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BOOK OF ABSTRACTS

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CRITERIA AND PROGNOSTIC FACTORS FOR SURVIVAL AND SUCCESS RATES FOR AUTOTRANSPLANTATION OF IMMATURE THIRD MOLARS TO THE AREA OF FIRST AND SECOND MOLARS: A SYSTEMATIC REVIEW AND META-ANALYSIS

AUTHOR: DARJA GOSTILO

Introduction

Autotransplantation of immature third molars to the first and second molar regions has emerged as a viable treatment option, offering significant benefits in occlusal function, dental aesthetics, and cost-effectiveness compared to implants or fixed prostheses. The success of this procedure is influenced by various prognostic factors, including the stage of root development, surgical techniques, and post-operative stabilization. While previous systematic reviews have assessed autotransplantation outcomes, most have focused on premolars or fully developed teeth. This study aims to systematically review and analyze the survival and success rates of autotransplanted immature third molars in the first and second molar regions, identifying key prognostic factors that influence treatment outcomes.

Materials and Methods

A systematic literature review and meta-analysis were conducted following PRISMA 2020 guidelines. Studies were sourced from Elsevier Journals (ScienceDirect), MEDLINE (PubMed), and Dentistry & Oral Sciences Source (EBSCOhost) databases, covering research from May 2004 to May 2024. Inclusion criteria required studies to report on the survival and success rates of immature third molars transplanted into first or second molar sites. Nine studies met the eligibility criteria and were assessed for risk of bias using the CASP guidelines. Quantitative data on survival and success rates were extracted and analyzed using MedCalc statistical software, employing a random-effects model for meta-analysis.

Results: The pooled survival rate of autotransplanted immature third molars was 91.9% (95% CI: 85.1%–96.7%), while the success rate was slightly lower at 90.2% (95% CI: 79.8%–97.1%). Key prognostic factors influencing outcomes included the developmental stage of the donor tooth, with superior results observed in teeth with open apices, likely due to enhanced potential for pulp revascularization and continued root growth. Innovative techniques such as computer-aided rapid prototyping (CARP) and platelet-rich plasma (PRP) were identified as potentially beneficial in optimizing healing and integration. Stabilization methods during early healing also played a crucial role, as excessive rigid fixation was associated with a higher incidence of ankylosis and inflammatory root resorption.

Conclusions: Autotransplantation of immature third molars in the first and second molar regions demonstrates high survival and success rates, making it a promising alternative to dental implants, particularly in young patients. However, variability in reported success criteria and follow-up durations limits definitive conclusions. Standardized protocols for assessing success, longer-term follow-ups, and further research on recipient site characteristics are needed to enhance the predictability and long-term outcomes of this treatment modality.

EVALUATION OF THE CLINICAL EFFECTS OF MAXILLARY ADVANCEMENT USING THE ALT-RAMEC TECNIQUE IN A SAMPLE OF CLEFT PATIENTS

AUTHOR: VALENTINA ISOLA

INTRODUCTION: The aim of this research is to contribute to the investigation of orthodontic techniques currently available for the treatment of patients with cleft lip and palate. The rationale of the research is that in patients with clefts, significant alterations in the growth of the maxilla often occur, with growth frequently reduced in all three dimensions. Specifically, an anterior inversion is determined by insufficient postero-anterior development of the maxilla. The alt-RAMEC protocol specifically targets this characteristic by performing a late orthopedic traction of the maxilla. The protocol leverages the pubertal growth spurt by selecting patients in the V2 or V3 vertebral maturation stages. Indeed, patients at this stage have not yet completed the ossification process of the circumaxillary sutures. With the alternating protocol of maxillary expansion and constriction, sutural disarticulation is achieved, enhancing the effectiveness of the subsequent maxillary traction.

MATERIALS AND METHODS: The study group consisted of 12 cleft patients that were selected according to criteria: age of 12+/-2,74 years at time T0 (before treatment); 13+/-3,38 at T1 (right after maxillary protraction) and 18,45+/-1,04 at TL (after 5 year from the treatment, to establish the long term results). Those patients were compared to a study group of 12 cleft patients with non-treated III class malocclusion, with ages of 11,3 +/-1,2 years at T0 and 18,7+/-2.2 at TL (at the completion of growth).
The protocol consists of a first phase involving palatal expansion and constriction using a double-hinged palatal expander for 9 weeks. A second phase of postero-anterior maxillary traction using orthodontic mini-screws and intraoral elastics, combined with the placement of a lingual arch, for a total duration of 3-4 months.
Patients underwent cephalometric analysis at time T0, before expansion, at time T1 after maxillary traction, and at time TL, at least 5 years after treatment. All results were normalized using the Shapiro-Wilk test (α=0.05) and were statistically significant according to the two-tailed T-test and the Wilcoxon signed-rank test.

RESULTS: The results between the times T1-T0 show an increase of 2.78° in the SNA angle and of 3,23° in the ANB angle, an anterior displacement of the N point by 1.08 mm and of the A point by 4.57 mm.
Comparing those results with the measurements obtained in the long term analysis, a maintenance of the obtained corrections was observed: SNA decreased only by 0,31°, ANB by 1,19°, the point N has shifted backward by only 0.12 mm.
A comparison was made with the same values measured in the control group, where the growth of the maxilla is significantly smaller and is accompanied by a worsening of the malocclusion.

CONCLUSIONS: The 9-week alt-RAMEC protocol with a double-hinged expander, followed by maxillary protrusion with bone anchorage and intraoral traction, is effective in achieving maxillary protrusion in cleft patients. The treatment also presents an effective maintenance of the correction in the long-term period. The system is effective and can help avoiding the need of maxillary advancement surgery at the end of the growth. It must be applied with the correct timing (pubertal growth spurt), the right expander and with an intraoral III class traction of 24 hours per day.

LONGEVITY AND COMMUNITY ORAL HEALTH: INTERVENTION IN DENTISTRY IN GREATER PORTO

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Introduction: Today, the main health problems focus on chronic diseases, particularly those associated with increased life expectancy, as they often require prolonged and complex treatments. Dental caries, periodontal disease, dysfunctions of the temporomandibular joint, chronic myofascial pain and edentulism are common concerns among the elderly population and compromise not only oral health, but also favor cellular senescence and impair general health. Objective: to present a research project and share the results of the pilot test.

Methods: This project is based on three main phases. It has been approved by the Fernando Pessoa University Ethics Committee:

Advanced Consulting

In the pilot test, 21 elderly people (over 65 years old) of both sexes who voluntarily agreed to take part in the study and signed an informed consent form were assessed. Non cooperative elderly people were excluded. An intra- and extra-oral examination was carried out and sociodemographic and clinical variables were collected, such as: O'Leary Plaque Index (PI), caries prevalence, edentulism, oral hygiene habits, denture hygiene and Body Mass Index (BMI). Oral health-related quality of life was assessed using the Geriatric Oral Health Assessment Index. A literacy questionnaire was designed by the research team and administered at three points: before, after the intervention and training, and four days later, allowing for a prospective and longitudinal measurement.

Training, Intervention

Lectures and practical sessions were held on the following topics: oral hygiene, self examination of the oral cavity, use of dental prostheses and oral cavity lesions.

Mobilization in Society.

An "Odontogeriatrics Seminar" was held at Fernando Pessoa University, where the elderly took an active part and gave real testimonies.

Results: Inadequate use of dentures had a negative impact on the functional and psychological dimensions. High levels of oral health literacy promote more effective hygiene practices. In the overall assessment of Oral Health-related Quality of Life, the discomfort dimension is a significant issue.
66.7% of the elderly did not brush their teeth regularly. There was a high DMFT (26.43) and PI (64.93) index, showing the high prevalence of oral problems. There was a statistically significant correlation between the amount of plaque and DMFT (r_s=0.498; p=0.022).
Before the intervention and training, there were several sensitive points in health literacy, particularly in the areas of oral hygiene, the impact of good oral health on healthy ageing and habits associated with the use of dentures. The results improved after the training. The average score remained high four days after the training.

Conclusions: We concluded that high BMI, poor hygiene practices, inadequate use of dental prostheses and low literacy negatively influence Oral Health-related Quality of Life.
Participants expressed high satisfaction with the interventions and expressed a desire for continuity. The institution that hosted the study stressed the importance of continuity for effective results.
Future prospects, already in the implementation phase, include:
·Providing primary oral health care
·Oral rehabilitation
·Daily support for institutions.
·Extension to all Social Centers in Greater Porto.

PATIENT EXPERIENCES WITH TEMPOROMANDIBULAR DISORDERS: A SURVEY ON THE PATHWAYS IN DIAGNOSIS AND TREATMENT

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Background: Despite the availability of evidence-based guidelines on Temporomandibular Disorders (TMD), some past theories of TMD aetiology, diagnosis and treatment are still diffused among clinical practitioners.
Objective(s): The study aims to gather and analyze patient experiences and outcomes related to their seeking care for TMD symptoms.
Methods: In November 2023, a survey to collect comprehensive data on patients' diagnostic journeys, treatment experiences, and outcomes was distributed through online platforms and TMD patient support groups in a variety of countries. Correlation between different variables was assessed and comparisons were made between patients with a different history of treatment-seeking experiences.
Results: A total of 153 participants filled out the survey. Of them, 31.4% (N=48) needed to consult two or three professionals, while some of them saw up to four or five (N=27, 17.6%). Moreover, patients experienced a wide range of pain duration time before receiving a diagnosis. Almost one third of patients were in pain for more than one year (N=43, 28.1%), and a substantial number never received appropriate care (N=30, 19.6%). Additionally, those patients who saw one or more dentists who emphasised abnormalities of dental occlusion or jaw position ended up consulting significantly more health providers before receiving a diagnosis than those who did not have that experience (p=0.0062).
Conclusion: There is a need to better implement knowledge about TMDs among health-care providers, starting from improving the quality of education at the university course level and continuing into various post-graduate educational offerings.
Keywords: Temporomandibular Disorders, Patients' experiences, TMD treatment, TMD specialist, dental education, Biopsychosocial model, Evidence- Based Dentistry

EXPLORING THE RELATIONSHIP BETWEEN MIGRANTS' ORAL HEALTH AND QUALITY OF LIFE: INSIGHTS FROM THE DMFT INDEX AND OHIP-14

AUTHORS: GOUVEIA, INÊS MARIA; CARVALHO, OLGA ; MANSO, ANA C. FLÔR-RODRIGUES, BERNARDO

Introduction: The rise in geopolitical conflicts and socio-economic instability has led to a significant increase in migration, contributing to greater demographic diversity globally. However, data on migrants' access to oral health services and the quality of care they receive remain scarce. Studies indicate that migrants experience the highest levels of oral health inequalities, which can significantly impact their overall well-being and daily lives**. Materials and Methods:** Data were collected using the Oral Health Impact Profile-14 (OHIP-14) questionnaire, administered to 66 migrant participants, followed by an assessment of decayed, missing, and filled teeth (DMFT Index). Statistical analyses were performed using SPSS (Version 29.0), with a significance level set at 5%**.**

Results: Migrants exhibited a high prevalence of dental issues, particularly dental caries (DMFT = 8.5). The mean OHIP-14 score was 7.30, ranging from 0 to 43, indicating a notable impact on quality of life. A strong positive correlation was observed between OHIP-14 scores and DMFT (Spearman's correlation coefficient: 0.838), suggesting that higher DMFT scores are associated with a greater negative impact on quality of life. These findings highlight the substantial effect of oral health problems, particularly caries, on migrants' well-being.

Conclusion: The oral health challenges faced by migrants extend beyond medical concerns, reflecting broader social inequalities. These findings highlight the urgent need for targeted interventions that address both the physical and socio-economic barriers limiting migrants' access to dental care. Factors such as language barriers, financial constraints, and a lack of culturally competent healthcare services further exacerbate oral health disparities and contribute to the marginalisation of migrant populations. Tackling these inequalities requires a coordinated effort among healthcare providers, policymakers, and social organisations to ensure that oral health services are accessible, equitable, and inclusive. Enhancing oral health outcomes for migrants can significantly improve their overall well-being and quality of life, fostering a more integrated and supportive society.

MICRO-COMPUTED TOMOGRAPHY EVALUATION OF PARTIAL INDIRECT ADHESIVE RESTORATIONS: EFFECT OF PREPARATIONS AND TRADITIONAL OR ADDITIVE CAM WORKFLOW

AUTHORS: ASJA SCALERA

Introduction: Indirect partial adhesive restorations, such as overlays, are widely used in dentistry to restore function and aesthetics. The growing demand for esthetics has led to increased usage of all-ceramic restorations, which can be fabricated through either traditional or digital workflows. Digital technologies, including intraoral scanners, CAD software, and 3D printers, offer potential benefits in terms of workflow and patient comfort. The long-term success of indirect restorations is closely tied to marginal and internal fit precision. The literature is still unclear regarding the accuracy of digital production methods compared to traditional techniques for producing overlays.
This original research evaluates the marginal and internal fit of lithium disilicate overlays produced using traditional and additive digital workflow. It also investigates the effect of variables such as the type of tooth preparation and the type of 3D printer on the final restoration accuracy.
Materials and Methods: Two extracted maxillary third molars were prepared with two different self-centering preparations: a preparation with three notches at the center of the tooth and a preparation with a mesial-occlusal-distal box. Impressions were taken using both traditional polyvinylsiloxane and digital intraoral scanners. Two different 3D printers (Asiga and Nobil Metal) were used in this study. Eighteen models were fabricated using traditional plaster and resin 3D printing methods. Thirty lithium disilicate overlays were then fabricated using heat-pressed and 3D-printed methods. Micro-CT scans of the prepared teeth, models, and overlays seated on the reference teeth were performed. To check the precision of the model production methods, a superimposition with 3D registration was performed between the scan of models and the reference tooth. On the scans, 14 measurements were taken for each model to evaluate the discrepancies between these and prepared tooth, and 28 measurements were taken for each overlay to assess the marginal and internal fit. Statistical analysis was conducted using one-way ANOVA.

Results: The results indicated that 3D-printed models were as accurate, or in some cases more accurate, than traditional plaster models. Regarding the marginal and internal fit of the overlays, 3D-printed restorations showed comparable accuracy to traditional heat-pressed ones. The type of preparation influenced the marginal accuracy of the restorations, with better results observed for preparations with notches. The accuracy of 3D printers varied, with the Asiga printer yielding better results compared to the Nobil Metal printer in terms of marginal fit and worst results in terms of internal fit.

Conclusion: Both traditional and digital workflows can be used to fabricate lithium disilicate overlays with clinically acceptable accuracy. The choice of 3D printer and type of preparation significantly impact the precision of overlays. This study demonstrates that 3D printing is an efficient alternative to traditional methods for producing indirect restorations in clinical practice.

TOOTH AUTOTRANSPLANTATION AS A PREDICTABLE APPROACH FOR FUNCTIONAL TOOTH REPLACEMENT

AUTHORS: JELENA ILJINA

Introduction: Tooth autotransplantation is a biological method of tooth replacement that involves the surgical repositioning of a donor tooth from one site to another within the same patient. This technique preserves the periodontal ligament (PDL), allowing for continued alveolar bone remodeling and proprioceptive function. It is particularly advantageous in growing patients, as it facilitates natural occlusal adaptation and prevents alveolar ridge resorption. Despite its potential benefits, the success of autotransplantation depends on various factors, including donor tooth selection, surgical technique, and postoperative management. This study aims to evaluate the clinical outcomes and prognostic indicators influencing the success rate of autotransplanted teeth.

Materials and Methods: A retrospective cohort study was conducted on 30 patients (age range: 12–35 years) who underwent tooth autotransplantation at a university dental hospital between 2018 and 2023. Donor teeth included developing premolars (n=18) and third molars (n=12), which were transplanted into sites of congenitally missing, traumatized, or severely decayed teeth. Standardized surgical protocols were followed, ensuring minimal trauma to the PDL during extraction and reimplantation. Postoperative assessments, including clinical evaluation (probing depth, mobility, pain, and inflammation) and radiographic analysis (root development, ankylosis, and external root resorption), were performed at 1, 3, 6, and 12 months. Statistical analysis was conducted using Kaplan–Meier survival curves and Cox proportional hazard models to identify factors influencing transplant survival.

Results: The cumulative one-year survival rate of autotransplanted teeth was 90%, with 27 of 30 cases exhibiting successful periodontal and functional integration. Teeth with incomplete root formation (n=15) demonstrated a higher success rate (93%) than those with fully developed roots (87%). External root resorption occurred in three cases (10%), primarily associated with prolonged extra-alveolar time. Radiographic follow-ups confirmed continued root growth in immature teeth, while periodontal parameters remained stable in 85% of cases. No cases of ankylosis were observed.

Conclusions: Tooth autotransplantation is a viable and cost-effective alternative to dental implants and prosthetic rehabilitation, particularly in young patients with ongoing skeletal growth. The success of the procedure is influenced by the stage of root development, preservation of the PDL, and adherence to atraumatic surgical protocols. Further long-term studies with larger sample sizes are required to establish standardized guidelines and improve prognostic predictability.

PRECISION & STABILITY GUIDED IMPLANT SURGERY FOR MAXILLARY BAR-RETAINED OVERDENTURE

AUTHORS: DIMITRIOS RAPTOPOULOS, MICHAIL RAPTOPOULOS

Introduction: Complete dentures rely entirely on mucosal support, which leads to gradual bone resorption over time and reduced functionality. On top of that, not all patients can tolerate them, mainly due to complete palate coverage and lack of stability. As a result, implant supported overdentures are proposed in exchange. Implant-supported overdentures not only optimize functionality, but they also help preserve alveolar bone structure. In the maxilla, the best option regarding an implant supported overdenture consists of a bar-retained overdenture supported by four implants. This case report details the full rehabilitation of an edentulous maxilla using guided implant surgery and a bar-supported removable complete overdenture, achieving excellent functional and aesthetic outcomes.
Materials and methods: A 70-year old male presented in the clinic with a partially edentulous maxilla, retaining 18, 17, 16 and 17 and a mandibular arch with only 34 and 35 existing alongside with a removable partial denture. Treatment plan was formed in consultation with the prosthodontist and the periodontist. It included the placement of four maxillary PALTOP implants (3.75 x 11.5 mm), connected by a metal bar to support a removable complete maxillary overdenture. A CBCT scan was performed to evaluate bone's condition and determine the optimal implant location for placing. Guided implant surgery was performed to guarantee precise placement and minimize post surgical complications. Lastly, bone graft was also placed in the buccal area to enhance buccolingual bone thickness, ensuring long-term implant stability.
Results: The patient had a regular follow up post surgically to ensure the avoidance of any potential post operative complications. Proper osseontegration around the implants and the alveolar ridge was achieved. 6 months post surgically, the definitive removable complete maxillary overdenture was a delivered, significantly improving the quality of the patient's oral health, reporting high satisfaction, comfort and masticatory efficiency of the prosthesis.

Conclusion: This case points out the effectiveness of a guided implant surgery to support a removable bar-retained over denture for the rehabilitation of a fully edentulous maxilla. The combined use of CBCT planning, guided surgery, and bone augmentation contributed to optimal 1 implant placement and long-term prosthetic success. The success of the prosthetic rehabilitation is evident in the patient's satisfaction, with restored masticatory function and stability. Furthermore, the improved aesthetics contributed to enhanced self-confidence, underscoring the functional and psychological benefits of the treatment.

TREATMENT OF GINGIVAL HYPERPIGMENTATION WITH A MINIMALLY INVASIVE TECHNIQUE: A CASE REPORT

AUTHORS: THEODOROS JOKAS

Introduction: Gingival hyperpigmentation constitutes a color alteration of the soft tissues, caused by the excessive deposition of melanin, that contributes to the endogenous pigmentation of the gingiva. High levels of melanin production may be observed in individuals of the African or East Asian ethnicity, in smokers or due to systemic factors. Following the differential diagnosis, gingival pigmentation, despite being benign, poses an aesthetic concern for the patient, since it is usually located in the upper or lower anterior region of the oral cavity. Various techniques have been introduced for depigmentation, such as bur abrasion, scalpel use or even cryotherapy, yet recently, there is growing data on the efficiency of laser use in such cases.

Aim, Materials and methods

The aim of this report is to introduce a new technique, which combines the advantages of laser irradiation and conventional surgery, to eliminate the discoloration of the gingiva. A 30-year-old female patient with no underlying conditions presented with this mucogingival condition in both the anterior maxilla and mandible and, no other signs of periodontal pathology. Under local anesthesia, laser excision of the surface epithelium with a 810-nm diode was performed. The remaining melanocytes located in the basal layer were removed with the use of a scalpel by gently excising the area. The tissues healed by secondary intention and the use of laser also ensured the lack of bleeding. The patient was prescribed with Chlorhexidine mouthwash for 10 days and no systemic antibiotics were needed.

Results

After 15 days the tissues were restored, and no pigmentation could be noted. No post-operation complications were reported by the patient nor was the healing process obstructed. The result was sustained in the next maintenance visits and no recurrence has been observed.

Conclusion: Various techniques have been proposed in the literature regarding gingival depigmentation. Previous methods of pigmentation removal include using scalpels only, bur abrasion, cryotherapy or electrosurgery. Those procedures have different degrees of patient morbidity, intraoperative need for anesthesia, increased bleeding and pain, risk of uncontrollable tissue removal and reported recurrence rates. The use of laser has significantly decreased the post-operative complications and increased the efficiency of the gingival depigmentation. Sufficient theoretical and clinical training in lasers constitutes a fundamental prerequisite for an effective and safe treatment.

INTERDISCIPLINARY MANAGEMENT OF A TRAUMA-COMPROMISED INCISOR IN STAGE III PERIODONTITIS PATIENT: A CASE STUDY

AUTHORS: DANIELA GUGLIELMINO

Background: A 38-year-old male presented at the University Clinic with increasing mobility of his mandibular incisors, seeking treatment to address the problem. Clinical examination revealed generalized periodontitis, as well as a history of dental trauma from a car accident, which had resulted in the avulsion of his maxillary incisors. Additionally, it is possible the trauma led to pulp necrosis and severe mobility of the discoloured 4.1, further compromising its prognosis. It's bone loss was very evident in the x-rays.
Case Presentation: A multidisciplinary approach was implemented to address both the periodontal disease and the traumatic injury. Initial therapy included non-surgical periodontal treatment to control the periodontal condition, followed by endodontic treatment of the affected incisor to manage the necrotic pulp. The patient underwent regular periodontal maintenance over the course of only 5 months.
Results: Despite the initial poor prognosis of the affected tooth, the combination of periodontal therapy and endodontic treatment resulted in significant stabilization. Five months post-treatment, clinical and radiographic evaluation revealed substantial improvement in periodontal health and complete preservation of the tooth.
Conclusion: This case demonstrates the value of an interdisciplinary approach in addressing trauma-aggravated periodontitis. By integrating periodontal therapy with endodontic treatment, we successfully restored function and stability, despite the tooth's initially poor prognosis. It underscores the significance of early intervention, collaboration across specialties, and ongoing periodontal maintenance in managing complex cases.

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