHIC JAWS WITH TITANIUM REINFORCED E-PTFE MEMBRANES

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Aim: the aim of this study was to retrospectively evaluate the effectiveness of titanium reinforced e-PTFE membranes in association with autogenous bone and bovine bone mineral particles for guided bone regeneration (GBR) of vertically deficient edentulous ridges.
Methods: the procedure consisted of: a) bone harvesting from the mandibular ramus with a bone scraper; b) correction of the initial defect with a 50:50 mixture of bone particles and bovine bone mineral and stabilization of intraoperatively modelled titanium reinforced e-PTFE membranes with titanium microscrews or tacks; c) hermetic suture of the previously released flaps. After 7 to 9 months, membranes were removed, and implants placed in the regenerated areas. Fixed Prosthetic restoration started 3 to 5 months later.
Results: in total, 12 patients (1 male, 11 females, aged 22-76 years), requiring an implant-supported rehabilitation were treated with GBR and received in a second stage 29 dental implants. Two patients had a membrane exposure (16.6%) but without failure of the GBR procedure. All planned implants (29) were placed as initially designed. No other complications occurred during the follow-up (3 to 15 years) with an implant survival rate of 100%.
Conclusions: data from this study seem to confirm that vertical GBR with titanium reinforced e-PTFE membranes is an effective method to allow fixed implant-supported restorations in initially severely vertically atrophied edentulous ridges. However, it must be underlined that complication rate is not negligible and success of the procedure is technique-sensitive.

DECOMPRESSION ON ODONTOGENIC CYST IN PEDIATRIC PATIENT: IS TIME AN ALLY?

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Aim: odontogenic cysts are epithelial-lined pathologic cavities, they are divided into two groups: the inflammatory and the developmental one. Although these cysts occur more frequently during the second and third decades of life, they can also be found in children and adolescents in the mixed dentition stage. The aim of this study is to show a case of dentigerous cyst managed within our clinic in pediatric patient.

Methods: a twelve-year-old patient was referred to our clinic by her dentist with the chief complaint of a tumefaction localized in the right side of the mandible. The intraoral examination showed the presence of a mixed dentition, with the absence of the element 44.

We decided to deepen the diagnosis through radiological exams that revealed the presence of an osteolytic lesion evolving from the crown of the impacted tooth 44 and displacing the root of the tooth 45 and the correlation between the lesion and the inferior alveolar nerve.

Due to the clinical and radiological findings an incisional biopsy was performed and the diagnosis of dentigerous cyst was made.

Results: the patient undergoes on a follow up program to see how the lesion evolve. OPT exams were made at 3,6,12 months that showed a complete healing of the bone and the eruption of the tooth 44.

Conclusions: this case show that decompression of the lesion could lead to success in correlation with time to treat large dentigerous cysts in pediatric patients. Several authors have reported excellent results by this technique. However, the follow-up of the patient should be done until the complete eruption of permanent teeth in their right location in the oral cavity.

MICROLEAKAGE AND FATIGUE STRENGTH OF CONICAL *VS* INTERNAL HEXAGON IMPLANT: *IN VITRO* STUDY

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Aim: the aim of the present study was to evaluate through an *in vitro* standardized cyclic loading simulation the micro-leakage of conical regular (CS) and internal hexagon (IH) dental implant abutment-joint interfaces.

Methods: a cyclic loading test was conducted on different dental implant prosthetic joint: CS group (diameter 4 mm- length 10 mm) and IH connection (diameter 4 mm- length 10 mm).

The mechanical behavior and the microleakage was evaluated at the end of the cyclic test.

Results: after a total of $5x10^4$ cyclic loading, the prosthetic screw has been removed. The CS group abutments appeared stable while the 5 samples of IH implants were stable.

No microleakage of CS implants was detected, while the IH group was positive to the paper cone test.

Conclusions: the study data showed that conical abutment-joint interface reported a higher stability compared to the internal hexagon connection avoiding microleakage. This prosthetic connection could take a significant advantage for a more useful and durability of dental implant rehabilitation in the clinical practice.

TREATMENT OF ORO-ANTRAL COMMUNICATION: A COMPARISON OF SURGICAL TECHNIQUES

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Aim: the objective is to evaluate the effectiveness of different interventions for the treatment of oral-antral communication of odontogenic origin.

Methods: for this systematic review, the following inclusion criteria have been applied: RCTs without language restriction were considered in which oro-antral communication was treated by the technique involving buccal mucosal flap or Bichat's bubble closure in which the success of COA closure was evaluated.

In addition, an electronic search was conducted on the following databases: PubMed, Cochrane Library and Embase, through the search string: "Oro-antral communication OR oro-antral fistula OR oro sinusal AND Buccal Fat Pad AND Buccal Flap" and five articles with a total of 118 patients were included.

Results: the Odds Ratio was assessed, i.e. the ratio of the probability of the event (success of the intervention) occurring in the group of patients in which the buccal flap was used or in the group of patients in which the buccal fat pad was used. The value obtained was 0.29[0.04, 2.08]. The Odds Ratio value of less than 1 associated with the buccal flap technique establishes an albeit minimal inferiority in terms of the number of associated successes.

Conclusions: there is no statistically significant difference between the two techniques, so new large- scale RCTs, analyzing the two types of interventions are needed.

INTRAORAL GIANT CELL LESIONS AND HYPERPARATHYROIDISM: AN ALERT FOR ORAL SURGEONS

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Aim: this retrospective case series aims to alert oral surgeons about the intraoral giant cell lesions associated with hyperparathyroidism.

Methods: this study included patients with intraoral giant cell lesions referred to the Unit of Odontostomatology of Aldo Moro University of Bari from 2017 to 2022. Patients with intraosseous lesions underwent panoramic radiograms and computed tomography, and those with peripheral lesions underwent magnetic resonance imaging. All patients underwent excision of the lesions followed by a histological exam. After the diagnosis of giant cell lesions, all patients underwent the screening of the concentration of the parathyroid hormone, serum calcium, phosphate, and alkaline phosphatase to assess the parathyroid function. Patients with hyperparathyroidism underwent further endocrinological and/or surgical assessment to receive the treatment. The clinical and radiographic follow-ups occurred every 6 months.

Results: 8 men and 8 women (mean age 46 years) showed 12 mandibular and 4 maxillary lesions. 4 were central giant cell lesions, 1 lesion was an aneurismal bone cyst, 4 were brown tumors, and 7 were peripheral giant cell lesions. 4 patients showed serology of hyperparathyroidism and received proper treatment. No recurrences or metachronal lesions occurred during the up to 5 years follow-up period.

Conclusions: the results suggest oral surgeons be aware of hyperparathyroidism as a systemic cause of giant cell diseases to prevent the occurrence of related metachronal lesions and/or recurrences.

MICROSCOPICAL ANALYSIS OF EXPLANTED TITANIUM ALLOY CUSTOMISED MESHES FOR BONE AUGMENTATION

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Aim: one of the most common complications is exposure during the healing time, but no studies have yet investigated whether the sudden variations of the oral pH may affect the surface and the internal structure. The aim of this study is to analyse the surface and the internal structure of explanted devices produced by different manufacturers.

Methods: 16 samples were received in the laboratory after the explanation and prepared for analysis in epoxidic resin and observed with Scanning Electronic Microscopy, both on the surface and in the margin immediately after fracture. A further investigation was also made by means of Specific Energy-dispersive X-ray spectroscopy.

Results: the analysis was conducted on a total of sixteen samples (8 from BTK and 8 from Bone Easy). The profile analysis of the upper and lower faces revealed that the superficial defects extended inside the device and the X-ray spectroscopy showed the presence of carbon in the margins. In particular the device from Bone Easy shows numerous small defects, ranging between 2 µm and 15 µm, while the device from BTK presents less and more regular defects with an average diameter of 20 µm.

Conclusions: in this study the presence of carbon was observed inside the devices together with several internal structural defects on all the examined samples. Based on these preliminary findings, it can be concluded that some issues are referred to the alloy powder composition as well as to the additive manufacturing fabrication process. Nevertheless, these devices should be carefully evaluated by the clinicians and until more evidence is available, they should be considered with precautions.

PLATELET-RICH FIBRIN IN CONTROL OF PAIN IN ALVEOLAR OSTEITIS: A SCOPING REVIEW

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Aim: the aim of this scoping review was to evaluate the effectiveness of the platelet-rich fibrin in control of pain associated with alveolar osteitis.

Methods: reporting was based on Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Extension for Scoping Reviews. A literature search was conducted in the PubMed and Scopus databases to retrieve all clinical studies on the application of platelet-rich fibrin in control of pain caused by alveolar osteitis. Data were extracted independently by two reviewers and qualitatively described.

Results: the initial search retrieved 81 articles, with 49 after duplicates removal; of these, 8 were selected according to the inclusion criteria. Three of eight studies were randomized controlled clinical trials, four non-randomized clinical studies, two of which controlled. One study was case series. In all of these studies, pain control was evaluated using the visual analogue scale. Overall, the use of platelet-rich fibrin resulted effective in control of pain determined by alveolar osteitis.

Conclusions: within the limits of the included studies, the application of platelet-rich fibrin in the post-extra-extraction alveolus reduced the pain associated with alveolar osteitis in almost all the included studies. Nevertheless, high-quality randomized trials with adequate sample size are necessary for drawing firm conclusions.

HYPNOTIC FOCUSED ANALGESIA FOR MULTIPLE TOOTH EXTRACTIONS: A CASE REPORT

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Aim: the aim of this study is to describe the efficiency of hypnosis as a powerful non-pharmacological tool in an extreme case of a patient affected by multiple disorders, which made it impossible to use local anesthetics.

Methods: due to her systemic conditions such as deficiency of cytochrome P450 enzyme, numerous anaphylactic shocks, Addison's disease, thrombophilia, epilepsy, multiple allergies to drugs, asthma, insulin resistance and toxic encephalopathy, a 48-year-old female (ASA IV) could not intake any local anesthetic or painkillers.

Patient had previously experienced hypnotic focused analgesia for skin tumor removal surgery and wisdom tooth extraction several years ago.

Exclusively through the voice of an expert hypnotist (anesthesiologist and neurologist), the patient was guided to obtain local anesthesia, sedation, and pain control as she underwent tooth extraction of first and second left upper molars in absence of any local anesthetic.

Results: both teeth were surgically extracted prior incision, osteotomy and odontotomy. During the whole procedure all vital parameters were monitored: blood pressure remained stable (mean 135/85 mmHg), heart frequency ranged between 80-100 bpm and SpO_2 between 98-100%.

Conclusions: this study confirms data already available in Literature about hypnosis as an alternative to pharmacological tools, in cases when pharmacological anesthesia is precluded.

DIGITAL VISUALIZATION OF THE INFERIOR ALVEOLAR NERVE IN LOWER THIRD MOLAR EXTRACTION

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Aim: injury to the inferior alveolar nerve (IAN), is a rare but serious complication that can occur during mandibular third molar surgery. Proper preoperative radiologic assessment is hence key to avoiding neurosensory dysfunction. The aim of this study is to evaluate the benefits of a CBCT's tridimensional reconstruction through the use of freeware and open-source software: 3D Slicer.

Methods: in order to obtain a 3D model of the anatomical structures, the CBCT's DICOM files were imported into 3D Slicer. The reconstructions were obtained using the module "segmentation editor", in particular, the wisdom teeth were segmented through the function "grow from seeds", the IANs through the function "Draw tube" and the mandible through "threshold".

Results: the nerve was highlighted and it was possible to see every relationship between the inferior alveolar nerve and the third molar in all three dimensions of the space.

Conclusions: the segmentation allows accurate visualization of the IAN and clarifies its relationship with the tooth's roots. This aspect may help the surgeon in planning and thereby may reduce complications during dentoalveolar surgical interventions. Furthermore, the reconstruction offers a second advantage that cannot be taken for granted: a clear and understandable visualization for the patient, making him more aware of possible complications in the case of nerve involvement at the time of signing the informed consent.

REVERSE GUIDED BONE REGENERATION FOR TREATMENT OF JAWS ATROPHIES: A PROOF OF CONCEPT

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Aim: the purpose of this study is preliminarily evaluating the effectiveness of a new design customized titanium non-absorbable occlusive membrane realized with a prosthetically guided procedure.

Methods: 12 partially edentulous patients, requiring 1 to 3 implants, with a Seibert class II or III were enrolled. 8 patients were treated for a mandibular atrophy and 4 patients for a maxillary atrophy. A CBCT scan and a virtual digital impression of soft tissue were made and matched to obtain a 3D virtual model of the jaw. Digital wax-up of the rehabilitation in occlusion with the antagonistic dental arch was made, from which implant planning was carried out. The length of the implants was chosen to obtain a clinically achievable bone reconstruction: no more than 7-8 mm vertically. Bone reconstruction was virtually simulated, and the customized titanium plate was shaped on the virtual model to fit the jaw.

Results: postoperative complication and the absence of exposure of the membrane were evaluated during the follow-up period. One Ti-membrane was removed at 3 months and one at 4 months due to a soft tissue dehiscence. The mean deviation between the planning of the grid and its actual position obtained through post-op CBCT was of 0.50±0.51 mm. The mean of reconstructed bone obtained was 1676,44 mm^3.

Conclusions: this method has given encouraging results, which push us to carry on the research. Subsequent studies are necessary to evaluate the accuracy, predictability, and complications of the method, as well as the possibility of the increase and quality of the newly formed bone.

NEW METHOD APPLICABLE TO DENTAL EXTRACTIONS: EVALUATION OF PATIENT COMFORT

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Aim: the Magnetic Mallet® is a new method, which exploits magneto-dynamic impulses, which can be used in extraction surgery with the aim of best preserving the alveolus during avulsion. The aim of this study is to evaluate the patient's postoperative pain after dental extraction performed with this instrumentation.

Methods: 120 teeth considered "hopeless" after clinical and radiographic evaluation of 76 patients were extracted with the Magnetic Mallet®. Patients with medium-high risk (ASA-3 and ASA-4) and undergoing chronic therapy with NSAIDs were excluded from the study. After the avulsion, the patient was asked to quantify the pain and report it on the appropriate NPRS scale; moreover, he was required to register it at home in the following 24 and 72 hours. During the professional follow-ups at 7 and 21 days the perceived pain was re-registered.

Results: the data obtained report an average pain level immediately after extraction of 1.35±2.09, at 24 hours and at 72 hours of 3.4±2.95 and 2.29±2.51 respectively and 0.86±1,70 at 7 days. At 21 days, the mean pain value was 0.08±0.35.

Conclusions: the data obtained showed average pain values contained and potentially better than the traditional technique, demonstrating that the tooth extraction procedure with the magneto-dynamic technique is well tolerated by the patient. Split-mouth RCTs will be needed in the near future to evaluate these positive preliminary data.

EX-VIVO ANALYSIS OF CRACKS AND ROOT-END PREPARATION WITH PIEZOELECTRIC INSTRUMENTS

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Aim: the primary aim of this *ex vivo* study was to verify a correlation between ultrasonic root-end preparation and the formation of cracks.

Methods: the study was conducted on human teeth, extracted for periodontal reasons. After root canal treatment, roots were resected 3 mm from the anatomical apex by using a high-speed handpiece and carbide burs. The resected teeth were retro-prepared by using an ultrasonic tip (R1D, Piezomed, W&H, Bürmoos, Austria), setting the piezoelectric device at maximum power available for the tip. Time required for the retro-preparation was recorded. Before and after retro-preparation, all roots were photographed under a stereomicroscope and analyzed by two different operators to evaluate: (a) the presence and extension of dentinal cracks and (b) the morphology of root-end preparation. Finally, piezoelectric tips were analyzed by scanning electron microscopy (SEM) to evaluate morphologic changes after use.

Results: a total of 43 single roots (33 with one root canal, 10 with two root canals) were treated. Average preparation time was 1 minute and 54 seconds. None of the roots without initial cracks developed new cracks after retro-preparation. Quality of the preparation margins was fairly equal among the prepared specimens. None of the piezoelectric tips broke during instrumentation, and SEM analysis showed minimal surface wear of the tips after performing 11 retro-preparations.

Conclusions: within the limits of the present study, the tested piezoelectric system did not seem to represent a major cause for root crack formation. Pre-existing cracks may expand after ultrasound root-end preparation.

A MINIMALLY INVASIVE INTRAORAL APPROACH TO TREAT ODONTOGENIC MAXILLARY SINUSITIS

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Aim: the authors report their experience in managing odontogenic sinusitis with a minimally invasive intraoral surgical approach, as an alternative to Caldwell-Luc procedure or functional endoscopic sinus surgery (FESS).

Methods: the procedure, performed under local anesthesia, consisted of the removal of the odontogenic etiologic factor of sinusitis (endodontically or periodontally irreversibly compromised teeth, infected implants penetrated into the sinus, failure of sinus lift procedures) and the drainage of the purulent material through the alveolar crest. The maintenance of an intra-oral drainage until healing was confirmed by a CBCT. At that time, the drainage was removed.

Results: 14 patients (7 males, 7 females; aged 22-80 years) were successfully treated with this approach. After drainage removal, a spontaneous closure of the oro-antral comunication occurred in 12 patients, while in 2 patients the residual oro-antral communication was closed under local anesthesia with a buccal mucoperiosteal flap (Rehrmann flap).

Conclusions: results from this study (100% healing with no sequelae) seem to demonstrate that the minimally invasive intraoral approach here described to treat odontogenic sinusitis can be a successful alternative to more complex procedures such as the Caldwell-Luc approach and FESS. As compared to these latter, the described approach can be performed under local anesthesia on an outpatient basis, while the other procedures often need hospitalisation and sedation/general anesthesia.

AUTO-TRANSPLANTATION OF 2.8 IN AREA 1.6 AFTER CREATION OF THE ALVEOLAR SITE AND SINUS LIFT

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Aim: auto-transplantation is the transferring of an included, impacted or erupted tooth to an edentulous site in the same individual. The aim of the study is to describe the operative phases of the auto-transplantation technique of tooth 2.8 in area 1.6, after creating the recipient site ex-novo and performing the sinus lift.

Methods: it has been described a clinical case of a 56-year-old male patient with severly periodontal compromised tooth #2.8 and absence of #16 in arch. OPT revealed insufficient vertical height of the alveolar crest in area 1.6, so the sinus lift contextual to the creation of the receiving alveolus was necessary. The surgical procedure, performed under antibiotic therapy, involved the creation of the new alveolar site with a Trephine bur on an implant motor, sinus floor fracture and compaction with Summers osteotomes through a variation of the Ebanist's technique. After the extraction of #2.8, apicectomy and bioceramic application were performed. It was stabilized in infra-occlusion within the site through a steel braided metal ligature (0.10).

Results: at the end of the treatment, a successful sinus lift, without perforation of the Schneider's membrane, and stability of the transplanted element were achieved. Both clinical and radiographic results were considered satisfactory at 3 weeks postoperatively. Then the removal of the splint was conducted.

Conclusions: the stability of the transplant element and the choice of inlay rehabilitation confirm the auto-transplantation technique as a valid alternative to other complex implant-prosthetic treatments.

ANTIBIOTIC PROPHYLAXIS IN SWI PREVENTION, IN CASE OF MANDIBULAR THIRD MOLAR SURGERIES

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Aim: the aim of the present systematic review and meta-analysis is to evaluate the efficacy of antibiotic prophylaxis procedure, in the clinical management of mandibular third molar extraction, in order to prevent surgical wound infections (SWI).

Methods: both electronical and manual searches were carried out on online databases and paper journals. Two calibrated reviewers performed the search and selected the studies. The main outcome investigated was SWI. Studies related to antibiotic type and administration method from fixed and random models were analyzed. Surgical difficulty, whenever specified, was additionally examined.

Results: the 2726 surgeries performed in the 15 studies included in this review, (moderate degree of heterogenicity, with a $p < 0.1$), demonstrated that SWI can be prevented with antibiotic prophylaxis (RR = 0.29, heterogenicity = 0), specifically if administrated pre-surgically and when osteotomy is performed (heterogenicity = 0, NNT = 28). However, the literature doesn't fully support post-surgical antibiotic administration. Pre-surgical prophylaxis has been shown to be equally effective compared to pre- and post-surgical prophylaxis. In case of odontotomy, literature data have not demonstrated an advantage associated with the administration of antibiotic prophylaxis.

Conclusions: pre-surgical antibiotic prophylaxis appears to be an effective procedure in mandibular third molar surgeries, not only to prevent SWI, but also to lower: the amount of antibiotic administered, the risk of antibiotic resistance and the onset of other side effects.

VERTICAL BONE DEFECT MANAGEMENT - CASE REPORT

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Aim: the aim of this case report is to present the use of the modified minimally invasive surgery technique (M-MIST) with the concomitant use of biomaterials for the treatment of a vertical bone defect.

Methods: a patient with periodontal disease was treated with causal therapy, and after 6 months, the patient presented with a probing depth of 8 mm, which was not compatible with maintainability.

The patient underwent a regenerative surgical procedure using the M-MIST technique.

A flap was designed, and the micro-flap was raised using microscalers to access the defect. The defect was carefully treated and filled with deproteinized bovine bone.

To achieve primary closure, a Gottlow suture was performed using Prolene 6/0.

Results: the use of the M-MIST technique allowed for conservative treatment, resulting in reduced healing times and excellent aesthetic results. The M-MIST technique may not be applicable in cases where the infra-osseous defect extends to the lingual aspect, making the MIST technique the preferred choice for treatment.

Conclusions: the M-MIST technique is a minimally invasive and effective surgical option for treating vertical bone defects when combined with the use of biomaterials. The limited access to the defect requires the use of specialized instruments and sutures for optimal outcomes.

REVIEW OF NATURAL AND SYNTHETIC POLYMER IN BONE TISSUE REGENERATION WITH 3D PRINTING

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Aim: supporting the regeneration process of bone tissue at the defect site and eventually degrading in situ to be replaced by next-generation bone tissue is the goal of the ideal biomaterial. Nanocomposite biomaterials are a relatively new class of materials that incorporate a biopolymer and biodegradable matrix structure with bioactive and easily resorbable fillers of nanometer (<100 nm) size.

Methods: this article is a review of some polymeric nanocomposite biomaterials that are candidates for bone tissue regeneration.

These nanocomposites are classified into two groups: natural and synthetic polymers. Natural polymer-based nanocomposites include materials made on the basis of a natural matrix reinforced with nanoparticles or nanofibers. Several natural biopolymers widely used in the literature, chitosan (CS), collagen (Col), cellulose, silk fibrin (SF), alginate and fucoidan, were examined in this work.

Synthetic polymers that were examined in this literature review include polycaprolactone (PCL), poly (lactic-co-glycolic acid) (PLGA), polyethylene glycol (PEG), poly (lactic acid) (PLA), and polyurethane (PU)-based nanocomposites. A number of nanofillers, such as nano-hydroxyapatite (nHA), nano-zirconia (nZr), nano-silica (nSi), and graphene oxide (GO), were also examined.

Results: the influence of nanofillers on cell viability, both *in vitro* and *in vivo*, along with cytocompatibility and generation of new tissues was included. In addition, the characterization of nanocomposite materials by some commonly used analytical techniques, such as electron microscopy, spectroscopy and diffraction patterns, was highlighted. The physical properties of biomaterials, such as pore size, porosity, particle size and mechanical strength, which strongly influence cell adhesion, proliferation and subsequent tissue growth, were also analyzed. Nanofillers embedded in the polymer matrix impart important properties, increasing surface area and imparting higher mechanical strength and stability, improved cell adhesion, proliferation and differentiation.

Conclusions: the selection of nanocomposites is therefore crucial in the development of new materials for bone tissue regeneration in specific bone defects such as craniofacial defects. The effects of incorporating growth factors into the nanocomposite to control the generation of new bone are also important during the biomaterial design phase.

EFFICACY OF HEMOCONCENTRATES IN PATIENTS USING ANTICOAGULANT THERAPY: A SYSTEMATIC REVIEW

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Aim: this systematic review was aimed to evaluate the evidence concerning the hemostatic effectiveness of the autologous platelet concentrates (APCs) following dental extraction in patients undergoing anticoagulant therapy.

Methods: a literature search was conducted up to the end of December 2022 on PubMed, Scopus, and Cochrane Databases. Studies related to the use of APCs in patients undergoing dental extractions and being treated with anticoagulant drugs were included. No restrictions were applied concerning the type of APCs used and all the RCT studies published until December 2022 have been included. CCTs, cross-sectional, case report/series and animal studies were excluded. Outcomes were time of bleeding or time of haemostasis, postoperative pain and healing. The methodological quality of the included RCTs was assessed using the recommended approach for assessing the risk of bias in studies included in Cochrane reviews.

Results: the search resulted in 6 papers. The findings showed that when APCs were used in patients under anticoagulant therapy without discontinuing the therapy, they exhibited significantly less postoperative bleeding, short time of haemostasias, less pain and accelerated wound healing.

The methodological quality of most of the studies was moderate.

Conclusions: since studies included in the review have shown that APCs reduce time of bleeding, we can assume that discontinuing anticoagulant drug therapy is not necessary in dental extractions. Due to the methodological quality was moderate, further studies are necessaries to confirm these results.

THE ROLE OF CGF IN PATIENTS USING NOA UNDERGOING DENTAL EXTRACTION: PILOT STUDY

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Aim: repeated suspension of anticoagulant therapy may lead to an increased risk of thrombosis, as well as uncontrolled bleeding. The aim of this pilot study is to evaluate the possible haemostatic action of concentrated growth factor (CGF) in extraction surgery on non-suspended new oral anticoagulants (NOAC) therapy patients.

Methods: patients in NOAC therapy (excluding patients in OAT) with the need for simple extraction surgical therapy were selected. For each patient, the levels of hematocrit, creatinine, type of NOAC and administration were evaluated. Before surgery, 2 blood tubes were taken (Silfradent glass tubes, PV 200R 10 ml tube) and centrifuged (MEDIFUGE MF200 CGF). The formed CGF was then inserted at the level of the post-extraction alveolus and an X-shaped suture (Vicryl 4.0) was applied. The patient remained under observation for 30 minutes, in which bleeding (mild, heavy or severe) was assessed at t0 and subsequently at 5, 10, 15 and 30 minutes. After that, it was reevaluated at 3 days, 7 days and 14 days (with related suture removal). During the first follow-up (3 days) the patient was asked if he had experienced pain, bleeding and/or swelling after surgery. Comparable probe photographs were taken to monitor socket closure at every check. Antibiotic therapy, painkillers and mouthwashes based on Chlorhexidine were prescribed. If necessary, the patient was advised to apply Tranexamic Acid.

Conclusions: all treated patients presented CGF coagulation, effective haemostasis and a normal postoperative course. Slight bleeding was observed in only 1 patient on the evening of surgery. To obtain more statistically significant results, it is necessary to increase the sample number and compare the effects of normal hemostasis procedures with the split-mouth technique.

ANATOMICAL EVALUATION OF CBCTS OF THE INTERFORAMINAL ZONE

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Aim: aim of the study was to evaluate the anterior loop of the NAI and the mental foramen to give an indication for implant planning.

Methods: 100 CBCTs from a population aged between 18 and 80 years, 42M and 57F, were analysed. Patients were classified according to age, sex, degree of edentulism. Only files with FOV 12x9 were included. Linear measurements were performed at the centre of the ridge, using the central paraxial cut. Statistics were performed using JMP Trial 14 software. The area within 2 mm of the most mesial margin of the loop or, when absent, of the chin foramen was considered "safe zone".

Results: the anterior loop was found in 71%, extending with a range 0.2 to 4.2 mm, with a mean of 1.65 mm. The safe zone measured 40.4±4.6mm and tended to increase with age. A significant inverse relationship was observed between the length of the loop and the age of the patients; fully edentulous patients had a larger safe zone than partially and fully dentulous ones. The $\chi 2$-test showed no statistically significant differences between the considered variables.

Conclusions: bone resorption caused by tooth loss and ageing leads to an increase in the interforaminal distance and a reduction of the anterior NAI loop and a lack of identifiable anatomical landmarks. Thus, there was no safe zone as in 71% of the CBCTs analysed, the loop extends from 2 mm up to 4.2 mm. In the edentulous mandible, the reference for performing the osteotomy could be the genital tubercle, a radiographic and clinical landmark since it is palpable.

ODONTOGENIC CHERATOCYST RECURRENCE: FROM CONSERVATIVE TO RADICAL APPROACH

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Aim: the odontogenic cheratocyst is a benign locally aggressive lesion of the jaws with a high recurrence rate caused by a high epithelial cellularity and mytotic activity.

Methods: in 2015, a 60 y/o female patient was referred for the presence of an asymptomatic radiolucent cistic area associated with the two upper right premolars. The lesion was enucleated together with 1st molar extraction, since the latter was structurally and endodontically compromised. The histological report was cheratocyst. While the 1st molar was replaced with an implant, the surgical area was radiographically monitored. In 2018 a new osteolitic area was found in the same site. The enucleation was therefore performed with deep bone curettage, apicectomy and retrograde filling of the two premolars. In 2021, at the annual x-ray follow-up, the lesion reappeared, thus a block resection involving the two teeth was performed. At the same surgical time the bone defect was treated with DBBM and a resorbable collagen membrane. The histologic report showed complete removal.

Results: during the clinical-radiographic follow-up, a further implant was inserted in the first premolar site by the dentist and the surgical area appeared radiographically normally ossified.

Conclusions: enucleation can be the first approach to cheratocysts. If the follow-up shows a recurrence, the treatment should be more radical including peripheral curettage and the removal of the portions of dental roots that could prevent complete enucleation. Bone resection, even if more demolitive, represents the best solution in case of recurrence.

THREE DIFFERENT TECHNIQUES COMPARED IN THE SURGERY OF LOWER THIRD MOLAR

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Aim: the purpose of this study is to compare three ostectomy techniques in the extraction of lower third molars, that are traditional technique with rotary instruments and surgical burs, piezosurgery and sonic surgery and to evaluate post- operative pain.

Methods: a total of 30 patients underwent the surgery and divided in three different groups referring the three different techniques. All interventions were carried out by the same experienced operator, who also registered intraoperative data concerning ostectomy, tooth crown and root sectioning, as well as surgical time. At the end of the surgery, every patient was given a form to be filled out over the next seven days, in which he had to report how many painkiller tablets he took for each day.

Results: the average surgical time with the traditional technique was 12.6 minutes, 22 minutes with piezosurgery and 19.83 minutes with sonic surgery. The traditional technique was found to be faster than the new techniques, which however are more respectful of the tissues and lead to less discomfort for the patient.

Conclusions: in cases of medium-low difficulty, the operating times are not more dilated with the new techniques, so in these cases one could be inclined towards these techniques. In complex cases, on the other hand, the operating times would dilate excessively, therefore the traditional technique is preferable.

TWO-STAGE APPROACH TO LARGE JAW CYSTS: A MAXILLARY CASE REPORT

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Aim: odontogenic cysts are the most frequently diagnosed lesions of the jaws. Marsupialization and cystectomy are the two treatments for the surgical approach to these pathologies. Marsupialization puts the cystic lumen in communication with the oral cavity, to reduce the intra-cystic hydrostatic pressure thus progressively decreasing the volume of the lesion. Cystectomy is the complete cyst removal, with healing by primary intention. A two-stage surgical approach to a large dentigerous cyst inside the maxillary sinus is reported here.

Methods: a 18-year-old female patient was referred to the Department of Oral and Maxillo Facial Sciences, Sapienza of Rome. The orthopantomography showed a wide radiolucent area which completely occupied the left maxillary sinus, associated with the unerupted third molar. Marsupialization was initially performed to decompress the lesion, bring the tooth closer to the occlusal plane and reduce the dimension of the cyst to allow physiological aeration of the sinus cavity. An obturator was therefore manufactured to keep surgical access open during follow-up.

After two years follow-up cystectomy was performed under general anaesthesia for both the complete removal of the cyst and the unerupted third molar.

Results: histological analysis confirmed the radiographic diagnosis of a dentigerous cyst. One year later the orthopantomography showed complete bone healing.

Conclusions: two-stage approach is sometimes useful in the treatment of large jaw cysts to allow good healing and minimize surgical complications.

CORRELATION OF ORAL INFECTIONS AND SYSTEMIC COMPLICATIONS IN KIDNEY TRANSPLANT PATIENTS

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Aim: this retrospective study investigate a possible correlation between untreated oral infectious foci and onset of systemic complications in kidney transplantation (KT) patients, as dental clearance efficacy for preventing post-transplant complications is controversial.
Methods: patients scheduled for regular check-ups after KT were divided according to their dental status before KT (using as reference orthopantomography acquired prior to KT): Group Clear (Gr.C.) patients with complete dental clearance; Group Infected (Gr.I.) without dental clearance. Patients were divided according to their dental status prior to the transplant: Group Clear (Gr.C.) patients with complete dental clearance; Group Infected (Gr.I.) patients with no dental clearance. Medical complications were considered: fever, pneumonia, urinary tract infections, systemic infections, kidney rejection, death. Also divided into: early complications (within 100 days of KT) and late complications (after 100 days).
Results: 77 patients were enrolled: Gr.C.75% and Gr.I. 25%. 68% of Gr.I. patients developed early complications and 58% late ones. In Gr.C. 53% had early complications, and 40% late ones. Gr.I. patients had statistically significant increase in episodes of fever ($p = 0.03$), with higher relative risk of 3.66 in the first 100 days after KT.
Conclusions: within limitations of the present retrospective pilot study, a correlation between the absence of preliminary dental clearance and higher risk of developing a fever after KT was highlighted. Results encourage physicians continue research on this topic.

SURGICAL APPROACH OF DISPLACED UPPER THIRD MOLAR IN THE MAXILLARY SINUS: CASE REPORT

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Aim: the aim is to illustrate, via a case report and by reviewing the latest literature findings, how to approach and resolve in the most efficient way an oral surgery complication such as the iatrogenic dislocation of the third maxillary molar in the maxillary sinus, and when to refer the patient to an ENT specialist.
Methods: a patient was referred to our clinic with a dislodged third maxillary molar in the right maxillary sinus upon a failed extraction and retrieval attempt. After examination and study of radiographic exams we removed the tooth with the Caldwell-Luc technique of intraoral antrostomy and closed the oroantral communication left in the post-extraction alveolar socket. We then reviewed articles between the years 2018 to 2022 regarding foreign bodies removal techniques in the maxillary sinus.
Results: at the ten days follow up the patient was asymptomatic and there were no signs of residual communication left; the recovery was reported to be almost painless with minimal epistaxis.
Conclusions: this clinical case confirms that the most convenient technique is the Caldwell-Luc technique for objects displaced in the maxillary sinus. The patient should be referred to an ENT specialist for an endoscopic or trans-nasal FESS surgery in conditions like smaller foreign bodies near the roof of the sinus or in absence of an already existent oroantral communication.

MINIMALLY INVASIVE INTRAORAL APPROACH TO SUBMANDIBULAR LODGE

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Aim: the purpose is to describe the Minimally-Invasive Intraoral Approach (MIIA) performed on selected cases of abscesses and neck phlegmons of odontogenic origin, when the infection has not spread beyond the inferior mandibular margin. This technique allows to avoid cervicotomy by means of a direct approach to the abscess, draining it directly through the oral cavity.

Methods: the anatomical localization of the abscess and its spreading have to be pre-emptively evaluated with computerized tomography. We selected 57 patients with abscesses and neck phlegmons patients admitted at the DAE (Department of Acceptance and Emergency), from January 2018 to January 2020. We obtained our best results among all the patients selected for MIIA when positioning a drainage to improve the anti-gravity discharge of liquid from the residual cavity by contraction of suprahyoid muscles. Such mentioned drainage consists of a latex glove finger – Penrose similar – placed between the alveolar bone and the mucoperiosteal flap. Specific antibiotic therapy remains absolutely essential for the complete cure of the infection.

Results: the MIA technique has been used on a total of 12 patients (23%), where successful dental extraction and drainage of submandibular lodge was accomplished. The patients who underwent MIIA surgery have all perfectly healed and didn't suffer from any relapses during the follow-up.

Conclusions: the MIA consent in selected cases to lower the impact of the surgery, consequently reducing the length of hospitalization and cutting health costs.

SURGICAL EXCISION OF UNUSUAL SACKED NECK AND MEDIASTINUM ABSCESS OF ODONTOGENIC ORIGIN

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Aim: the most common cause of neck infections is odontogenic abscesses that can often be life-threatening and require a surgical drain associated with antibiotic therapy. We present a case of the surgical management of an odontogenic sack-shaped and walled abscess arising from elements 3.6, 3.7 and 3.8 that reached the laterocervical spaces and anterior mediastinum in a 28-year-old healthy woman.

Methods: the patient was admitted to our emergency department presenting with left submandibular swelling, fever, progressive dysphagia, trismus and dyspnea. She was given antibiotics and corticosteroid therapy.

We planned a double approach: an intraoral access - removing the teeth that probably caused the infection - and an extraoral one - performing a surgical drainage of the abscess in the neck.

Results: after the drainage of the deep space of the neck, we found a membrane containing the purulent material originating from the tooth roots of element 3.8, which stretched up from the submandibular and laterocervical region to the mediastinum, measuring 13 cm.

Conclusions: this case shows the importance of a multidisciplinary approach and of a complete diagnosis.

To the best of our knowledge, this is the first described case report of a dental abscess enclosed in a sack in the deep space of the neck and in the anterior space of the mediastinum.

TREATMENT AND OUTCOME OF MAXILLARY SINUSITIS ASSOCIATED WITH MRONJ

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Aim: medication-related osteonecrosis of the jaws (MRONJ) is defined as a pathologic condition affecting the maxillary and mandibular bones arising subsequently to pharmacological treatment with antiresorptive and antiangiogenic drugs. The purpose of the study was to evaluate the efficacy of conservative surgical treatment of maxillary sinusitis associated with MRONJ.

Methods: subjects diagnosed with MRONJ the maxillary posterior area with maxillary sinusitis, had undergone conservative surgery and had at least 6 months follow-up were included. All patients received medical-antibiotic therapy and then underwent conservative surgical treatment consisting of sequestrectomy, soft tissue debridement and bone curettage with limited or no extension. For maxillary sinusitis treatment, all patients underwent antral lavage.

Results: a total of 36 patients, mean age of 71.5±9.9 years (range 45-88), with 36 lesions, were enrolled. Six-months after conservative surgical therapy 31 lesions (86%) showed complete healing. Oro-antral communication hesitated in five patients and was treated with a removable prosthesis with obturator.

Conclusions: conservative surgical treatment of MRONJ lesions, with maxillary sinusitis, may represent a valid therapeutic approach determining a high number of complete healing cases. Conservative surgery should be encouraged at early MRONJ stages and after medical therapy failure.

ANTIBIOTICS PROPHYLAXIS IN DENTISTRY: A QUESTIONNAIRE BASED STUDY

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Aim: antibiotic (ATB) resistance is becoming a real issue among the population of well developed countries, as their prescription has widely increased between various categories of specialists, including dentists. The aim of the present study is to investigate if prescriptive protocols adopted for ATB prophylaxis before oral surgery and implantology by dental practitioners follow the American Heart Association Guidelines (2007), as no other more reliable guidelines seems to be available.

Methods: an anonymous questionnaire made of 10 questions was submitted online to dentists and dental hygienists between March and July 2020.

Results: 116 surveys were filled up, resulting that the most prescribed ATBs were amoxicillin with clavulanic acid (AC), amoxicillin (A) and clarithromycin for allergic patients. Two grams of AC one hour before surgery was the most diffused prescriptive protocols (66/116) for prophylaxis, despite the guidelines suggest two grams of amoxicillin. This prophylaxis was prescribed mainly to patients with mitral valve prolapse and history of bacterial endocarditis and heart transplant, which suggest that there is still confusion among clinicians regarding the conditions where ATB prophylaxis is actually needed. However, the most heterogeneous results emerged on prophylaxis associated to dental implants or prior to surgical third molar extraction.

Conclusions: collected data show that there are too many discrepancies among clinicians about the correct prescription of ATBs prophylaxis. Finally, unanimous evidence-based consensus on prescriptive modalities would be desirable in the next future.

IMPLANTS PROSTHETIC RIABILITATION IN PATIENTS WITH COMPLEX TRAUMA: A CASE REPORT

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Aim: this study aims to explain the main steps that characterize the implant-prosthetic rehabilitation in complex combined dental and maxillofacial trauma.

Methods: a 20-year-old patient reported an extensive facial trauma which also involved the alveolar process of the maxillary bone. The patient reported a maxillofacial fracture and the loss of teeth 1.3, 1.2, 1.1, and 2.1. A “Le Fort” type 2 fracture was also reported, with the malar bone involvement. After reduction and containment of bone fractures, through appropriate mounting plates, appropriate functional and aesthetic rehabilitation of the patient were replaced thanks to a temporary removable prosthesis. After 6 months, the patient performed numerous clinical investigations, aimed at a proper planning of implant-prosthetic rehabilitation of the upper dental arch.

Results: excellent, the patient was functionally and esthetically rehabilitated, thanks to good planning and management of the reported case.

Conclusions: with the planning of the case, as well as respecting the surrounding biological structures, the surgery of implants can be carried out with the most appropriate procedure.

PYOGENIC GRANULOMA IN A PREGNANT WOMAN: A CASE REPORT AND A REVIEW OF LITERATURE

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Aim: the aim of the study is to describe a clinical case of the surgical treatment of a pyogenic granuloma in a pregnant woman. The pyogenic granuloma represents an exuberant connective tissue proliferation due to an initialknown stimulus or a trauma, which usually occurs during the first trimester of pregnancy.

Methods: a 27-year-old pregnant woman at the third trimester came to the Department of Dentistry of the IRCCS San Raffaele Hospital with a sessile lesion. The patient was asymptomatic, but referred discomfort in normal oral activities. The intraoral examination led the surgeon to a diagnosis of follicular odontogenic cyst to beconfirmed by histological analysis.The treatment plan consisted in a surgical excision of the lesion. 2% lidocaine was performed as local anesthesia conforming the other guidelines; then the excision was executed using a n° 15 B-P scalpel, through palatal approach. As the lesion was sessile, the surgeon proceeded to the incision of the peduncle followed by a curettage of the gingival sulcus. The lesion was sent to the pathological anatomy laboratory for a histological examination.
A compression suture was performed to control bleeding. One week after the suture was removed.

Results: the histological examination confirmed the presumptive diagnosis of pyogenic granuloma, although the atypical timing of occurrence. One week later full healing aspect was found.

Conclusions: although the literature states that pyogenic granuloma is a benign condition typical of the first trimester of pregnancy and that it regresses spontaneously, the diagnosis of epulides in subsequent trimesters should not be excluded.

RHINO-IMPLANTS FOR THE REHABILITATION OF SEVERE MAXILLARY ATROPHY: A CASE REPORT

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Aim: rhino-implants have been recently introduced as an alternative to bone reconstruction techniques in case of severs atrophy and hyper-pneumatization of maxillary sinus.

Methods: a 75 years old woman, completely edentulous with a hyper-pneumatizazion of bilateral maxillary sinus has been fully rehabilitated with 2 rhino implants and 2 standard implants. Surgical procedure has been performed under local anesthesia. Implant sites were prepared with dedicated burs and magneto-dynamic technique. Two 20-mm length and 4-mm diameter implants (Rhyno Implants, Btk) were placed medial and distal impacting the lateral wall of nasal cavity and two standard implants 14-mm length and 3.3-mm diameter implants (Bt-Klassic, Btk) where placed in the middle with an insertion torque >40 Ncm. Flaps were sutured with 4.0 vicryl and an impression was then taken to immediately load the implants. A provisional prothesis was delivered after 24 hours.

Results: the post-operative recovery was uneventful, and patient was clinically and radiographically examined just after implants placement and 3 months after. 3 months after a definite metal-ceramic with titanium bar replaced the provisional one.

Conclusions: within the limitations of this case the use of rhino-implant used to immediately rehabilitate a fully edentulous and severely atrophic maxilla could reduce times and cost respect bone augmentation procedures with similar final esthetic result. However, the presence of an anatomic variation of infraorbital nerve call “canalis sinuosus” could be a contraindication of this technique.

EVALUATION OF POST-OPERATIVE DISCOMFORT IN SURGERY OF THIRD MOLARS

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The extraction of the third molar today represents a routine operation. Like any operation, there may be both intraoperative and postoperative complications and for these reasons it is important to know all the risk factors of the patient and perform an accurate preoperative evaluation. The purpose of this study is to evaluate the patient’s postoperative conditions using the PoSSe (postoperative symptom severity) scale.

The study was carried out through a four-year retrospective evaluation by two surgeons who carried out 433 extractions of the third molar. After one week from the operation to the control visit all the patients delivered the evaluation questionnaire in which reference was made to the postoperative pain, possible bleeding and edema.

The results suggest a close correlation between the intensity of symptoms in patients and edema according to the clinical report.

The three days following the surgery represent the worst days for the patients. They will show limitations in opening his mouth, pain, edema and difficulty in chewing, all factors that limit the patient’s relational skills. In conclusion, it was highlighted that the factors that mostly lead to postoperative discomfort in the patients are the use of cortisone and the duration of the operation, while the surgical technique that is used is not relevant.

Furthermore, the female gender seems to have a greater ability to manage postoperative pain.

MANAGEMENT OF TOOTH EXTRACTION IN HSAN TYPE IV PATIENTS: LITERATURE REVIEW AND CASE REPORT

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Aim: Hereditary Sensory Autonomic Neuropathy type IV (HSAN IV) is a rare autosomal recessive inherited disorder that affects the peripheral nervous system, mainly characterized by insensitivity to pain, self-mutilating behavior, anhidrosis, variable intellectual disability, impaired physical growth and delayed wound healing. Usually the sense of pressure, vibration and position is preserved. The purpose of this clinical report is to evaluate our approach on dental extractions on a patient affected by HSAN IV comparing it to other cases in scientific literature.

Methods: a 36-year-old female patient with HSAN IV, but without intellectual disability, presented at the Dentistry Department of Padua University Hospital for a dental consultation. Vitality pulp tests were performed in all the teeth as well as sensitivity tests. After a clinical and radiographic analysis, the right upper first premolar and the right lower second molar were found to be unrecoverable. The former was extracted without anesthesia and the latter was extracted with local anesthesia in two different times, sutures were placed.

Results: at the suture removal appointment one week later, the healing was good for both sites, while other cases reported post-operative complications like osteomyelitis. The patient reported no discomfort and no differences between the two sites.

Conclusions: in the scientific literature most patients with HSAN IV are treated under general anesthesia. With the patient's cooperation it is possible to perform simple oral surgery even without anesthesia or with nitrous oxide sedation.

SUSPECTED ORAL CANCER: A CLINICAL DIAGNOSTIC DECISIONAL TREE

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Aim: biopsy is the gold standard method for the diagnosis of oral cancer and it is the only definitive way to confirm its presence. It also helps with typing and staging cancer, crucial steps to define an appropriate treatment plan. This research aims to evaluate if frozen section biopsy, which provides an immediate diagnosis, can be more effective in the early diagnosis of oral cancer compared to formalin biopsy, which requires longer waiting times to obtain a definitive diagnosis. Besides, this study defines a decisional tree to choose the correct type of biopsy. Timing for oral cancer diagnosis has fundamental importance: diagnostic delay can influence the effectiveness of treatment and the patient's survival.

Methods: 10 patients with suspected oral carcinoma underwent two types of biopsies: one frozen section biopsy and one in formalin. 20 patients underwent a single biopsy in formalin. Patients who underwent a rapid histological examination biopsy received their diagnosis on the same day and were sent to the oncology departments to continue their diagnostic and therapeutic pathway; while patients who underwent a single formalin-fixed biopsy received their diagnosis on average after 20 days.

Results: the results show that performing a rapid histological examination biopsy could expedite the diagnosis and decrease diagnostic delay for patients with oral carcinoma.

Conclusions: although frozen section biopsy is not considered the definitive method to diagnose oral cancer, it can be utilized to provide a faster diagnosis and reduce diagnostic delay, improving the patient's prognosis.

SURGICAL THERAPY FOR MRONJ: EIGHTEEN-YEAR EXPERIENCE OF A SINGLE INSTITUTION

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Aim: medication-related osteonecrosis of the jaws (MRONJ) is defined as a pathologic condition affecting the maxillary and mandibular bones arising subsequently to pharmacological treatment with antiresorptive and antiangiogenic drugs. The purpose of the study was to evaluate the efficacy of conservative surgical treatment of MRONJ.

Methods: subjects diagnosed with MRONJ that had undergone conservative surgery and had at least 6 months follow-up were included. All patients received medical-antibiotic therapy and then underwent conservative surgical treatment consisting of sequestrectomy, soft tissue debridement and bone curettage with limited or no extension.

Results: a total of 361 patients, mean age of 69.3±10.9 years (range 29-97), with 377 lesions, were enrolled. Six-months after conservative surgical therapy 288 lesions (76.4%) showed complete healing. Stratification indicated complete healing and total resolution of disease for all 42 stage I lesions, improvement for 168 of the 213 stage II lesions, and for 81 of the 122 stage III lesions.

Conclusions: conservative surgical treatment of MRONJ lesions may represent a valid therapeutic approach determining a high number of complete healing cases. Conservative surgery should be encouraged at early MRONJ stages and after medical therapy failure.

THE EFFECT OF PLATFORM-SWITCHING ON PERI-IMPLANT MARGINAL BONE LEVEL: AN OVERVIEW

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Aim: the use of an abutment whose diameter is smaller than the implant platform appears to have a positive effect on the peri-implant marginal bone level (PMBL). The current overview aimed to summarize the findings provided by systematic reviews (SRs) and metanalyses (MAs) on the effect of different implant platforms on PMBL and to assess the methodological quality of the included SRs.

Methods: three electronic databases have been explored up to December 2022. SRs comparing platform switching (PS) and platform matching (PM) on PMBL were included.

The outcomes measured were the marginal bone loss and the implant failure rate. The methodological quality of the included SRs was assessed using the updated version of "A Measurement Tool to Assess Systematic Review" (AMSTAR-2).

Results: nineteen (19) SRs were included. Most of the included SRs argue that, in the short term, PS showed a statistically significant preservation of PMBL respect to PM. However, similar results in terms of implant failure rate were observed.

The methodological quality of the included SRs ranged between critically low (3 studies) and high (12 studies). The most common critical weakness in the included SRs was the absence of clearly a-prior established review methods and any significant deviations from the protocol.

Conclusions: PS seems to preserve PMBL. However, the current overview of SRs highlighted the need of high-quality SRs that have longer follow-ups, to quantify the effectiveness of the PS over time.

MANAGEMENT OF PATIENTS WITH COAGULATION DISORDERS UNDERGOING MINOR ORAL SURGERY

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Aim: the purpose of the present study was to analyze the management of dental extractions in patients affected by coagulation disorders in order to prevent bleeding intraoperative and postoperative complications.

Methods: this study included 17 patients with a diagnosis of a coagulation disorder, who had been subjected to a single or multiple dental extraction.

Recombinant activated Factor VII was administered in those patients who were affected by a deficit of factor VII ranged between 10,5% and 21%. The other patients were treated locally with tranexamic acid.

Results: a total of 50 teeth were extracted, 7 by surgical extraction and 43 by simple extraction. Of the 17 patients included 9 of them suffering from factor VII deficiency, 5 from factor V deficiency, 1 from Glanzmann's thrombasthenia and 2 from Haemophilia A. Pretreatment with recombinant activated factor VII was performed on a total of 8 patients with factor VII deficiency; the remaining 9 patients underwent tranexamic acid treatment. 1 hemorragic postoperative complication was observed.

Conclusions: surgical and no surgical extractions appear to be a safe procedure for patients affected by coagulation disorders when appropriate prophylaxis is adopted.

CONSERVATIVE APPROACH IN THE EXTRACTION OF IMPACTED MANDIBULAR THIRD MOLARS: A CASE REPORT

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Aim: the surgical procedure for the extraction of lower third molars requires proper planning and a conservative approach in order to avoid incurring complications due to the proximity of important neurovascular bundles. The purpose of this case report is to analyze the use of piezoelectric surgery in the extraction of deeply impacted third molars.

Methods: a 33-year-old male patient, in good general health, came to the dentistry department of San Raffaele Hospital reporting pain in the lower molar regions. Intraoral examination showed swelling and BoP. Through the evaluation of the orthopantomography (OPT), we observed the presence of 3.8 and 4.8 in deep inclusion. To accurately define the three-dimensional proximity with the contiguous anatomical structures a CBCT was prescribed and evaluated. The surgical procedures were performed under loco-regional anesthesia. Both teeth were removed setting up a mucoperiosteal envelope flap, preserving the interdental papilla. After osteotomy and odontotomy, performed using the piezoelectric handpiece, wisdom teeth were removed. After the extraction, we proceeded with the curettage of the alveolus and irrigation with saline solution. The flap was sutured using silk thread 3/0 performing horizontal mattress and simple interrupted suture.

Results: the results were monitored with follow-ups performed at 1 week, 3 months, 6 months, and 12 months in which a good healing of soft tissue was evaluated. The post-operative period was uneventful, in particular no nerve injuries were observed. In the last follow-up, 1 year after the surgery, good bone healing was assessed by a radiographic control.

Conclusions: the use of piezoelectric surgery for the extraction of wisdom teeth in deep bone inclusion reduces the risk of bone overheating and soft tissue damages, preserving important anatomical structures. Thanks to its micrometric cutting due to the effect of micro-vibrations, selective cutting and the possibility of keeping a bloodless surgical field, this technique seems to be reliable and predictable.

EPITHELIAL REMNANTS IN GINGIVAL GRAFTS: THREATS IN PERIODONTAL PLASTIC SURGERY?

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Aim: to highlight the real potential of epithelial remnants (ER) in de-epithelialized gingival grafts (DGG) in the development of epithelial cysts (EC) following surgical periodontal bilaminar techniques (BT) for root covering.

Methods: a literature analysis using PubMed® search engine with this string was conducted: << "Histological" and "Gingival Grafts" >>; inclusion criteria were: English language and human clinical studies. Studies considering post-operative biopsies were excluded.

Results: 192 articles were found. Of these, 7 articles histologically considering DGG at the moment of their application at the recipient sites were selected for an analysis of the failed de-epithelializations. Complications such as EC and gingival cul-de-sac following periodontal plastic surgeries for root covering have been described in literature for years as rare but possible events. Several authors have shown that ER are included in DGG in a high percentage of cases despite the de-epithelialization procedures. ER alone seem to be not sufficient to generate such complications of wound healing in grafting techniques. It is likely that other factors are implicated in the pathogenesis of these formations.

Conclusions: de-epithelialization procedures are strongly recommended for the success of BT for root covering; the high percentage of failed de-epithelializations in DGG appears to be in contrast to the low incidence of EC. ER in DGG seem to be slightly related to EC developed after BT surgeries.

BUCCAL FAT PAD: ANATOMY, FUNCTIONS AND ITS APPLICATION IN ORAL SURGERY

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Aim: the buccal fat pad (BFP) also named Bichat's ball, by the anatomist who described that structure, is a trigone-shaped adipose tissue located in the cheek. Its function, especially in adults, is a source of debate. Several protocols are known which propose the use of BFP in surgical interventions, among these, the best known is the closure of oro-antral communications (OAC). Moreover, other uses are known. The aim of this paper is to describe anatomy, functions and surgical applications of the BFP.

Methods: narrative review on definition, anatomical description, functions and applications of BFP was performed using PubMed Library. Original images of human cadaver dissection were used to describe the BFP anatomy. Data on surgical interventions involving BFP were collected in a table.

Results: BFP has a main body and four extensions and three lobes. The structure is made of non-lobular adipose tissue. It is independent of other fat tissues and easily tractionable. Because of its characteristics and regenerative potential, the BFP is widely used in several surgical interventions in oral surgery.

Conclusions: the BFP is a well-known structure and its applications in oral surgery are well documented. In addition to the closure of OAC, many other applications are well described in the literature. That's reflecting the high regenerative potential of BFP which make it a valuable aid in oral surgery.

LITERATURE ANALYSIS ON MANAGEMENT OF PATIENTS ON TAO THERAPY UNDERGOING ORAL SURGERY

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Aim: the aim of this study is a literature evaluation to define the correct management of patients on TAO therapy undergoing oral surgery.

Methods: a thorough literature analysis was conducted to evaluate the risk-benefit ratio of different options for managing patients on TAO therapy undergoing oral surgery, including interrupting the therapy 2 or 3 days before the surgery, temporary replacement with Heparin (bridge therapy), or continuing the therapy without modification. It is also important to evaluate the patient's INR and consult the patient's cardiologist before making any changes to the therapy. The current anticoagulants commonly used are Heparin and Warfarin. While Heparin has a short half-life and is typically administered intravenously, Warfarin has a half-life of 36 hours and is taken on o.s.

Results: the management of patients on TAO therapy undergoing oral surgery is still a subject of debate. For patients undergoing low-risk surgery with normal renal function, interruption of therapy is not necessary. For high-risk surgery, therapy suspension for at least 48 hours is recommended, with no need for bridging therapy.

Conclusions: clinicians should be fully prepared to manage patients on TAO therapy and their possible complications. With proper evaluation and management, patients can undergo oral surgery safely and effectively. Dentists should always consult with the patient's caridiologist before making any changes to the therapy.

CBCT EVALUATION OF SURGICAL DECOMPRESSION EFFECTIVENESS IN JAW CYSTS

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Aim: Odontogenic cysts (OC) arise from the odontogenic epithelium and are located in jaw in the regions surrounding the teeth. This study aims to evaluate the effects of decompression in jaw cystic lesions, using CBCT analysis at time zero and before cystectomy; moreover it evaluates the new walls formation where solutions of continuity with extraoral districts were present.

Methods: twelve patients with jaw cystic lesions compatible with OC of inflammatory origin, with solution of continuity between cyst wall and extraoral districts (maxillary sinus, oral floor and nasal cavity) were selected.

A surgical decompression of the OC was performed, inserting a cannula and fixing it to the adjacent teeth. For five months patients daily performed saline solution washings, then a second CBCT was executed to perform oral surgery. Cystic sizes were measured calculating the volume in mm^3 using the program Mimics 24.0.

Results: data distribution was analyzed by Kolmogorov-Smirnov test, and T test for paired data ($p < 0.05$) was performed for data comparison. Results show a statistically significant ($p = 0.0147$) reduction in cystic lumen volume.

Conclusions: these results suggest that decompression can be an effective treatment to reduce size of cysts lesions when the dimension of the cysts creates a continuity solution between oral bones and extraoral districts, in addition this clinical procedure significantly reduces possible postoperative complications such as mandibular fractures and neurological damage.

MANAGEMENT OF THE NASOPALATINE NERVE IN THE EXTRACTION OF IMPACTED MESIODENS

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Aim: the authors present the assess the location, morphology and dimensions of the nasopalatine canal on three-dimensional CBCT images in order to manage and isolate the nasopalatine nerve during the extraction of impacted mesiodens in children.

Methods: three pediatric patients were treated with surgical extraction of the impacted mesiodens, accessible from the palatal side of the maxilla. They received mepivacaine 2% + vasoconstrictor (adrenaline 1:100.000) for the palatal anesthesia. The intraoperative and postoperative pain scores were evaluated. Cone beam computed tomography (CBCT) imaging were carefully analyzed regarding the nasopalatine canal location, morphology and anatomical dimensions and its relationship with the supernumerary tooth were assessed. The canal was adequately protected during the use of rotary instruments. Finally, the integrity of the nasopalatine nerve was evaluated after mesiodens extraction.

Results: the mesiodens was extracted successfully in all three patients with no intraoperative complications. Postoperative nerve complications were avoided due to nerve bundle preservation during surgery.

Conclusions: although there is a lack of evidence regarding the management of mesiodens extractions, knowing the precise position of the nasopalatine nerve prevents intraoperative bleeding and postoperative paresthesias, avoiding damage to these structures. It can be achieved by the CBCT imaging, which has shown that complex neurovascular anatomy in the anterior maxilla is not uncommon.

ZYGOMATIC AND REGULAR IMPLANTS FIXED ORAL REHABILITATIONS

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Aim: zygomatic implants have been proposed for severe maxillary atrophy to avoid further regeneration procedure for fixed oral rehabilitations. The aim of the present investigation was to evaluate through a systematic review and to compare the survival rate of zygomatic implants and regular implants survival rate through a meta-analysis.

Methods: the literature screening was performed in accordance with the criteria of the PICO guidelines on PubMed/Medline, EMBASE databases.

The articles were selected for qualitative analysis and risk-of-bias assessment. The rehabilitations with zygomatic implants in combination with regular implants were considered for the meta-analysis of implant survival rate.

Results: the paper screening identified a total of 137 articles. A total of 32 articles were considered for the qualitative description. A similar implant survival rate between zygomatic and regular implants.

Conclusions: zygomatic and regular implants showed a similar high long-term survival rate for fixed maxillary rehabilitations. Further studies are necessary to evaluate the marginal bone loss comparison of zygomatic and regular implants after long-term functional loading.

MUCOCELE ON LOWER LIP: A CLINICAL CASE

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Aim: mucocele is a common salivary gland disorder that manifests as a mucus extravasation phenomenon or as a mucus retention cyst. The aim of this study is to describe a clinical case of mucocele.

Methods: a 27-year-old woman came to the attention of the Dental Clinic of Department of Dentistry of San Raffaele Hospital, reporting a swelling on the lower lip; the patient referred that initially the lesion was small and, through time, the dimension increased gradually. During the intraoral examination, a round, solitary, swelling was detected on the inner surface of the lower lip in the left central incisor region. The lesion was 2-3 mm below the vermilion border and it extended below the lingual vestibule, measuring approximately 10-12 mm. The color of the swelling was the same of the adjacent mucosa, without alteration. The mucocele was treated under local anesthesia with an excision, using scalpel through a straight incision. The lesion was resected from its base and then sent for histological analysis. Then the surgical site was sutured.

Results: the lesion was presumptively diagnosed as a mucocele, based on the clinical features and history of lipbitinghabit. The histopathological report confirmed the diagnosis.

Conclusions: due to high chances of recurrence, management of mucocele is a challenging task. Surgical excision with dissection of surrounding zone is a successful approach with least relapse. Simple surgical excision is the treatment of choice with good results and prognosis during the time.

ALVEOLAR RIDGE AUGMENTATION WITH THE BONE INTO BONE TECHNIQUE

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Aim: barriers made of cortical bone of heterologous origin are now used as a possible substitute of non-resorbable membranes and bone blocks for the regeneration of bone defects. This report analyzes the effectiveness of these barriers when placed in a surgical slot, vestibular to the defect, using the new Bone into Bone (BiB) technique.

Methods: a group of 20 patients (test) were treated with the BiB technique, and 32 implants were placed. Bone samples were collected with trephine burs 8 months after surgery and submitted to histological and histomorphometric analysis. The linear horizontal changes between pre-operative and post-operative radiographs were measured on the CT scan. A group of 18 patients (control) was treated with guided bone regeneration technique by means of resorbable membrane (BioGide) and a mixture of heterologous (Bio-Oss) and autologous bone chips: the results obtained were clinically compared to the test group.

Results: the mean width of the ridge ranged from a pre-operative value of 4.89 mm to a post-operative value, measured 8 months after surgery, of 7.25 mm in the Test Group. The mean width of the ridge ranged from a pre-operative value of 3.43 mm to a post-operative value, measured 8 months after surgery, of 7.15 mm in the Control Group. Histological images showed mature, mineralized bone with lamellar structure.

Conclusions: by comparing the results of both groups, the BiB technique is an equally performing alternative to other regenerative approaches, as it provides several advantages in terms of ease of the procedure.

CONSCIOUSNESS OF PERI-IMPLANT PATHOLOGIES BY PATIENTS: A QUESTIONNAIRE BASED STUDY

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Aim: the use of dental implants showed highly satisfactory results regarding function, aesthetics, and the long-term success of prosthetic rehabilitation. Despite this, implants can be subjected to pathologies that could lead to their loss. These include mucositis and peri-implantitis. Their prevention strictly depends on adherence to maintenance therapy and the daily hygiene maneuvers performed by the patient. This work aims to investigate the level of consciousness of peri-implant pathologies and the importance of maintaining hygiene among patients with dental implants.

Methods: an anonymous and self-reported questionnaire was administered to patients with one or more dental implants loaded for at least one year from 1 December 2021 to 31 July 2022. The Ethical Committee of the Azienda Ospedaliera di Padova approved the study n. 292n/AO/22 dated 8 September 2022.

Results: 403 questionnaires were collected. The mean age of the sample was 63 years. A good percentage of patients had implants for more than five (39%) and ten years (34%). 80% had never heard of mucositis and/or peri-implantitis and 20% reported that hygiene does not influence the duration of the implants over time. 29% said they have never received specific instructions on the daily hygiene of their systems.

Conclusions: within the limits of the present study, poor knowledge of peri-implant pathologies and maintenance therapy by patients emerged.

SURGICAL AND ORTHODONTIC TREATMENT OF AN UNERUPTED MANDIBULAR CANINE: THE IMPORTANCE OF THE TEAMWORK

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Aim: the frequency of canine impact in the mandible ranges from 0.92% to 5.1% and usually is linked with an important esthetic and functional complain from the patient. This article reports a surgical-orthodontic treatment with an impacted mandibular canine in the mixed dentition that was successfully managed.

Methods: a 9-year-old patient was referred to our clinic by her dentist with the chief complaint of the absence of the tooth 43. The intraoral examination showed the presence of a mixed dentition, with the absence of the element 43. To better determine if the tooth was present a radiological exam was requested (CBCT) that revealed the inclusion of the element on the mandible bone in a position that, according with the orthodontic team, does not suggest a possibility of spontaneous eruption. For this reason, a combined approach was planned. A full thickness flap was raised and to expose the impacted tooth an ostectomy was made using piezoelectric inserts. After the crown of the tooth was exposed a Kobayashi ligature was placed with the use of composite resin and then attached to a lingual arch. The closure of the wound was mad by first intention on the peripheral part but the center was left open.

Results: the surgical approach and flap design permitted to avoid problems during the wound healing period, like traction during the movement of the lip or the total wound closure. Patient was then referred to the orthodontic team for the following steps.

Conclusions: this case show that a staged and combined approach and careful study of case can lead to manage even challenging case.

GUIDED APICTOECTOMIES USING A DRILLING TEMPLATE: A CASE REPORT

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Aim: apicoectomies are endodontic microsurgical procedures that require high precision. Nowadays, gold standard procedure uses provide for a certain degree of imprecision as it heavily relies on the clinician's experience. This clinical study aims to apply the Surgical Guided Approach, frequently used in Implantology, to Apicoectomies, thereby ensuring higher precision and, therefore, a lower amount of bone tissue loss as a by-product of the procedure.

Methods: the subject of this case was one 79-years-old female who reported discomfort on the 1.2 and 2.2 element. OPT shows a radiotransparent area in correspondence on those elements which were endodontically treated. A CT-Scan of the patient's maxilla was performed to make the surgical template. After two intrasulcular flaps were sculped and dissected with Prichard, the surgical dime was fitted. Using a Trephine burs with a stop was possible to remove the bone discs with teeth apexes. The root canals were disinfected and prepared for the retrograde sealing with Piezosurgery tool. After that Bio-ceramic seal was used for the retrograde fillings.

Results: the present case demonstrated a valid alternative for apicoectomies which allows greater precision and healthy tissue preservation.

Conclusions: the goal set was reached: we achieved a surgical template which allows to perform apicoectomies successfully maximising the precision and accuracy of the surgical act and minimizing bone tissue loss during the procedure.

EFFECT OF IBUPROFEN AND CELECOXIB IN PAIN CONTROL AFTER IMPACTED THIRD MOLAR EXTRACTION

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Aim: the aim of this study was to compare the efficacy of celecoxib and ibuprofen in control pain following surgical removal of impacted mandibular third molars.

Methods: eighty-two subjects who needed surgical extraction of an impacted mandibular third molar were selected. Subjects were randomly divided into three groups and were instructed to take one of the following treatments twice daily for 5 days after surgery: placebo (n = 28), ibuprofen (n = 27) or celecoxib (n = 27). The primary factor considered was postoperative pain, assessed using the visual analogue scale (VAS) score recorded by each patient. Other factors, postoperative swelling and maximum mouth opening values compared with preoperative values, were also chosen as secondary outcomes.

Results: treatment with celecoxib and ibuprofen, resulted in improvements in the primary factor compared with placebo. Also, patients in the celecoxib group showed a significant reduction in postoperative pain scores at 6 hours ($P < 0.001$), 12 hours ($P = 0.011$) and 24 hours ($P = 0.041$) after surgery. Regarding secondary outcomes, no significant differences were found between the groups at each follow-up session.

Conclusions: this study demonstrated that, compared with ibuprofen and placebo, celecoxib treatment achieved greater efficacy on the incidence and severity of postoperative pain.

AMINOGAM® TREATMENT OF POST-EXTRACTION TOOTH SOCKET HEALING IN PATIENTS WITH DM2: A RCT

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Aim: to evaluate use of Aminogam® gel (sodium hyaluronate combined with 6 aminoacids precursors of collagen) in post-extractive alveolus healing in type 2 diabetic patients.

Methods: 50 diabetic patients with high grade disease are enrolled in a randomized clinical trial. Patients of Group A receive Aminogam® gel (placed in socket by the patient for 7 days), while Group B is control. After non-surgical extraction following parameters are measured: maximum mesiodistal (MD) diameter, maximum oral vestibule (OV) diameter, and the maximum socket depth (SD). MD, OV, and SD are used to calculate the secondary endpoint Residual Socket Volume (RSV). Follow up is performed at 3, 7, 14, 21 days where the RSV is measured and a modified version of Masse's Healing Index Score is calculated. On day 3 a sample from the socket is taken to quantitatively evaluates 12 different human cytokines (GM-CSF, IFN-α, IFN-γ, IL-2, IL-4, IL-5, IL-6, IL-9, IL-10, IL-12p70, IL-17A , and TNF-α.) using the MACSPlex Cytokine 12 Kit (Miltenyi Biotec). Pain is assessed using a VAS for 7 consecutive days.

Results: trial with patients is ongoing. The preliminary clinical results will be presented at the CDUO 2023.

Conclusions: from a previous study in the Department of Surgical Science it was shown that at day 7 and 14 Healing Index Score had statistically improved in the Aminogam® group, and the aim of this study is therefore to integrate this evaluation of improved healing with the study of cytokines.

ENDODONTIC SURGERY WITH ER:YAG LASER: A STEREOMICROSCOPIC EVALUATION ON *EX-VIVO* MODELS

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Aim: endodontic surgery is a treatment aimed to periapical healing, generally after the failure orthograde therapy. Apex resection is traditionally performed with diamond burs and ultrasounds with 45 degrees of angle of cut. The aim of the present study is to perform an *ex-vivo,* qualitative analysis on the cut surface using Er:YAG and diamond burs.

Methods: thirty extracted single-rooted teeth were collected, maintained at 37 degrees in saline solution and - after sectioning their crowns - were subsequently endodontically treated (step-back shaping technique, vertical condensation and carrier-based obturation). The samples were divided into 3 groups according to the cutting methods: 1. Diamond Bur (016, standard granulometry, Komet®) 2. Er:YAG laser with QSP mode (600 mJ, 10 Hz) 3. Er:YAG laser with SSP mode (300 mJ, 30 Hz). Roots, after a 45 degrees resection at 3 mm of the apex, were analysed under the stereomicroscope (SMZ25, NIKON®, Tokyo, Japan) with a 40X of magnification. Microscope pictures were taken of the various cuts and for each root it was calculated the presence on the surface of debris, homogeneity, and time of cutting too. It was also compared cutting time among the three groups.

Results: we did not observe a statistically significant difference among the samples. Erbium laser leads to a more homogeneous (70%) and linear surface than the bur (50%). Cutting time with SSP and diamond bur were comparable, while with the QSP mode it was longer.

Conclusions: according to the results of the present *ex-vivo* study, we can conclude that Er: YAG Laser is an excellent resource in endodontic surgery.

3D REPLICAS ACCURACY IN DENTAL AUTO-TRANSPLANTS SURGERY: AN *IN VITRO* STUDY

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Aim: accuracy assess of 3D stereolithographic tooth replicas used for dental auto-transplants compared to relatives natural teeth.

Methods: in the Department of Clinical and Experimental Medicine of Dental School (University of Foggia), 5 lamb skulls CBCTs were performed. After 8 single-rooted incisors extractions, linear and volume digital data were obtained. Data were converted in DICOM and STL formats necessary for 3D resina replicas printing. After measurements, the tooth was stored in a 0.5% sodium hypochlorite solution for 1 hour. Periodontal ligament and bone residues were removed and teeth were preserved in a 0.9% weight/volume NaCl solution. A robotic pyramid-based model of natural teeth and their replicas was used for each root examined.

Results: the CEJ Mesio/distal and buccal/lingual mean value error were 0.04 and 0.06 with a 4.17 (SD±0.0025) and 6.19 (SD±0.09) percentage, respectively. The root mean value linear error was higher in all specimens with 0.39 in M/A and D/A, 0.43 in B/A, and 0.40 in L/A measurements. The relative percentage root error was 39.42 (SD±0.11) in M/A, 39.22 (SD±0.099) in D/A, 43.11 (SD±0.09) in B/A, and 39.92 (SD±0.087) in L/A. An average error value of 9.8% was detected in the CEJ area, and a value of 45.54% for the volume.

Conclusions: the 3D replicas linear and volume results were inaccurate and the volume accuracy was deficiency (45%). Data confirmed the 3D replicas not be predictable to be used in dental auto-trasplants procedures able to reduce surgical time and increase the global treatment success rate.

B.O.I.L. TECHNIQUE COMBINED WITH A NEW MATHEMATICAL RULE: A 2-YEAR FOLLOW-UP CASE REPORT

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Aim: a current major challenge in oral implantology is to minimize the marginal bone loss around implants. Furthermore, the respect for the biological width is the key to avoiding complications such as peri-implant bone resorption. The solution could be a new mathematical rule based on soft tissues thickness for choosing the correct implant position in relation to the bone crest, following the Biological Oriented Immediate Loading (B.O.I.L.) protocol. The aim of this study was to present the clinical outcome of an immediate prosthetic fixed rehabilitation with Osstem ET III SA implants with 2 years follow-up.

Methods: a 57-years-old female with Stage IV and Grade B periodontitis was enrolled in this study. The correct position of seven different Osstem ET III SA implants was identified according to the mathematical rule Y=X-K: Y was the distance from the bone level to the most coronal part of the implant, X the thickness of the soft tissue and K was a constant related to the biological width, whose value was fixed at 3.

Results: the mean marginal bone level around the implants were 2.13±0.11 mm at T0, 2.05±0.15 mm at T6, T12, and T24. Most of the bone remodelling process occurred in the first 6 months of healing and subsequently, the bone levels remained constant and stable over time.

Conclusions: B.O.I.L. protocol can help implants insertion, ensuring the formation of the coagulum chamber, which is the key for socket healing.

THE VISTA TECHNIQUE FOR RETRIEVAL OF MAXILLARY IMPACTED CANINE: SURGICAL CONSIDERATIONS

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Aim: cases in which the VISTA technique has been applied for the treatment of buccally-impacted maxillary canines have been evaluated.

Methods: the protocol involved the following steps: anaesthesia; two soft tissue vertical incisions, the first at the level of the canine crown, and the second between first and second premolar; connection of the incisions with a sub-periosteal tunnel; insertion inside the tunnel of a metal ligature, to connect the button placed on the canine to a NiTi coil spring; placement of a mini-screw as a temporary anchorage device, in the homolateral inter-radicular space between the second premolar and the first molar, 5 mm far from the alveolar ridge; suturing.

Results: six maxillary and 4 mandibular canines have been treated. The mini screws have been used in 6 cases; in the remaining 4 the canines have been anchored to a power arm, welded on a molar bend in turn.

All mini screws have been placed in the maxillary space between the second premolar and the first molar, with exception of a mandibular case, where the screw was inserted at the level of the external oblique line.

Conclusions: the modified VISTA technique is an alternative method for the treatment of mesio-angulated vestibular canines especially in cases of deep impaction or when the application of the anchorage system is challenging: the mini screw provides maximum anchoring, the NiTi springs, together with the screw, enhance patient's compliance, and the incisions, distant from the gingival margin, avoid any periodontal involvement of the contiguous teeth.

MANDIBULAR FOLLICULAR CYST IN RADIOTREATED PATIENT IN THE CERVICOFACIAL DISTRICT

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Aim: the choice of surgical timing in the removal of a 4.8 follicular cyst, occasionally found in OPT, in a patient treated for oropharynx carcinoma and awaiting radiation therapy (RT).

Methods: cervicofacial RT involves radical infection clearance. Enucleation of a voluminous mandibular cyst results in a long healing recovery period of the bone, which is not compatible with the urgency of RT. Furthermore, there is also the weakening of corticals subjected by RT. Therefore, we decided to postpone the surgery 18 months after the end of RT, while monitoring the patient with clinical and radiological follow-up. Surgical treatment was performed under narcosis. An incision on the mandibular ramus and osteotomy was performed to remove the cystic lesion. Marsupialization was excluded to not expose the radio-treated bone.

Results: during RT (63 Gy), the patient was treated for a grade 2 mucositis and hyposcialia and also manifested an extensive erosion at the right retromolar trigone.

It was treated with aminogam and resolved in 2 months. The surgery was performed without complications and after 1 year there were no radiographical or clinical signs of osteoradionecrosis.

Conclusions: the planning of a radiotherapy treatment should be preceded by an odontostomatological examination with an OPT. If voluminous lesions are present, it is preferable to start with radiotherapy.

If complications were to arise before 18 months from the end of RT, with the appropriate protocols it's always possible to intervene.

CURRENT APPLICATIONS OF GUIDED ENDODONTIC SURGERY: A SCOPING REVIEW

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Aim: to synthesize the existing knowledge on the current applications of surgical guided endodontics by a scoping review.
Methods: reporting followed Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Extension for Scoping Reviews. A literature search was conducted in the PubMed and Scopus databases to retrieve all clinical studies on the current applications of surgical guided endodontics. Two independent reviewers performed the data extraction. The studies satisfying the inclusion criteria were included for qualitative analysis.
Results: the initial search retrieved 355 articles, with 349 after duplicates removal; of these, 14 satisfied the inclusion criteria. Four studies were case series and 10 case reports. No randomized clinical trials and cohort studies were identified. Thirteen articles followed static surgery protocol while one dynamic. Overall, guided surgical endodontics reduced iatrogenic errors and chair time. No postoperative problems were found in all studies.
Conclusions: guided surgical endodontics exhibited promising results in the management of most endodontic cases, yet the elevated cost limits its widespread. High-quality randomized clinical trials and cohort studies with adequate follow-up are needed to determine the actual effectiveness of surgical guided endodontics over the free hand protocol.

MANAGEMENT OF LEUKOPLAKIA WITH DIODE LASER. THE RELEVANCE OF FOLLOW-UP DURING WOUND HEALING

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Aim: Oral leukoplakia (OL) is a white plaque lesion, classified as potentially malignant disorder. Approximately 1% of OL will transform into carcinoma every year. Management can be challenging as some OL will recur, but there are some advantages of using laser in surgical treatment (e.g., faster wound healing, reduction of bleeding, minimal invasiveness). We report a case of recurrent OL treated with diode laser.
Methods: a 68-year-old female no smoker patient was referred to the Department of Oral Medicine and Surgery of the University of Parma for a white plaque lesion of about 1.0 X 2.0 cm, not-ulcerated, not-bleeding, and painless, on the right lingual margin.
An excisional biopsy with scalpel was performed maintaining 0.5 cm resection margins, followed by histopathological examination.
Results: a diagnosis of leukoplakia with moderate dysplasia was rendered. At a 3-month follow-up visit a white lesion of about 0.5 X 0.2 cm was identified in the same subsite. Surgical excision was performed with diode laser. Histopathological examination confirmed the moderate dysplasia. An exophytic traumatic lesion occurred in the biopsy area 1 month after laser resection. Molar contact was observed and then we decided to perform an ameloplasty and a manufacture of a bite. As the lesion remained, it was surgically removed. Its histological examination revealed mucosal ulceration with frictional keratosis and chronic inflammation, without dysplasia. At a 3 months follow-up no further lesions were identified.
Conclusions: diode laser is probably one of the most useful tools in soft tissue surgery. Recent evidence suggests that recurrence rate of leukoplakia is somewhat lower after laser excision.

CHRONIC LIP EDEMA AND PAIN AFTER LIP AUGMENTATION: HISTOLOGY, SEM AND X-RAY SPECTROSCOPY

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Aim: the cosmetic dermal filler is increasing in the following years and lip augmentation procedures have become gradually popular. The aim of the present study was to evaluate an unusual case of chronic lip edema and pain after associated to lip augmentation procedure investigated by a histological, scanning electron microscopy and x-ray microanalysis.

Methods: a female patient, V.A., 53 years old, non-smoker was subjected to a lip injection with hyaluronic acid about ten years before. Few years after the injection, the patient reported multiple nodules on the lips, which were not painful at the time of their appearance. Over time, the lesions become painful first to the touch and then also spontaneously.

Results: a hyaluronidase injection was performed in the nodule, accompanied by a systemic antibiotic and steroids administration with no clinical improvement. After two months, one neoformation present in the lips was excised for histological evaluation and reported a chronic inflammatory component in which accumulation of amorphous matrix referable to foreign material was observed. The SEM evaluation showed some different electron-dense and electron-lucent areas, indicating an increasing of Ca and P concentrations on the surface by the X-ray spectroscopy (XPS). The patient showed an excellent compliance and after three months from the surgery, the subject reported no more swollen areas with painful nodules spontaneously or on palpation.

Conclusions: the filler complications represent a clinical occurrence that could emerge also in a very late phase from the treatment.

A SYSTEMIC AND ORAL ASSESSMENT OF COMPLICATIONS POST MARROW TRANSPLANTATION

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Aim: the treatment plan that should be carried out towards patients undergoing Haematologous stem cell transplantation (HSCT) requires a multidisciplinary approach. The purpose of our retrospective study is to evaluate how a proper clinical protocol can positively affect systemic and oral health, analyzing local and systemic complications that occurred one year after HSCT.

Methods: 79 patients were examined one year after HSCT, divided into a group A in which the infectious foci were completely removed prior to transplantation, and group B in which it could not be done on time. The clinical protocol included a detailed examination of the oral cavity, followed by the comparison of a post-transplant orthopantomography with one prior to HSCT. Finally, we analyzed the oncohematological medical reports to retrospectively detect systemic complications that occurred after transplantation.

Results: among all post-transplant complications taken into analysis, which includes chronic Graft versus Host Disease, disease relapse, infectious complications, dysgeusia, secondary carcinoma, complications related to the neurological, cardiovascular and pulmonary system and disorders linked to the oral cavity, no statistically significant difference was detected except for neurological disorders, which were found to be greater in group A ($p = 0.002$).

Conclusions: given the lack of precise guidelines, more studies should be performed regarding the role that a proper dental treatment and a prevention plan could play in pre-HSCT patients.

PRELIMINARY RESULTS OF STUDY ON THE USE OF L-PRF IN POST-EXTRACTION LOWER THIRD MOLAR

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Aim: autologous blood components for non transfusional use are obtained by centrifugation of a patient's venous blood. Leukocyte- and platelet-rich fibrin (L-PRF) can promote regeneration of damage tissue, increase angiogenesis, and reduce inflammation symptoms (as pain or swelling).
The purpose of the study is to evaluate if L-PRF accelerates wound healing process and stimulates the regeneration of hard and soft tissue in a post extractive socket of third inferior molar.
Methods: this study has a split-mouth design. Patients requiring extraction of bilateral lower third molars were selected at the Unit of Dentistry & Oral-Maxillo-Facial Surgery, Policlinico of Modena. Extractions were performed by the same operator and with the same surgical approach. All patients received a standard pharmacological therapy and followed the same postoperative instructions. Before extraction, it was established which site would receive L-PRF (test group) or collagen sponge (positive control group). Postoperative discomfort and soft tissue were evaluated up to 7 days. Clinical-radiographic outcomes related to hard tissue were analyzed at 3 and 6 months. Statistical analyses were performed to observe the differences between the two groups.
Results: we enrolled 8 patients and a total of 12 third lower molar were extracted. Five post extractive socket were treated with L-PRF (test group) and 7 with collagene sponge (positive control group). The VAS score, analgesic consumption, and trismus were lower in the test group patients. The alveolar crest thickness showed higher reduction in the control group. The distance between the distal bone peak and the CEJ of the second molar showed slightly higher bone peak values for the test group patients. There were no statistically significant differences between test and control group for any parameter analyzed.
Conclusions: the use of L-PRF in the post-extraction socket of lower third molars can be a valid aid in reducing pain symptoms and improving discomfort caused by swelling and trismus. L-PRF in the post-extraction alveolus of third molars also appears to have a beneficial effect on the periodontium of the second molar, both clinically and radiographically.

SURGICAL MANAGEMENT IN EXTRACTIONS OF MAXILLARY AND MANDIBULAR THIRD MOLARS: CASE REPORT

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Aim: an impacted tooth can be defined as a tooth that is prevented from erupting up to the occlusal level because of malposition, physical barrier or lack of space. The decision to surgically remove impacted third molars has no established absolute treatment protocols, but multifactorial consideration is required before contemplating the procedure.
The purpose of this case report is to document the surgical management of the extraction of impacted maxillary and mandibular third molars.
Methods: a 19-year-old female patient, came to the Dentistry department of San Raffaele hospital for a visit, the intraoral examination revealed incorrect position of the second molars in the arch, probably caused by dysodontiasis of the third molars.
The 1st level x-ray (OPT) confirms the dysodontiasis of the elements 1.8, 2.8, 3.8 and 4.8.
The extractions were performed in two surgical procedures to allow the patient to chew on the opposite side; the first element to be extracted was 4.8. After loco-regional anesthesia we made a full thickness mucoperiosteal envelope flap, followed by an access osteotomy, a coronotomy and an odontotomy. We revised the cavity, inserted fibrin sponges and sutured with 3/0 silk thread.
In the same way, we extracted the 1.8 element, however the odontotomy it was not necessary.
In the second surgical procedure, elements 3.8 and 4.8 were extracted, following the same surgical method; in this case for the mandibular third molar we only performed the coronotomy without separating the roots, while for element 2.8 it was not necessary.
Results: a follow-up was carried out at 1 week, 3-6 and 12 months and showed good healing of the tissues.

Conclusions: the extraction of impacted third molars is a routine operation for oral surgeons, but knowledge of the anatomy and radiological evaluation are requirements for accurate planning of the operation. Any surgery is not free from more or less serious complications. The surgeon's ability lies in knowing how to manage the complications themselves in the most appropriate way.

LOWER THIRD MOLAR X-RAYS FOR DECEASED MIGRANTS AGE ESTIMATION: MESSINA ORAL SURGERY SCHOOL

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Aim: the aim of this study is to use the Demirjian method to estimate the age of deceased migrants by evaluating the radiological development of their lower wisdom teeth.
Methods: the study was conducted at the Department of Forensic Medicine of the Hospital Papardo (Messina) and involved the use of intraoral X-rays of the mandibular retromolar regions (right and left side) of 5 corpses found after the disembarkation on 07/24/2022. The X-rays were taken using a portable intraoral X-ray unit (VATECH VEX-P300), Rinn XCP-DS sensor holders and Molt mouth gag. The age estimation was performed by assessing the eruption stage and root development of lower third molars, which continue to develop after the age of 14. Intraoral periapical X-rays of the mandibular retromolar regions were taken of every corpse to check for the presence of lower third molars and to verify their roots' development.
Results: based on the analysis of the X-rays obtained, it was determined that 2 of the 5 corpses were of legal age while 3 were underage.
Conclusions: the study showed that the Demirjian method for dental age evaluation, which involves the analysis of lower third molars in their highest maturational stage, can be used to estimate whether a corpse is of legal age or underage. The method is reliable and can be useful in forensic investigations involving deceased migrants.

THE L-PRF ROLE IN THE REGENERATIVE TREATMENT OF INTRAOSSEOUS PERIODONTAL DEFECTS

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Aim: was to investigate the influence of the use leucocyte-and platelet-rich fibrin (L-PRF) as an intrabony defect filling material and also to compare the patients' perception about surgical therapy with and without the L-PRF application.
Methods: this was a parallel group, standard of care-controlled, randomized pilot trial. Patients in general good health, presenting with at least one deep intrabony defect were considered eligible for this study. Patients were randomly treated with (aG) or without (bG) application of L-PRF and were followed up to 1 year.
The full-mouth plaque score (FMPS), and full mouth bleeding scores (FMBS), the probing pocket depth (PD in mm), gingival recession (REC in mm), and clinical attachment level (CAL in mm) were recorded at baseline (before surgery), at three and six months (excluding PD and REC) and 1 year. Data on closure of the flaps, presence/absence of edema and/or hematoma were evaluated, and Patients were given a questionnaire (OHIP 14) about the subjective perception of intra- and post-operative pain and/or discomfort. The chair-time of each surgical procedure will be recorded.
Results: 14 patients representing 14 intrabony defects were split in the two branches of the study (aG and bG). No significant differences between aG and bG were found as FMPS and FMBS at baseline and along the study, and as PD, REC and CAL at baseline. One year after surgery, statistical significant differences were found between aG and bG as REC and CAL that were lower in aG.
The aG showed greater chair-time and discomfort during surgery, and lower discomfort and flap healing post-surgically.
Conclusions: L-PRF seemed to play a clinically positive role in reducing REC and consequently increasing CAL gain in the-

se periodontal defects. Moreover, produced a better healing process and reduce post-operative patients' discomfort. The intrasurgical measures were: distance between the cemento-enamel junction and the bottom of the defect (CEJ-BD), the distance between the cemento-enamel junction (or restoration margin) and the residual alveolar crest and depth of the 3-wall and 2-wall sub-components of the defect. Randomization will be performed by computer generated random codes.

POST-SURGICAL SWELLING: A NEW AUTOMATED TOOL FOR VOLUMETRIC ASSESSMENT

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Aim: this study aimed to introduce a new automated method of volumetric measurement for postoperative swelling.
Methods: patients undergoing CBCT for lower third molar surgery were enrolled. Bellus3D App was used to obtain facial scans before surgery (T0), three days (T1) and seven days after surgery (T2). Three-dimensional analysis was conducted using the software 3D Slicer. After CBCT orientation, automated segmentation of facial soft tissues was performed in order to obtain a 3D template for the surface registration of the T0 scan. For the comparison, T1 and T2 scans were registered on oriented T0. Pre- and post-operative swelling were analyzed using an innovative open source tool for volumetric measurements. Volumetric data were correlated with linear measurements of swelling and secondary clinical outcomes (pain, trismus and bleeding). Statistical analysis was performed setting $\alpha = 0.05$.
Results: in the comparison of T0-T1 models, volumetric data showed an increased swelling (3964.85±3989.78 mm^3) correlated with an increase linear difference (2.81±1.88 mm). At T0-T2 a decreasing trend of swelling was recorded with a volumetric difference of 3314.83±3247.76 mm^3 and a linear difference of 1.033±0.922 mm. Clinical outcomes confirmed this trend, a statistical significance was found with trismus at T0-T1 and with pain at T1-T2 ($p < 0.05$).
Conclusions: the use of an automated volume calculation tool improves significantly the post-surgical swelling assessment in order to avoid operator-dependent procedures and to overcome linear measurements.

EVALUATION OF GLYCAEMIA BEFORE AND AFTER SIMPLE TOOTH EXTRACTION IN PATIENTS WITH DIABETES

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Aim: to compare the effects of local anaesthesia with and without epinephrine on peripheral blood glycaemic response before and after simple tooth extraction in patients with diabetes.
Methods: this randomized clinical study included 82 patients with diabetes (type I, n = 25; type II, n = 57) with low-moderate surgical risk. Before the procedure, patients were randomly assigned to group A (local anaesthesia with epinephrine, n = 41) or group B (local anaesthesia without epinephrine, 0 = 41). Peripheral blood glycaemia was measured before and after the procedure with the GlucoTest® device. All patients received atraumatic extraction of 1 or 2 teeth followed by simple interrupted sutures.
Results: peripheral blood glycaemia after tooth extraction increased in 65%, decreased in 33% and did not show any variation in 2%. There was no significant difference between group A and group B.
Conclusions: in most diabetic patients, peripheral blood glycemia was reduced after the procedure regardless of the choice of local anaesthetic. These results suggest that simple tooth extractions may be safely performed in patients with diabetes and that hyperglycaemia may not be a common complication. Moreover, the choice of local anaesthesia with or without epinephrine may be guided by clinical needs and is not associated with significant hyperglycaemia.

SURGICAL CILIATED CYST OF THE MANDIBLE: A CASE REPORT AND REVIEW OF THE LITERATURE

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Aim: Surgical ciliated cysts (SCC) typically occur in the bony region of the jaws when there is a risk of respiratory epithelium implantation. This report describes a case of SCC affecting anterior part of the mandible.

Methods: a 39-year-old woman was referred to the department of oral surgery at San Raffaele Hospital in Milan due to the pain related to an existing exudative inflammation and swelling at buccal part of the anterior zone of mandible. The patient reported a previous rhinoplasty with osteocartilaginous nasal graft to perform the chin augmentation around 10 years earlier. The treatment plan was to perform a complete removal of the cystic lesions by opening a full flap access from the buccal part of the mandible preserving the aesthetic aspect. The 3 cystic lesions were removed intactly and the bone cavities were cleaned using a surgical bur in order to prevent any recurrence of the lesions. The patient has been returned after a week to remove the sutures and she was advised to continue a routine follow up with her dentist.

Results: based on the current literature review only 16 cases of mandibular SCC have been reported due to its rare incidence. A sample was sent for histological analysis and the presumed diagnosis was confirmed.

Conclusions: in order to prevent this kind of cystic lesion it is mandatory to use fully cleaned surgical instruments and avoid utilising autogenic graft with nasal/respiratory epithelium. As it is released in the latest version of WHO classification, in order to make a proper diagnosis other osteolytic cysts should be excluded.

SEMI-OCCLUSIVE CAD-CAM TI-MESHES FOR GUIDED BONE REGENERATION

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Aims: GBR is a widely used technique for the treatment of atrophic jaws with a good success rate in short and long term studies. However, this technique is not lacking of complications and a wide range of barrier devices has been tested for simplify and standardize GBR procedure. The aim of this study is to investigate clinical and histological features of a new GBR titanium CAD-CAM device called Semi-occlusive Titanium Mesh.

Methods: five patients with partial edentulism of the maxilla/mandible, with vertical/horizontal bone defects, were treated with GBR procedure in order to achieve implant- supported restorations.

The device used was a semi-occlusive CAD-CAD TI-mesh with a CAD-CAM laser sintered micro-perforated scaffold with 0.4 mm pore size.

8 months after GBR during re-opening surgery (T1), surgical and healing complications were evaluated and histological and histomorphometrical analyses of the regenerated bone were performed.

Results: a total of 5 patients with 6 treated sites were enrolled. One healing complications were recorded and classified as late exposure of the device 4 months after GBR. At 8 months well-structured new regenerated trabecular bone with marrow spaces was present. The percentage of newly formed bone was 30.37±4.64%, marrow spaces 56.43±4.62%, residual grafted material 12.16±0.49% and residual bone chips was 1.02±0.14%.

Conclusions: within the limitations of this study, the results show that semi occlusive Ti-Mesh could be used for vertical and horizontal ridge augmentations. Nevertheless, further clinical and histological studies are need.

DIFFERENTIAL DIAGNOSIS OF OSTEOLYSIS ASSOCIATED TO LOWER THIRD MOLAR: A RETROSPECTIVE STUDY

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Aim: radiolucent lesions associated with impacted third molar can show different diagnoses which need confirmation by histological examination.
In most cases, there is a tendency to attribute the cystic neoformation associated with the impacted third molar to a dentigerous cyst (DC) because of the frequent mechanism of pathological degeneration of the organ deputed to the formation of dental enamel, which occurs in the second and third decades of life in the included tooth. The aim of the present study is to identify and demonstrate the frequency of unexpected diagnoses of monocystic ameloblastoma (UA) or odontogenic keratocyst (OK) when by radiographic examination it is suspected as a dentigerous cyst (DC) because of its clinical and radiographic characteristics.

Methods: a retrospective analysis of biopsies received from 2000 to 2020 was performed, and the number of UA, OK, and DC cases was evaluated. Clinical and radiographic data were compared with histological examinations and anatomical location, and the number of preoperative UA and OK cases assumed to be DC was identified.

Results: a total of 607 biopsies were received. Of these, 491 were diagnosed and confirmed as DC (80.9%), 72 as OK (11.8%) and 26 as UA (4.3%) and 18 (3%) undetectable.

Conclusions: the retrospective analysis shows that a biopsy should always be considered in all cases in order to establish the correct pathologic diagnosis and to plan treatment, because radiolucent lesions associated with impacted third molar are often diagnosed as other odontogenic neoformations.

10 YEARS RETROSPECTIVE ANALYSIS ON PATIENTS AFFECTED BY MRONJ ATTENDING THE DENTAL SCHOOL

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Aim: the aim of this retrospective study is to evaluate the incidence of MRONJ related to the type of drug prescribed and to the underlying disease in patients attending the Oral Surgery section of the Dental School of Turin.

Methods: in this analysis a period of 10 years (2011-2021) was taken into account for a total of 292 osteonecrosis sites in 280 patients.
The patients were divided by age group, drugs, underlying diseases, arch affected by osteonecrosis, healing and treatment implemented. Then these factors were associated to the later development of MRONJ and to the to the effectiveness of the therapies implemented.

Results: from the data, based on the underlying pathology, it was possible to derive the incidence of MRONJ. Pathology developed in 15% of patients with breast cancer, 7% with prostate cancer and 4% with metabolic disorders. If we were to evaluate the incidence of MRONJ according to drugs assumed we would find the Alendronate having the highest incidence (23%), in fact this doesn't require a dental suitability certificate before starting therapy. On the other hand, usually patients are sent to our Faculty in occurrence of osteonecrotic problems, therefore the total number of patients taken in consideration are a lot lower than the prescriptions in the general population: the data emerged may be misleading related to the general population.

Conclusions: overall, despite the growing attention towards MRONJ in the last years, as a result of the increasing number of prescriptions of these drugs the cases of drug-related osteonecrosis show a positive trend.

ODONTOMA ASSOCIATED WITH FOLLICULAR CYST: A CASE REPORT

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Aim: both odontomas and follicular cysts are lesions frequently encountered in dental practice, but the simultaneous presence of both is rather rare. The purpose of this case report is to describe a case of odontoma associated with a follicular cyst located in the anterior sector of the mandible.

Methods: a 65-year-old woman went to the oral surgery department of the Policlinico Hospital in Milan for a visit aimed at evaluating a lesion present at the level of the mental foramen. On radiographic examination, a cystic lesion associated with a radiopaque mass involving the root apices of the lower incisors was observed. Over the years, the patient underwent two different CBCT scans, 10 years apart from each other. Thanks to these, it was possible to measure the dimensional increase that the lesion had over time, and this was decisive in the decision to proceed with surgical excision. Finally, the lesion was sent to the pathologist to confirm the initial diagnostic hypothesis.

Results: as proof of their odontogenic nature, odontomas can induce cystic proliferation. This lesion derives from the degeneration of the enamel organ after the partial or total development of the crown of the same odontoma. Although these changes are mentioned in the literature, they are rare in clinical practice.

Conclusions: despite their benign nature, it is appropriate to remove these types of lesions in order to avoid secondary complications and possible sequelae for the patient, with excellent postoperative prognosis.

MARSUPIALIZATION OF MANDIBULAR CYST: A CASE REPORT

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Aim: the authors describe the conservative treatment of a large oral mandibular cyst to minimize the risks of mandibular fracture and inferior alveolar nerve injury.

Methods: orthopantomography and Computer Tomography (CBCT) of a healthy 65 years old patient revealed a 3 cm radiolucent area from element 4.6 to 4.8 associated with the crown of an impacted mandibular third molar. A buccal full-thickness flap was detached after a linear incision of the alveolar mucosa, the cyst lining was exposed and partially removed performing an incisional biopsy. The flap borders of oral mucosa and the edges of the remaining cystic epithelium were sutured with PLG absorbable suture and the lumen was filled with iodine gauze that were removed after 7 days. The result of histologic exam confirmed the clinical diagnosis: dentigerous cyst. New gauze was inserted into the surgical pouch after disinfection with 0.2% chlorhexidine twice a week for six months and new CBCT exam revealed an evident reduction of cyst's size. The surgical enucleation of the follicular cyst was so performed with the extraction of the impacted third molar and the second molar under general anesthesia.

Results: an Orthopantomography after 7 months from the surgery revealed a good healing with trabecular bone formation and the disappearance of the radiolucent area. No adverse event was recorded.

Conclusions: the marsupialization of voluminous cystic lesions of the jaw aims to release the intraluminal pressure, allowing a gradual growth of the surrounding bone with progressive volume reduction before performing lower risk enucleation.

A FULL-DIGITAL CUSTOMIZED MESH APPROACH IN GUIDED BONE REGENERATION: SYSTEMATIC REVIEW

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Aim: the aim of the present systematic review is to analyze clinical application of digitally custom-made meshes related to guided bone regeneration (GBR) in oral surgery.

Methods: an electronic search of the online databases PubMed, Scopus, and Web on Science was performed using the following MeSH terms combinations: "GBR AND mesh AND 3D printing" or "CAD/CAM AND mesh" or "GBR AND custom AND mesh". The search was carried out, considering articles published from January 2013 to January 2023. 143 articles were examined, and 15 studies were selected for this review.

Results: 4 studies underlined the achievement of satisfactory aesthetic outcomes. 6 studies suggested customized mesh application in case of severe bone defects. 3 studies highlighted better bone regeneration obtained. 1 study stated that customized meshes alone don't seem inferior to customized meshes covered by collagen membranes in terms of healing complications and regeneration rates. Only 1 study expressed that custom-made mesh could lead to important post-operative morbidity.

Conclusions: 14 studies noticed positive clinical outcomes of digital customized mesh application during GBR procedures, being aesthetic results, better bone regeneration, and their versatility related to all types of bone defects, even severe ones. Only 1 study highlighted important post-surgical mesh exposure, suggesting a cautious approach to this procedure when designing the mesh, to avoid flap tension that may cause mucosal rupture.

AUTOLOGOUS BIOMATERIAL GRAFT WITH TOOTH TRANSFORMER® TECHNIQUE FOR BONE REGENERATION

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Aim: the loss of a tooth, which occurred for various reasons, causes bone resorption if alveolar preservation strategies are not implemented. The restoration of an adequate bone volume is fundamental to create a site that allows the subsequent implant-prosthetic rehabilitation. The objective of this study is to verify the effectiveness of the use of autologous material deriving from the tooth with the aid of the Tooth Transformer® in guided bone regeneration. This system reduces the mineral component of the dentin and exploits the BMPs with high regenerative power.

Methods: patient, edentulous in area 2.6, intends to rehabilitate the area using implantology. Due to the lack of sufficient bone, a GBR of the site is performed in the first surgical phase, through the use of the compromised element 3.8, previously extracted, as autologous material to be affixed for the grafting through the Tooth Transformer®. After 4 months, the surgical site was reopened and the implant fixture was inserted which, after 4 months, was loaded.

Results: the result obtained demonstrates the effective regenerative power of the Tooth Transformer® method which ensures high predictability of therapeutic success. At the end of the regeneration, 9.82 mm of bone was obtained which allowed to an adequate implant placement.

Conclusions: the autologous material guarantees a natural high wettability which determines an increase in osteoblastic maturation and an increase in the production of local growth factors.

EVALUATION OF POST-OPERATIVE MORBIDITY AND PALATAL WOUND HEALING AFTER IMPLANT UNCOVERING

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Aim: the aim of our study was to evaluate the efficacy of the L-PRF in modulating the healing by secondary intention of the surgical wound resulting from fixture uncovering, assessing the patient's post-operative condition. The purpose of this case series is to evaluate the healing and post-operative discomfort of the patient, after implant uncovering using APF and L-PRF bandage at the palatal aspect.

Methods: 40 maxillary implants were recruited. The inclusion criteria: not having systemic diseases; not being pregnant/lactating; not-smoker; FMPS and FMBS <20%; width of the buccal keratinized gingiva <2 mm.

The flap was detached and elevated to partial thickness beyond the muco-gingival junction buccally. A double layer of L-PRF was applied to the surgical wound and stabilized with compression sutures. The primary outcome of this study was the complete re-epithelialization of the surgical wound (CWE). Then were evaluated: post-operative discomfort (D); Modification of patient's feeding habits (CFH); use of analgesics in the first week (AU) and alteration of sensitivity (AS). The AU was calculated based on the sum of analgesic administrations at the end of the week, to indirectly quantify the patient's pain.

Results: results demonstrated that within 2 weeks 5 of 20 (25%) surgical sites presented CWE, while within 3 weeks all sites achieved complete healing.

Likewise, all secondary parameters showed a favorable evolution within 2 weeks, and all patients reported no discomfort and changes in feeding habits after the second week. After the first week of examination, no patient reported the use of analgesics.

Conclusions: the following study aims to present a new L-PRF mediated dressing technique associated with APF to promote, based on the biological properties of L-PRF, the healing of the surgical wound around the implants and reduce the patient's postoperative discomfort.

AUTOLOGOUS DECIDUOUS TOOTH-DERIVED MATERIAL FOR GBR PROCEDURE

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Aim: several techniques were described to increase bone volume with guided bone regeneration (GBR) procedures. Among the autogenous biomaterials, some authors proposed the use of autogenous dentin, retrieved from teeth, using Tooth Transformer®. The aim of this case report is to prove the quality of this biomaterial retrieved from deciduous teeth in guided bone regeneration procedures.

Methods: the subject of this case report was one 24-years-old female with vertical defect requiring bone augmentation where she had 1.1 element. Due to the lack of bone, it was necessary to perform a GBR procedure using autologous deciduous tooth-derived material made by Tooth Transformer®. After 6 months, we placed a 3.25 x 11.5 mm implant with flapless technique using a surgical guide which helped us to place the implant in the correct position for the prosthetic emergency. Immediate loading of the implant was performed using a resin crown.

Results: the present case demonstrated that deciduous teeth could be used as a source of bone substitute material, with good results in terms of integrations.

Conclusions: concluding we can state that using autologous deciduous tooth-derived biomaterial could be a good alternative since there is a less biological cost than others autologous materials need.

DIAGNOSTIC PROCESS OF RADIOTRANSPARENT LESIONS OF THE JAWS WITH DIFFERENT ETIOLOGY

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Aim: osteolytic lesions of the jaws are often asymptomatic and can be diagnosed only thanks to routine radiographic examinations or evident swelling. An accurate diagnosis is essential for the correct treatment and reduction of the risk of complications and/or progression of the disease. The aim of this report is to highlight the importance of histological examination when osteolytic lesions have similar clinical features.

Methods: a 13-year-old woman was referred with complaint of mild pain in the region of 46. Intraoral examination revealed a light swelling on 47. The radiographical examination showed osteolytic lesions apical to teeth 46 and 47. The vitality test was negative for 46, uncertain for 47. Therefore, the lesion on 46 was confirmed to be an acute apical periodontitis, meanwhile the one on the 47 required further investigations. The CT scan highlighted the relationship of the lesion with the mandibular canal and the perforation of the lingual cortex which allowed the FNC.

Results: FNC assumed the diagnosis of giant cell granuloma, so the treatment of the osteolytic lesions was different. The lesion on tooth 46 was treated with endodontic therapy. 47 was extracted and lesion was excised and later analysed by histological exam that confirmed the presumptive diagnosis of giant cell granuloma.

Conclusions: giant cell granuloma is a benign tumor that prefers the mandible and women under the age of 30. Its surgical removal is necessary and the post-operative phase requires careful follow-ups. The presumptive diagnosis must always be confirmed by histological examination.

CONSERVATIVE SURGICAL MANAGEMENT OF AN IMPACTED MANDIBULAR THIRD MOLAR: CASE REPORT

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Aim: mandibular third molar impactions are frequent. In many cases, teeth in dysodontiasis are interested by different kinds of disorders, such as caries, pericoronitis, or periodontitis. These pathological conditions are the reason why surgical extraction is recommended.

The purpose of the present case report is to document the extraction of an impacted mandibular third molar in position 4.8 using a conservative approach.

Methods: a 70-year-old patient presented with pain and swelling in the lower right jaw.

Through the evaluation of a orthopantomography (OPT) and CBCT we observed the presence of 4.8 in deep inclusion near the inferior alveolar nerve (IAN).

Based on these radiographic and clinical considerations, the patient underwent treatment through the extraction of the impacted teeth.

Under loco regional anesthesia, an intrasulcular incision was made and a full-thickness mucoperiosteal flap was raised to preserve the interdental papillae and the periosteal vascular-nervous structures, minimizing any postoperative pain and swellings.

After osteotomy and odontomy the wisdom tooth was removed. Subsequently, the alveolus is curetted and irrigated whit a saline solution.

Finally, the flap was sutured using silk thread 4/0 performing horizontal mattress suture.

Results: clinical checks were carried out at 1 week, 3, 6 and 12 months.

The patient reported no complication of paresthesia and significant tissue regeneration was observed.

Conclusions: through careful planning of the case, appropriate surgical technique, correct management of soft and hard tissues and close attention to anatomical structures, it was possible to perform an extraction of a lower impacted tooth safely and minimizing the risk of postoperative complications.

A NEW MAGNETIC RUBBER DAM AS A MEMBRANE IN GUIDED BONE REGENERATION: AN *IN VITRO* STUDY

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Aim: GBR is a surgical technique that allows bone regeneration using membrane barrier. This study aims to analyze the intensity and the action on cell viability of a magnetic static field (SMF) generated by a custom-made rubber dam with neodynium-iron-boro powder magnetized in addition to its effect on timing of bone healing.

Methods: the study involves three six-wells (1,2,3) with different incubation time (24h; 48h; 72h) containing:
1: cells exposed to SMF (with the magnetic dam);
2: only cells;
3: cells with normal dam.
The device is made of three layers of hygienic dental dam with size 2x3 cm and thickness of 0,15 mm. The sheets are fused together with some magnetic dust inside.

Results: the Intensity of the SMF turned out to be particularly low depending on the mass of the magnet (750G, 400G, 900 G on the three sites), but, despite its small size, it's capable of affecting the surrounding tissue. An analysis of cell viability during 24h shows no statistically significant differences compared with control; while after 72h there was a decrease in cell proliferation compared with control and the well with unmodified dam.

Conclusions: stimulation with SMF seems to have a negative effect on proliferating cells while leading to an increase of differentiation, activation and mineralisation.
Further studies should be done to investigate the cytotoxicity of magnetised membrane and its action on osteoprogenitor cells.

PROGRAMMED RELEASE INTRAOSSEUS ANESTESIA IN IMPACTED THIRD MOLARS SURGICAL EXTRACTION

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Aim: to compare two anesthetic techniques during all phases of surgical extractions.

Methods: 39 patients were enrolled; each patient is both a case and control: the impacted two third molars and the procedure anesthetic was random assigned to one site or contralateral; sides were divided into two groups: group 1 was treated with a conventional method (traditional inferior alveolar nerve block IAN) while group 2 was treated with alternative method (computerized intraosseous anesthesia).

Results: traditional technique is faster in execution compared to alternative method, which takes 3 minutes to be administered; but to obtain the onset of IAN block it is necessary to wait for an average of 6 minutes, while the latency of intraosseous anesthesia is virtually zero. Vincent's sign and lingual nerve anesthesia occurred in 100% of cases for group 1 while in group 2 only 13% (4 cases lingual anesthesia occurred).
Duration of perceived anesthetic effect for group 1 was on average 192 minutes, while for group 2 of 127 minutes ($p < 0.001$). The difference between the heart rate Δ of group 1 and group 2 is statistically significant in group 2. There were no postoperative complications reported nor for cases treated with technique conventional anesthesia or for those treated with intraosseous technique. Patients preference marked a 67% preference for the alternative technique, 20% for the traditional,13% indifferent.

Conclusions: in the treatment of impacted lower third molars, the obtained results demonstrate that intraosseous anesthesia is a viable alternative to standard anesthesia.

SURGICAL APPROACH OF TONGUE EARLY CANCER WITH ND: YAG LASER, HA AND PERICARDIUM MEMBRANE

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Aim: this paper describes the management of an *in situ* carcinoma of the tongue margin treated by surgical excision performed with Nd:YAG laser in combination with the application of hyaluronic acid (HA) and a resorbable porcine pericardium membrane. Advantages of using HA are linked to its hygroscopic, viscoelastic, bacteriostatic, anti-inflammatory, anti-oedematous and osteoinductive nature. Furthermore, HA stimulates clot formation, induces angiogenesis and increases osteogenesis. The resorbable membrane, in addition, allows adhesion, spreading, differentiation of stem cells and promote rapid tissue repair. The case concerns a 49-years old male patient presenting a non-homogeneous leukoplakia on the right tongue border without any symptom, moreover no tobacco or alcohol history is present. The biopsy reveals a *in situ* carcinoma.

Methods: after loco-regional anesthesia, excisional surgery of the lesion is performed with Nd:YAG laser (10Hz; 3.5W). Subsequently, HA gel is applied to the surgical site. The last step involves the placement of a resorbable porcine pericardium membrane, previously hydrated with saline and shaped to the profile of the surgical defect.
The membrane is then secured with resorbable sutures Vicryl 5.0.

Results: the follow-up shows rapid and good healing of the surgical site with no functional impairment. The patient reports no post-operative pain and denies the recourse to NSAIDs.

Conclusions: the properties of HA and resorbable membrane make their application ideal for soft tissue procedures in oral cavity and in regenerative surgery.

EFFECTIVENESS OF AUTOLOGOUS PLATELET CONCENTRATES IN SINUS ELEVATION SURGERY: AN OVERVIEW

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Aim: maxillary sinus lift is a predictable procedure for the rehabilitation of the posterior maxilla. The current overview aimed to summarize the findings provided by systematic reviews (SRs) and metanalyses (MAs) on the effectiveness of autologous platelet concentrates (APCs), as solely grafting material or with biomaterials in sinus lift surgery, and to assess the methodological quality of the included SRs.

Methods: PubMed, Scopus and Cochrane Library have been explored up to 31st October 2022. SRs and MAs discussing the effectiveness of APCs in sinus lift were included. Clinical outcomes as survival rate, implant stability, implant failure, postoperative complications, radiographic outcomes, as bone gain, bone volume and bone density, and hystomorphometric outcomes were considered. The methodological quality of the included SRs was assessed using the updated version of "A Measurement Tool to Assess Systematic Review" (AMSTAR-2).

Results: twenty-eight SRs meet the inclusion criteria. In short-term period, positive clinical outcomes, new bone formation and absence of biological complications were observed when APCs were used on their own or in combination. Nevertheless, no favorable additional effects in long-term period were observed. The methodological quality of the included reviews ranged between critically low (3 studies) and high (9 studies).

Conclusions: the current overview of SRs pointed out the need of high-quality SRs evaluating the role of APCs in sinus lift through network MAs, in order to identify the most powerful material for the sinus augmentation surgery.

PIEZOELECTRIC OSTEOTOMY FOR DISTRACTION OSTEOGENESIS OF ANKYLOSED PERMANENT FRONT TEETH

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Aim: the aim of this study is to describe a long-term follow-up of a case series of ankylosed permanent front teeth (APFT) repositioned by orthodontic displacement of a dento-alveolar block according to distraction osteogenesis procedure.

Methods: five patients in permanent dentition who needed orthodontic treatment with fixed appliances, with a chief complaint of irregular teeth eruptions in the anterior area and an APFT, were enrolled in the present study. Before the surgery, the space for the repositioning of the ankylosed tooth was orthodontically created. Intraoperatively, a mucoperiosteal flap was elevated and two vertical osteotomies were connected with a single horizontal osteotomy, both performed with a piezoelectric surgery device; the flap was then replaced in its original position and sutured. After 10 days from the surgical procedure, the distraction device was bonded to the maxillary teeth. Following a latency period of 4 days, the distraction of the dento-alveolar block was started and the movement of the ankylosed treated tooth over time were recorded.

Results: at the 24-month follow-up, the maxillary anterior gingival margins were improved, alignment and leveling were completed in both arches. A slight relapse (0.5 mm) was observed after 1 year and then stable in the long term.

Conclusions: this study indicated the effectiveness of the combined surgical-orthodontic approach using osteotomy performed with a piezoelectric surgery device and segmental alveolar bone distraction for the treatment of APFT.

AUTOLOGOUS PLATELET CONCENTRATES IN THE PREVENTION AND TREATMENT OF MRONJ: AN OVERVIEW

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Aim: medication-related osteonecrosis of the jaw (MRONJ) is a progressive bone destruction in the maxillofacial region in patients under current or previous treatment with antiresorptive and/or angiogenic agents. The current overview aimed to summarize the results provided by the systematic reviews (SRs) and meta-analysis (MAs) on the effects of autologous platelet concentrates (APCs) in treatment and prevention of MRONJ and to evaluate the methodological quality of the included SRs.

Methods: three electronic databases have been explored. SRs concerning the effects of APCs on the prevention and treatment of MRONJ were included up to November 2022. Clinical outcomes as the incidence of MRONJ, soft and hard tissue healing and transition from a severe to a milder state of osteonecrosis were considered. The methodological quality of the included SRs was evaluated using the version of "A Measurement Tool to Assess Systematic Review" (AMSTAR-2).

Results: thirteen (13) SRs were included. When APCs were applied before after tooth extraction, no differences in the incidence of MRONJ were observed. When APCs were associated to surgery, they showed no difference in complete healing and transition from severe to mild state, except for the reduction of healing time and improvement of quality of life. The methodological quality of the included reviews ranged from low (3 studies) to high (2 studies).

Conclusions: the review showed the need for high-quality SRs that are eligible for meta-analysis, in order to determine the contribution of APCs in the prevention and treatment of MRONJ.

MULTIDISCIPLINARY APPROACH TO PERSISTENT ODONTOGENIC CHRONIC PANSINUSITIS: CASE REPORT

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Aim: sinusitis is an acute or chronic inflammatory process affecting mucous membranes of paranasal sinuses. Odontogenic sinusitis may be due to an odontogenic infection or to the presence of foreign bodies within maxillary sinus (e.g. implant fixtures). A case of recurrent chronic odontogenic pansinusitis was surgically treated to have simultaneous removal of implant fixtures protruding into the right maxillary sinus and Functional Endoscopic Sinus Surgery (FESS).

Methods: a 70-year-old female with history of chronic sinusitis, already subjected to right maxillary sinus FESS, reported nasal suppuration and headache. Panoramic and CT scans showed a chronic-hyperplastic sinus inflammation of right maxillary, ethmoidal, sphenoid and frontal sinuses, associated to the presence of two implant fixtures positioned about 10 years earlier and protruding into the maxillary sinus. Firstly, medical therapy was carried out, but the symptoms were not resolved. Considering the potential aetiological role of the fixture and the need to restore the physiological conditions of the paranasal sinuses and nose, a complete endoscopic right sinus surgery and contextual removal of implants were performed.

Results: during surgery inflammatory tissue around the implants was and sent for histopathological examination; microbiological exam was positive for *Staphylococcus Epidermidis*. The patient was followed-up at 7 days, 1 month and 3 months.

Conclusions: pain was reduced after surgery, with local good healing and absence of complications. When facing sinusitis potential need and benefits from a multidisciplinary approach should be considered.

IMMEDIATE IMPLANTS WITH LATERALIZATION OR TRANSPOSITION OF THE INFERIOR ALVEOLAR NERVE

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Aim: in inferior jaw, vertical reconstructive procedures are less predictable and more invasive due to the bone quality and the inferior alveolar nerve position. Indeed, partially edentulous patients in the posterior and premolar area are very challenging for clinicians.

This retrospective study aims to evaluate advantages, complications, and follow-up of implant placement with immediate loading without reconstructive materials but using the inferior alveolar nerve transposition or lateralization with or without recission of the incisal nerve respectively.

Methods: patients with a follow-up of 4 years and implant placed by these techniques were included in the evaluation. Patients affected by severe systemic diseases were excluded from the study.

Results: eight patients were analyzed. Patients showed few short term post-surgical compliances after the surgery and the implant survival rate was 100%. The quality of native bone was higher than reconstructive bone even if it is done by autologous bone because any types of graft have a percentage of resorption. Using these surgical approaches all the native bone has been utilized for the implant stability without the risk of non-absorbable bone substitutes. Moreover, this implant therapy could be considered acceptable in terms of implant success and survival rates compared to other studies of literatures and even the gold standard to perform only one surgery with an immediate provisional loading.

Conclusions: the implant placement with immediate loading in mandibula in partially edentulous patients could be considered as a good surgical and clinical approach without reconstructive procedures but using the inferior alveolar nerve transposition or lateralization.

UNICYSTIC AMELOBLASTOMA MIMICKING A SOLITARY BONE CYST: REPORT OF THE CONTROVERSIAL CASE

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Aim: ameloblastoma is a locally invasive benign tumor, characterized by slow growth ad painless swelling, causing expansion of cortical bone. The same features are present in the unicystic variant, which has typically unilocular radiographic appearance, macroscopically cyst nature and relatively better response to conservative treatment. The unicystic variant accounts for 5 to 22% of ameloblastomas. Gold standard treatment is surgical, conservative or radical based on the clinical and radiographical features of the tumor.

Methods: a 38-year-old male patient was referred to the Department of Oral Medicine and Surgery of the University of Parma in November 2021 for a suspected asymptomatic cyst located adjacent vital teeth (45-46). The CBCT highlighted a radiolucent area of about 12.1 mm x 9.3 mm with well-defined margins.

Results: an excisional biopsy was schedule, but during surgery the cavity appeared empty, leading to an initial diagnosis of a solitary bone cyst.

After 10 months of follow-up, the volume of the cavity was radiographically increased in size. Eventually, a more radical surgery was performed in December 2022 with a suspected diagnosis of unicystic ameloblastoma. Small tissue fragments of the cyst wall (cystic lining type) were taken to perform the histopathological examination.

The histological analysis confirmed the definitive diagnosis of unicystic ameloblastoma.

Conclusions: the aim of this case report is to draw attention to the complexity of clinical diagnosis and the importance of a precise histological diagnosis to perform the right treatment.

THE IMPLANT STABILITY AND BONE HEALING USING NEW STATIC MAGNETIC COVER SCREWS: A ISQ STUDY

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Aim: evaluate the effects of static magnetic fields (SMFs) generated by cover screws on implant stability using resonance frequency analysis (RFA) and surrounding soft tissue health over a 90-days observation period.

Methods: five patients ranging 60-65 years were enrolled with partial or full edentulism, who have elected to receive dental implants for fixed prosthetic rehabilitation in 3.6 and 3.7 area. After implant placement, one implant was supplied with titanium cover screw (control, G1) while the other with static magnetic Supercharged® cover screw (test, G2) for the next 50 days. During the follow-up visits at 0, 7, 14, 21, 50, and 90 days a RFA was performed with Osstell Mentor to investigate the stability of G1 and G2.

Analysis and multiple comparisons were performed to identify the time points in which the difference from baseline was significant.

Results: this result showed how all the differences in the stability values were significantly higher in G2 compared to the baseline in all the times considered. During the follow-up visits, the soft tissues around the implants of both groups were healthy.

Conclusions: SMFs caused more noticeable increase in implant stability and less bone loss during the initial week of healing.

Although this study can be considered as pilot, SMFs might be used to speed up the osteointegration of implants.

HUMAN OSTEOBLASTS BEHAVIOR AND BONE DEPOSITION ONTO INNOVATIVE LASER TITANIUM SURFACES

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Aim: evaluation of the osteoblasts behavior and bone deposition onto two different innovative laser titanium surfaces (L1-L2) compared to sandblasted and acid-etched (SBAE) surfaces.

Methods: human osteoblasts (hObSCs) from adipose stem cells (hASCs) were sorted by flow cytometric analysis and induced to differentiate. The osteogenic differentiation was detected by alizarin red staining, and the ALP was evaluated with WB and RT-PcR analysis. The hObSCs were cultured onto L1 and L2 and compared to SBAE. The osteoblasts behavior was evaluated with MTT, SEM, EDAX, osteogenic markers with RT-PcR, and WB analysis of MEPE, ALP and OCN.

Results: the values of ALP mRNA and protein expression increased in the hObSCs. Alizarin red staining assay confirmed the osteogenic differentiation. Profilometric and SEM analysis showed relevant differences between SBAE, L1 and L2 specimens.

After 20 days of culture, SBAE specimens showed few hObSCs and isolated sites of bone matrix deposition. L1 specimens showed a monolayer of hObSCs with initial bone deposition. On L2 surfaces, were found flattened large stellate cells, cellular interconnections with titanium and a higher bone matrix deposition compared to SBAE and L1 specimens.

Conclusions: the innovative laser titanium surfaces showed high biocompatibility with hObSCs cultures and the absence of impurities. During the early phases of osteointegration, the titanium surface has an important role in the cell adhesion and bone deposition.

SOCKET PRESERVATION WITH CALCIUM SULFATE HEMIHYDRATE IN PATIENTS WITH TYPE II DIABETES

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Aim: to evaluate the efficacy of socket preservation with medical-grade calcium sulfate hemihydrate (CSH) after tooth extraction in patients with type II diabetes.

Methods: this single-blind randomized clinical trial included 42 teeth of 16 patients with type II diabetes and need for tooth extraction. Before the procedure, cast models were poured to make customised clear resin trays. After atraumatic tooth extraction, the socket was randomly assigned to the experimental (E, n = 22) or the control group (C, n = 20). To measure socket depth in 6 sites, the tray had 6 holes for the insertion of an anaesthesia needle with an endodontic stop (T0). The socket was filled with CSH (Surgiplaster G170) in the E group and with re-absorbable gelatin sponge (Cutanplast®Dental) in the C group. A collagen membrane (Condress®) and sutures (removed after 1 week) were placed in all patients. Depth measurements were repeated after 1 month (T1) and after 3 months (T2) under local anaesthesia with the same tray. Mean socket depth was compared with ANOVA.

Results: new bone formation in tooth sockets was significantly increased in the E group compared to the C group ($p < 0.05$) for all 6 depth measurements, at both T0/T1 and T1/T2.

Conclusions: in patients with type II diabetes, the use of calcium sulfate hemihydrate to preserve the tooth socket produced better results than gelatin sponge. Even though more research is needed, this study suggests that CSH may be a cost-effective choice for socket preservation in type II diabetes.

ASSOCIATION BETWEEN ALZHEIMER'S DISEASE AND PERIODONTITIS: A PILOT OBSERVATIONAL STUDY

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Aim: recently the correlation between systemic pathologies and the development of periodontal disease has been demonstrated, such as cardiovascular disease and diabetes. We aim to investigate a possible association between periodontal and Alzheimer's disease.

Methods: patients with a diagnosis of Alzheimer's disease underwent periodontal and neurological evaluation. Periodontal status was estimated through bleeding on probing and plaque index (BoP and PI), and neurological status was evaluated through Mini-Mental State Examination (MMSE) and cerebral vasculitis disease.

Results: thirteen patients were recruited in this study: 9 men and 4 women, with a mean age of 78.85±8.58. Regarding the BOP, 15.38% have bleeding <10%; 30.76% have between 10-30%; 58,84% have >30%. Regarding the PI, 38.46% have <50% and 61.53% ≥50%. Regarding the neurological examination, patients underwent MMSE with an average of 22.73±5.97. Of these, 23.07% have <18 points (severe impairment of cognitive abilities); 30.77% have 18-24 points (moderate or mild impairment); 46.16% have ≥25 points (normal cognitive abilities). Furthermore, 61.53% of the patients included in the study are affected by cerebral vasculitis.

Conclusions: based on our findings and considering that inflammation underlies the pathogenetic mechanisms of both diseases, the control of the inflammation through systemic and periodontal therapies can improve the localized inflammatory insult and slow down the progression of Alzheimer's disease.

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

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Aim: the aim of this study is to describe a conservative approach to treat a big odontogenic osteolytic lesion in a retromolar area.

Methods: a 63 years-old woman in healthy conditions was referred to the San Raffaele Oral Surgery Department. She complained pain related to a swelling zone in the retromolar area. The area was evaluated by two x-ray exams (OPT and CBCT) highlighting a multilocular osteolytic area. A biopsy was planned, and it was performed by an incisional technique. The sample was fixed in 10% buffered formalin and sent to the pathologist. Then it was processed by hematoxylin-eosin staining. A conservative treatment was chosen applying a 60 G plastic tube into lesion to provide a drainage and fixing it to the mucosa using a 2.0 silk suture. The patient was instructed to rinse daily the lesion's cavity using a 0.2% chlorhexidine solution connecting a syringe to the drainage tube for 9 months. The drain was removed after 12 months.

Results: the OPT and CBCT in the follow-up process demonstrate how the decompression technique allows healing while avoiding invasive techniques.

Conclusions: according to the literature, a conservative approach can be used to treat several osteolytic lesions. This kind of approach allows the cystic lesions to heal without invasive and invalidating techniques. A particular attention must be paid in the follow-up process to avoid recurrences; moreover, the patient must be compliant in following the rinse protocol and careful during speaking and heating to prevent fractures due to the weakness of the bone.

SCHWANNOMA ARISING FROM INFERIOR ALVEOLAR NERVE: A RARE CASE REPORT

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Aim: Schwannomas are benign nerve-sheath neoplasms composed almost entirely of Schwann cells and appear most frequently on the auditory nerve or peripheral nerves. They arise in the oral region infrequently. The aim of this study was to report a rare case of schwannoma derived from the inferior alveolar nerve.

Methods: a 34-year-old woman referred to us with complaint of pain and paresthesia of lip and chin evolving for 6 months. Extraoral examination revealed no facial asymmetry. Intraoral examination showed a healthy-looking mucosa, with absence of swelling, redness and pain on palpation. The teeth 3.4, 3.5, 3.6, 3.7 were absent. The OPT showed a well-defined radiolucent unilocular lesion in correspondence with left mental foramen. CT scan with contrast revealed the presence of the mental foramen dilated by solid expansion of about 12 mm, with erosion of the roof of the mandibular canal. So, an incisional biopsy was planned.

Results: the histopathological examination showed fibrous tissue with an intense inflammatory infiltrate mainly lymphocytic and nervous structures positive to the immunohistochemical staining for S-100 protein. The absence of high mitotic indices and necrosis confirm the diagnosis of benign schwannoma. The patient recovered a normal sensory function 3 months post-operatively.

Conclusions: Schwannoma arising from inferior alveolar nerve remains very rare.

This tumor requires a thorough anamnesis, clinical examination, imaging, and pathological examination. The positivity for S-100 protein in immunohistochemical staining can help the final diagnosis.

ALTERNATIVE TRANSINUSAL APPROACH FOR ECTOPIC IMPACTED UPPER THIRD MOLAR

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Aim: the treatment of maxillary ectopic third molars could be affected by surgical difficulties and complications. Different approaches have been described in literature such as trans-oral and Caldwell-Luc technique, extra-oral accesses, and endoscopic procedures. The aim of the present investigation was to evaluate an alternative approach for unusual impacted third molar by a transinusal surgical procedure trough a systematic review and a case report.

Methods: the literature screening was performed in accordance with the criteria of the PICO guidelines on PubMed/Medline, EMBASE, Cochrane. The clinical case, instead, shows a 38-year-old female subject with no relevant medical history with symptomatic impacted ectopic third tooth placed in the postero-lateral maxilla.

Results: the screening showed a total of 34 manuscripts. Two cases reported a wait-and-see approach, while the surgical removal was the most common treatment. The subject was treated by a trans-sinusal and a lateral antrostomy to achieve the ectopic tooth removal. No complications or events were reported during the surgery and the post-operative healing.

Conclusions: the ectopic maxillary third-molars found into the maxillary sinus represents a very rare clinical presentation that could take advantage from an in-chair intraoral transinusal pathway removal reducing the invasiveness, the morbidity and the healing of the surgical site in comparison to other surgical techniques.

USE OF L-PRF IN PATIENT WITH MEDICATION-RELATED OSTEONECROSIS OF THE JAW: CASE REPORT

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Aim: the aim of this study is both to highlight the outcomes of the use of L-PRF in patients with Medication–related osteonecrosis of the jaw (MRONJ) and to invite the clinicians to further research this surgical treatment in the case of MRONJ.
Methods: CARE Guidelines were followed to improve the reliability of this case report. A Caucasian forty–seven–year–old lady came to our observation complaining of jaw pain in the III quadrant after the extraction of tooth 3.6. The diagnostic process described by the "S.I.C.M.F." and the "S.I.P.M.O." was used to define the grade of the case, which resulted in a 3b. A 3-month drug-holiday before surgery was prescribed to the patient. During the procedure, both intra-oral and extra-oral approaches were performed.
Results: 3-month after surgery the fistula had not yet closed so we continued to medicate with H_2O_2 and saline solution once a week until its closure occurred about 6 months after surgery.
The 10-month follow-up showed the complete healing of the wound, the absence of any symptomatology related to MRONJ, and no radiographic evidence.
Conclusions: although the knowledge of MRONJ is increasing, there are still no protocols for the treatment with L-PRF. The literature and our clinical experience suggest that this technique could be a good option for the management of severe MRONJ, with the objective of conducting new and more consistent studies on the subject.

MAXILLARY ELEMENT EXTRACTION WITH MAGNETIC MALLET®: PRESENTATION OF A CASE REPORT

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Aim: considerations and indications for extraction of maxillary dental elements by magneto-dynamic technique using a new magneto-dynamic device: Magnetic Mallet®.
Methods: 50 maxillary teeth in 35 patients were extracted, 20 men and 15 women, average age 49.12±20.62. Eight of the patients underwent multiple extractions. The extractions were mainly performed due to periodontal disease and destructive caries. The insert was inserted into the gingival sulcus and dislocation was circumferential starting from the mesio-vestibular portion at a rate of 1 stroke per second. The inclination of the insert was variable from 0° to 45° depending on the tooth to be extracted. Clinical and socket healing, by endoral radiographs, was assessed at 21 days.
Results: the most frequently used inserts were EXTR2 and EXTR3. Clinical evaluation of soft tissue at 21 days showed good tissue response.
Radiologic 'survey revealed an increase in bone radio opacity of the post-extraction socket probably to be referred to bone compaction during extraction.
Only one of the 35 patients had a complication characterized by postextraction alveolitis that was resolved without sequelae for the patient.
Conclusions: magneto-dynamic technology, applied to upper jaw dental extractions, proved to be an effective technique by simplifying the dislocation steps, little traumatic for the patient and easy for the clinician.

GINGIVAL ENLARGEMENT: A BIOLOGICAL COMPLICATION OF PERI-IMPLANTITIS?

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Aim: our aim is to describe a case of oral nodular fasciitis (NF) associated with implants in a woman patient.
Methods: we report a case of a patient who was referred to the Unit of Oral Surgery at Policlinico "G. Martino" of Messina for the presence of a rapidly evolving lesion on the alveolar mucosa of the 3° quadrant.
Case presentation: a 57-year-old woman come to our attention referring from 10 days the presence of an asymptomatic neoformation in the left lower jaw region. The patient referred that she is suffering from hypertension and a brain aneurysm. She was assuming double anti-aggregation drugs. The intraoral examination revealed a white and red swelling lesion of fibro-elastic consistency, measuring 4 cm x 3,5 cm, on the alveolar mucosa of the 3° quadrant. The lesion was not associated with pain, but mild discomfort during phonation, deglutition and mastication. The radiographic examination highlighted the presence of two implants underlying the lesion. Given the rapid evolution, the diagnosis of sarcoma or pyogenic granuloma was suspected. The incisional biopsy was performed, and the diagnosis of a hyperplastic lesion excluded the malignity of this neoformation. Therefore, the surgical excision was performed, and the final diagnosis of NF was made. The patient is currently under follow-up at our hospital.
Conclusions: NF is a rapidly proliferating fibroblastic lesion that can present as a tumor-like mass. It can be difficult to distinguish NF only through a physical examination; the biopsy is essential for a definitive diagnosis of this disease.

DIGITAL GUIDED SURGICAL APPROACH IN IMPACTED SUPERNUMERARY TOOTH EXTRACTION

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Aim: the aim of this study is to propose a digital guided surgical approach to remove impacted supernumerary tooth in posterior mandibular region. The digital workflow could enhance precision and accuracy during the surgery to prevent iatrogenic injury and to improve postoperative healing. using diagnostic technologies such as Cone Beam Computed Tomography (CBCT), 3D planning softwares and 3D printing technologies (CAD/CAM).
Methods: we describe a case-report of a impacted supernumerary tooth removal treated by the Oral Surgery Unit of University of Messina. Digital workflow was used to produce surgical templates, following different steps. After collection, radiographic data were imported into dedicated software. Dental arches three-dimensional rendering STL file and DICOM CBCT file were imported into virtual planning software. Impacted supernumerary tooth position was established after matching digital models and TC.
Results: one week later, good clinical soft tissue healing was observed. There were no postoperative complications and the healing process took place without any problems. Six months and one-year follow-up showed good clinical soft tissue healing. The proposed workflow helped the surgeon in pre-operative and intraoperative stages through accurate virtual planning and surgical guides realization. The use of customized 3D templates allowed better control of the osteotomy plans, flap management and faster surgical steps execution.
Conclusions: pre-surgical digital planning with 3D systems can provide useful intraoperative guidance and could help to further increase the accuracy of the procedure. The use of the digital guide plate made the impacted supernumerary tooth removal less invasive, faster and more accurate, whereas the flap design and osteotomy were more conservative. Furthermore, it allowed more favorable postoperative and better tissue healing.