Stomatologija – Baltic Dental and Maxillofacial Journal, 2024. Vol. 26, No. 2

ISSN 1392-8589

Medical journal
STOMATOLOGIJA
Baltic Dental and Maxillofacial Journal

Date of issue 28th June, 2024
Quarterly journal

Printed by "Judex spauda".
Europos pr, 122. LT-46351 Kaunas. Lithuania
Printed on acid-free paper, effective with Volume 5. Issue No, 1, 2003
Printrun 250 copies.
The instructions to authors in English can be found at http://www.sbdmj.com

Editorial office:
I.Kanto str, 4-1. Kaunas. Lithuania,
mob. +370 612 71707, e-mail: zilinskas@sbdmj.com
edoffice@sbdmj.com
Web: http://www.sbdmj.com
http://www.sbdmj.kmu.lt
Published by:
Public Institution "Odontologijos Studija".
Lithuanian Dental Chamber.
Latvian Dental Association.
Lithuanian University of Health Sciences (LUHS). Faculty of Odontology
Vilnius University (VU). Faculty of Medicine. Institute of Odontology
Riga Stradins University (RSU). Institute of Stomatology
Estonian Dental Association
Tartu University (TU). Faculty of Stomatology

Editorial board:

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Vilnius University ir Lithuanian University of Health Sciences

Front page contains a photo of St.Apolonija, the patroness of dentists (statue is located in Vilnius. St.Peter and Povilas Church).
Past issues of the journal can be obtained at Kanto str, 4-1. Kaunas. Tel. +370 7 228307, mob. +370 612 71707.

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2nd International scientific-practical conference by

LITHUANIAN UNIVERSITY OF HEALTH SCIENCES
FACULTY OF ODONTOLOGY

Dear Colleagues,

I am delighted to invite you to the 2nd International Scientific-Practical Conference, "Digital or Conventional? What is More Effective?" taking place in Kaunas in January 2025.

Our program includes inspiring keynote speakers, engaging panel discussions, and scientific sessions where young researchers will showcase their latest work. This conference offers a valuable opportunity to exchange insights and connect with fellow scientists and practitioners.

Join us in Kaunas for an enriching scientific and practical experience at the 2nd International Scientific-Practical Conference.

We look forward to welcoming you!

Prof. Kristina Lopatienė
Head of the Department of Orthodontics
Lithuanian University of Health Sciences

CONTACT INFORMATION FOR REGISTRATIONS:

For Lithuanian participants at: medas.lsmu.lt (Konferencijos)
For registration questions please contact: viktorija.antanaviciute@lsmu.lt

For international participants please register at
https://tickets.paysera.com/en/event/digital-or-conventional-what-is-more-effective
Contact: Violeta Vite phone: +37060378930, email: violeta@creativa.lt

PARTICIPATION FEE AND PAYMENT INFORMATION:

	Till 31st December, 2024	From 1st January, 2025
Orthodontists, odontologists	**90€**	**120€**
Residents, students	**40€**	**60€**

PAYMENTS should be done via link

https://tickets.paysera.com/en/event/digital-or-conventional-what-is-more-effective

KEY NOTE SPEAKERS

Prof. MICHEL LE GALL (France)

Dr.UDO WINDSHEIMER (Germany)

Dr. SIMONE PARRINI (Italy)

Dr.CHRISTIAN SAMOILA (Romania)

LECTURES ABSTRACTS for KEY NOTE Speakers

Prof.Michel Le Gall

OPTIMIZING THE MASTERY OF MECHANICS COMBINING NEW TECHNOLOGIES AND METHODS.

Abstract: It is during certain strategic phases of orthodontic treatment that the need for third order control of the upper incisor takes on its full potential sense. These main phases are essentially those of leveling and decompensation of the upper arch, that concerning the retraction of the incisors and finally the more complex one of setting up the class mechanics II. The evolution of our techniques allows us to obtain such a result through reflection adapted mechanics, as well as by the use of specific equipment trained by the bracket/wire assembly. Optimized sliding and lowering friction ensure the use of forces most suited to tooth movement in respect for physiology.

Dr.Udo Windsheimer

COMPLEX SAGITTAL CASES TREATMENT WITH ALIGNERS - MYTH OR REALITY?

Abstract: During this presentation we will address the treatment of complex sagittal cases with aligners, examining whether successful outcomes are a myth or a reality in contemporary aligner orthodontics. We will delve into the biomechanics of sagittal discrepancies, highlighting the limitations and capabilities of aligner therapy in managing Class II and Class III malocclusions. Through a review of current literature and clinical evidence, we will discuss the integration of advanced digital tools that enhance treatment precision and predictability. Case studies will be presented to illustrate successful aligner treatments in challenging sagittal cases, along with strategies for overcoming common obstacles.

Dr. Simone Parrini

BIOMECHANICAL CONSIDERATIONS IN TREATING OPEN AND DEEP BITE CASES WITH ALIGNERS. DIGITAL WORK-FLOW IN A MODERN ORTHODONTIC PRACTICE.

Abstract: This presentation explores the biomechanical considerations essential for effectively treating open and deep bite cases using aligners, emphasizing the integration of digital workflows in modern orthodontic practices. We will discuss the unique challenges posed by these malocclusions and how aligners can be strategically employed to achieve optimal outcomes. Key topics will include the principles of force application, tooth movement mechanics, and the role of 3D imaging and modeling in treatment planning. Additionally, we will highlight studies demonstrating successful aligner therapy in complex bite cases, underscoring the importance of a comprehensive digital approach that enhances precision and efficiency. Attendees will gain insights into the latest advancements in orthodontic technology and their application in delivering patient-centered care. He is a member of the Italian Society of Orthodontics (SIDO) and of the European Aligner Society (EAS). He received certification of excellence with EBAO certificate (European Board of Aligner Orthodontics), and Model Display certification.

Dr.Christian Samoila

COMPLEX SAGITTAL CASES TREATMENT WITH FIXED APPLIANCES – WHAT IS REALLY WORKING?

Abstract: Addressing sagittal discrepancies has long been a key challenge in orthodontic treatment. Fixed appliance therapy offers both benefits and limitations. Understanding when and how to apply specific techniques or combine various anchorage devices is vital to achieving successful treatment outcomes. The shift from using extraoral forces to intermaxillary elastics, sagittal-first appliances, and TADs has significantly streamlined our daily practice. In this presentation, we will outline practical guidelines for managing the most common clinical scenarios.

PROGRAMME

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More information at: https://lsmuodontologyevents.lt/

ABSTRACTS

HOW DO ENVIRONMENTAL AND GENETIC FACTORS DETERMINE THE ANATOMY OF THE PALATE. THE RELATIONSHIP BETWEEN THE PALATE AND UPPER AIRWAY

ŠIDLAUSKIENĖ MONIKA, ŠIDLAUSKAS ANTANAS, ŠIDLAUSKAS MANTAS, LOPATIENĖ KRISTINA
Department of Orthodontics, Lithuanian University of Health Sciences

AIM: The aim of this study was to assess the relative contributions of genetic and environmental factors to variation in palatal parameters in twins with completed maxillary growth and to investigate a relationship between pharyngeal airway space and palatal measurements.
MATERIALS AND METHODS: The study sample consisted of dental casts of 85 twin pairs of the same sex. Mean age 17.95±2.83 years. All study subjects had a DNA test to determine zygosity of the twins. All linear landmark-based dimensions were calculated using an open source universal 3D processing and animation software Blender. Genetic analysis and heritability estimation were performed using maximum likelihood genetic structural equation modelling (GSEM). The cephalometric analysis was used to measure airway and skeletal dimensions.
RESULTS: The AIC values for each model were calculated The most parsimonious model and the lowest values were chosen. The AE and DE models were found to be the most parsimonious for variables. Variables with the best-fitting model of the contribution of factors (a2, c2, d2, e2) were counted. A model with specific environmental factors (e) and common environmental factors (c) was rejected. Heritability estimates were high for all widths, maxillary depths, palatal surface areas and palatal volumes, ranging from 0.48 to 0.8. The palate area and volume were directly proportional to PCV – AH (r=0.28; p=0.002) and SPT (r=0.2; p=0.047). Intercanine distance at gum line and intercanine hight were correlated with ANS-AH angle (r=0.19; p=0.046); (r=0.26; p=0.007) respectively.
CONCLUSIONS: Palatal parameters have high heritability and were found to be under strong additive genetic control. Variable PCV- AH is determined by the common environmental factors and it has direct relationship with palate surface. Intercanine distance is correlated with ANS – AH. Both parameters are determined by genes. These results can help plan orthodontic treatment in patients with breathing disorders.

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PREVENTION OF ORAL DISEASES DURING ORTHODONTIC TREATMENT

PETRAUSKIENĖ SANDRA
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AIM: Patients receiving orthodontic treatment are more prone to oral diseases due to increased biofilm accumulation by expanding plaque retention sites. Inadequate tooth brushing may lead gingival inflammation and dental caries. The aim was to evaluate the changes in patients' oral hygiene during the orthodontic treatment.
MATERIALS AND METHODS: A cross-sectional study enrolled 291 patients aged 10-17 year old attending Department of Orthodontics (LSMU Hospital) in Kaunas, Lithuania. The Bioethics Center of the LSMU approved the study (No. BEC-OF-14). Patients were asked to complete an anonymous self-administered questionnaire before the appointment. Participation was voluntary and anonymous; thus, the return of completed questionnaire was considered as acceptance to participate. Statistical data analysis was performed using SPSS 22 version. Statistical evaluation was by means of Chi-squared tests and the univariate logistic regression analysis, including odds ratio (OR) and its confidence interval (95%CI). P-value ≤0.05 was set to indicate statistically significant differences.
RESULTS: The mean age among participants was 12.98 (SD=2.36) years. Girls (56.8%) prevailed in the study (p = 0.397). 61.6% of participants reported brushing their teeth at least twice a day. Comparing to patients non-receiving orthodontic treatment, adolescents receiving orthodontic treatment tended to clean the tongue (OR=1.712 [1.059-2.767], p=0.028) and to rinse the mouth after the meal (OR=1.707 [1.048-2.781], p=0.032). More patients receiving orthodontic visited dental hygienist to perform professional oral hygiene than patients of control group (45.5% vs. 31.5%, p=0.024). Considering the type of orthodontic treatment, significantly more patients with fixed appliances reported about major changes in oral hygiene habits than patients with removable appliances (36.4% vs. 15.0%, p=0.002).
CONCLUSIONS: More patients with fixed orthodontic appliances significantly changed oral hygiene habits than ones with removable orthodontic appliances. Moreover, patients undergoing orthodontic treatment tended to visit dental hygienist more regularly. These patients were encouraged to receive oral hygiene instructions regularly.

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SUSTAINABILITY IN DENTISTRY

GIRLI KALLO
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AIM: Global environmental challenges such as climate change, resource depletion and pollution threaten human health. The healthcare sector contributes significantly to these issues, with dentisry being a resource-intensive field producing considerable carbon emissions and waste. The primary aim of this research paper was to provide an overview of sustainability in dentistry based on scientific literature. The second part of the paper analyzed the ecological footprint of an anonymous dental clinic.
MATERIALS AND METHODS: The research paper included a comperhensive literature review on sustainable practices in dentistry. For the second part of the research paper data was collected from an anonymous dental clinic using a carbon footprint calculator and a survey.
RESULTS: Key areas impacting sustainability in dentistry were identified, including sustainability knowledge in dental education, emission related to travel, energy and water usage, single-use plastics, waste managment etc. The analyzed dental clinic generates an annual carbon footprint of 7 451.8 kg CO_2, with an average of 1.8 kg CO_2 per patient visit. Waste managment practices show that the clinic produces 15 bags of general waste, 1 bag of infectious waste, 2 bags of cardboard and 0.5 bags of plastic weekly, resulting in annual waste-related carbon footprint of 1 454.6 kg CO_2. Water consumption is 58.8 m³ annualy, with a low contribution of 19.9 kg CO_2. Energy contributes 1 454.6 kg CO_2. Personal protective equipment contributes significantly to the carbon footprint, with gloves and single-use items being the primary sources of emissions.
CONCLUSIONS: Sustainability in dentistry can be achieved by implementing eco-friendly practices and rethinking operational protocols. Transitioning to reusable materials and improving waste management can reduce emissions and environmental harm. The dental clinic analysis revealed that the ecological footprint results were similar to those described in the literature.

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PARENTS‘ AWARENESS OF THEIR CHILDREN DENTITION, ORTHODONTIC APPLIANCES AND MAIN TREATMENT GOALS

JAKŠTAITĖ VESTA, ALMONAITIENĖ RŪTA
Vilnius University Zalgiris Clinic, Vilnius University, Institute of Odontology

AIM: To evaluate parental knowledge regarding their children‘s dentition type and condition, orthodontic appliances in use and main treatment goals.
MATERIALS AND METHODS: The study involved parents of children undergoing orthodontic treatment at Vilnius University Hospital Zalgiris Clinic. A questionnaire assessed parents' understanding of orthodontic treatment, their knowledge of the physiological and their children‘s dentition, the orthodontic appliances in use and main treatment goals. Responses were compared to orthodontists’ evaluations, with results recorded anonymously. Data analysis was performed using SPSS 29.0 and MS Excel. Statistical methods included descriptive statistics, Student’s t-test, One-Way ANOVA, and the χ^2 (chi-squared) test, with a significance level of $p<0.05$.
RESULTS: 121 respondents took part in the study, 88 of whom were women and 33 were men. In the theoretical part of the survey, parents‘ knowledge of children‘s dentition characteristics was satisfactory. In this part, 63.5±15.14% of all answers were correct. Parents were more accurate in the individual clinical case questions, scoring 72.86±12.57%. The overall result of both parts of the survey was that 66.62±11%. of all questions were answered correctly. There was a statistically significant difference in the level of knowledge between males and females ($p=0.003$), with mothers demonstrating a greater knowledge of their children's dentition and treatment. Most parents recognized thumb sucking (81.8%) and mouth breathing (75.2%) as malocclusion risk factors, but 6.6% found thumb sucking more harmful ($p=0.01$). Awareness of orthodontic appliances (85.1%) and treatment rationale (47.9%) was moderate. However, understanding of appliance purpose (35.5%) and care protocols (65.3%) remained incomplete.
CONCLUSIONS: parental knowledge regarding their children‘s dentition type and condition, orthodontic appliances in use and main treatment goals is average, with a poor understanding of appliance care and treatment goals. Mothers' knowledge is statistically significantly better than fathers'.

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SLEEP-RELATED BREATHING DISORDERS IN CHILDREN: PREVALENCE AMONG ORTHODONTICALLY TREATED VERSUS UNTREATED GROUPS

JAKŠTAITĖ VESTA, PAPLAUSKIENĖ NERINGA, RALYTĖ MODESTA, ALMONAITIENĖ RŪTA
Vilnius University Zalgiris Clinic, Vilnius University, Institute of Odontology

AIM: To assess the prevalence of sleep-related breathing disorders (SRBD) in children undergoing orthodontic treatment (OT) compared to non-treated (NT) patients. Objectives: to determine the prevalence of SRBD among patients receiving orthodontic treatment; to determine the prevalence of SRBD among untreated children; to compare the frequency of SRBD between OT and NT groups.
MATERIALS AND METHODS: The Pediatric Sleep Questionnaire (PSQ) was translated into Lithuanian and distributed to the parents of orthodontically treated and untreated patients at Vilnius University Zalgiris Clinic by orthodontists and pediatric dentists, respectively. The anonymous survey consisted of 75 closed-ended questions addressing various features of pediatric obstructive sleep apnea. Responses were collected from 100 patients (OT n=50, NT n=50; 48 males, 52 females; mean age 10.48±2.91 years). Statistical analysis was conducted using Chi-square tests of independence and descriptive statistics in MS Excel and R Commander. Statistical significance was defined as $P<0.05$.
RESULTS: The overall prevalence of SRBD in the study sample was 2%, with no significant difference between OT and NT groups (1% in each group). Notably, 52% of OT children typically slept with their mouths open compared to 30% in the NT group, though the difference was not statistically significant ($p=0.05$). OT patients were significantly more likely to breathe through their mouths during the day (28%) compared to NT children (8%, $p<0.05$). No significant differences were found regarding tonsillectomy (48% OT vs. 60% NT, $p>0.05$). Bruxism was more prevalent in OT children (18%) than in NT children (6%), but this difference was not statistically significant ($p>0.05$).
CONCLUSIONS: The prevalence of SRBD is low, however similar in both groups. Therefore, identifying SRBD should be a routine aspect of both orthodontic and pediatric dental practices.

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CONSERVATIVE MANAGEMENT OF WHITE SPOT LESIONS IN ORTHODONTIC PATIENTS

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Department of Preventive and Paediatric Dentistry, Lithuanian University of Health Sciences

AIM: To evaluate the efficacy of conservative approaches for managing white spot lesions (WSLs) in orthodontic patients, focusing on non-invasive treatments that preserve enamel integrity and enhance aesthetics.
MATERIALS AND METHODS: A comprehensive review of WSL management strategies was conducted using databases such as Web of Science, PubMed, Google Scholar, and ScienceDirect, emphasizing non-operative interventions before, during, and after orthodontic treatment. Case reports from the Department of Preventive and Pediatric Dentistry, Lithuanian University of Health Sciences were analyzed, where resin infiltration with ICON® (DMG America) was used to treat WSLs pre- and post-orthodontic therapy. The impact of resin infiltration on enamel remineralization and aesthetic outcomes was assessed.
RESULTS: The literature review showed that, prior to orthodontic treatment, patient education on optimal oral hygiene and the use of fluoride-based products (toothpaste, mouth rinses, varnishes, gels, and foams), alongside calcium-phosphate systems and preventive measures (e.g., probiotics, polyols, antiseptics, and nanohydroxyapatite), is beneficial for WSL management. During treatment, regular professional cleanings, reinforcement of oral hygiene, and the application of high-concentration fluoride products, fluoride-releasing materials, CPP-ACP, polyols, chlorhexidine, and self-assembling peptides are recommended. After treatment, promoting natural remineralization through good oral hygiene and remineralizing agents is key. For severe lesions, minimally invasive treatments like resin infiltration, micro-abrasion, and bleaching may be considered. Resin infiltration with ICON® has been shown to improve the aesthetic appearance and structural integrity of enamel, reducing lesion visibility and enhancing remineralization. This technique also provides a barrier against further demineralization, thus preserving dental structures during orthodontic treatment.
CONCLUSIONS: Effective management of WSLs should adopt a multifactorial approach, emphasizing the prevention of demineralization, biofilm inhibition, and remineralization. Resin infiltration with ICON® is an effective and minimally invasive solution for managing WSLs in orthodontic patients, addressing both functional and cosmetic concerns.

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AN EVALUATION OF SLOT SIZE VARIATIONS IN SELF-LIGATING BRACKET SYSTEMS

PAPLAUSKIENĖ NERINGA, ALMONAITIENĖ RŪTA, BERLIN VILIJA
Vilnius University Hospital Žalgiris Clinic, Vilnius University, Institute of Odontology

AIM: Precise slot dimensions are essential for achieving accurate three-dimensional tooth-moving forces because they ensure a close fit between the wire and the bracket slot. Any deviations in slot size can lead to incomplete transmission of orthodontic forces to the tooth and surrounding tissues. This study aims to assess the accuracy of slot dimensions in six different self-ligating bracket series.
MATERIALS AND METHODS: The slot sizes of 240 brackets from six different brands (Forestadent BioQuick, GC Orthodontics Experience Metal RC, American Orthodontics Empower2, Ormco DamonQ2 and Damon 3MX, and Unitek Victory Series Active Self-ligating brackets) were captured using a Bunker Dimension ICON atomic force microscope. Measurements were then analyzed with the ZWCAD 2018 program. Statistical analysis was conducted using IBM SPSS Statistics 22, with significance set at $p<0.05$.
RESULTS: In all six bracket designs, the average slot sizes were larger than the standard 0.022” slot, with external dimensions being significantly larger than internal ones ($p <0.001$). The DamonQ2 brackets were closest to the 0.022” standard, within 2% (±0.00037”), followed by the Empower2 and Experience Metal RC brackets at 3% (±0.00074” and 0.0007”), BioQuick and Victory Series Active Self-ligating brackets at 5% (±0.00102” and 0.00115”), and the Damon3MX brackets at 6% (±0.00139”). The Empower2 and BioQuick brackets had nearly parallel slot walls, while the others showed slight divergence. There was significant differences in slot precision among all the bracket systems studied, with the DamonQ2 brackets showing the highest precision (0.02215”±0.00068”) and the Damon 3MX brackets showing the lowest precision for slot (0.02373”± 0.00081”) ($p<0.001$).
CONCLUSIONS: The actual slot size of a self-ligating bracket is likely to be larger than the advertised nominal value within a given bracket series. This discrepancy could lead to a loss of precise three-dimensional tooth positioning.

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UNTREATED IMPACTED TEETH WITH THE RESORPTION OF ADJACENT TEETH: WHAT IS HAPPENING OVER TIME?

RALYTĖ MODESTA, MONTRIMAITĖ MONIKA, ALMONAITIENĖ RŪTA
Vilnius University, Institute of Odontology

AIM: Evaluate the progression of root resorption of adjacent teeth due to untreated impacted teeth.
MATERIALS AND METHODS: This study presents two cases of patients with impacted teeth and adjacent teeth resorption who refused to be treated at first consultation but returned for treatment after some time. One patient's records, who immediately accepted traction of impacted tooth, was selected as a control case. CBCT was used to determine the following aspects of impacted teeth: position of crown and root, root development, relationship with adjacent teeth and width of dental follicle. Severity of root resorption was evaluated in root thirds and surfaces and measured according to classification of Ericson & Kurol.
RESULTS: In first case, within 2 years impacted tooth 25 with an open root apex migrated occlusally in a vertical path, its apex became closed, follicle's width increased by 0.73 millimetres, resorption of teeth 24 and 26 progressed to more surfaces and at least 1 degree in severity. In second case, within 6 years position of impacted tooth 13 has not changed, its follicle's width and resorption of adjacent teeth remained stable. In control case, where traction of impacted tooth 23 with a closed apex was initiated immediately after diagnosis, progression of already existing root resorption of adjacent teeth was not noticed.
CONCLUSIONS: The likelihood of further root resorption of adjacent teeth over time is low if impacted tooth has a closed root apex. Impacted tooth with an open root apex can lead to progression of root resorption of adjacent teeth if left untreated. Resorption of adjacent teeth tends to remain stable if forced eruption of impacted tooth is performed soon after diagnosis is made. Widening of follicle of impacted tooth seems to be associated with a higher degree of root resorption of adjacent teeth over the time.

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HYPODONTIA OF MAXILLARY LATERAL INCISORS: OPEN OR CLOSE THE SPACE?

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Vilnius University, Institute of Odontology, Lithuanian University of Health Sciences, Department of Orthodontics

AIM: To assess the influence of skeletal, occlusal, and extraoral factors on the treatment choice for maxillary lateral incisors hypodontia.
MATERIALS AND METHODS: The investigation was conducted at the LSMU Orthodontic Clinic using the OnyxCeph system database. A total of 37 patients diagnosed with unilateral or bilateral maxillary lateral incisors hypodontia and undergoing treatment were included in the study. The analysis involved examining lateral cephalograms, digital dental models, and intraoral and extraoral photographs. Statistical analysis was performed using the IBM SPSS software.
RESULTS: Orthodontic space opening was performed in 21 patients (56.8%), while space closure was chosen for 16 patients (43.2%). For unilateral hypodontia, space opening was preferred in 70% of patients, whereas cases of bilateral agenesis leaned toward space closure in 58.8% of instances ($p>0.05$). Space opening was more commonly chosen when the unaffected side of the dental arch exhibited Angle class I or class III molar relationship (84.6% and 100%, respectively). Conversely, cases with Angle class II molar relationship were more frequently managed with space closure (66.7%, $p<0.05$). For class II canine relationship, space closure was more commonly performed (60%), while space opening was favored for class I or class III (100% and 100% respectively) ($p<0.05$). A concave facial profile led to the selection of space opening treatment (90%), while a straight profile resulted in space closure treatment (61.5%) ($p<0.05$).
CONCLUSIONS: The choice of treatment method for maxillary lateral incisors hypodontia is influenced by the molar and canine relationships on the unaffected side, as well as the patient's profile type.

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PILOT STUDY: THE EFFECT OF OROFACIAL MYOFUNCTIONAL THERAPY ON THE POSITION OF THE HYOID BONE IN PATIENTS DIAGNOSED WITH OBSTRUCTIVE SLEEP APNEA

ANDREY DASHUK, TRIIN JAGOMAGI, ANDRES KOSTER
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AIM: To evaluate whether orofacial myofunctional therapy is associated with changes in hyoid bone position.
MATERIALS AND METHODS: This study included 5 patients diagnosed with obstructive sleep apnea (OSA), and 4 patients were not included in the study. At the beginning of the study (T1), cone beam computed tomography (CBCT) was performed on all the patients. Patients underwent a course of myofunctional therapy for 3 months. After the therapy (T2), new CBCT was conducted. CBCT was used to create cephalometric and superimposition images. Cephalometric measurements of the hyoid bone and facial structures were assessed. Measurements were analyzed using "t-test: paired two sample for means."
RESULTS: Superimposition images showed changes in hyoid bone position. Cephalometric measurement changes between T1 and T2 demonstrated significant differences. Significant vertical position changes of the hyoid bone were observed, with the hyoid bone moving significantly upwards – in the direction of the oral cavity.
CONCLUSIONS: Orofacial myofunctional therapy leads to changes in the vertical position of the hyoid bone, resulting in an elevated hyoid bone position.

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TOOTH AUTOTRANSPLANTATION TO ANTERIOR MAXILLA

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AIM: To evaluate root development in teeth autotransplanted to the anterior maxilla and assess the influence of root development stage, use of 3D replicas, and recipient site characteristics on root growth outcomes.
MATERIALS AND METHODS: This prospective cohort study included twenty-seven patients (mean age 10.8±1.14 years) who had at least one open-apex autotransplanted premolar (AP) in the anterior maxilla. Root-crown ratios (RCR) of the APs were measured on periapical radiographs taken at 2 weeks (T1), 3 months (T2), 6 months (T3), and 9 months (T4) post-transplantation. Root development stages were classified according to Moorrees criteria based on radiographic findings. Data analysis was conducted using Jamovi software (version 2.3).
RESULTS: A total of 34 autotransplanted premolars were analyzed, with all cases showing 100% survival and success rate. Based on Moorrees root development stages, the APs were classified as stage-3 (n=22) and stage-4 (n=12). RCR did not significantly differ between these stages at any time point ($p=0.519$). A strong negative correlation was observed between patient age at surgery and RCR ($\rho=-0.738$, $p<0.001$), indicating better root development in younger patients. Fifteen APs had preserved tooth at the recipient site. The presence of a preserved tooth at the recipient site during alveolar bone preparation was associated with improved root development ($p=0.034$). Three months post-surgery, RCR values were significantly higher in the 3D replica group (n=24) compared to the no-replica group (n=10) ($p=0.038$), though this difference was not observed at 9 months.
CONCLUSIONS: The root development of autotransplanted premolars is influenced by age and recipient site characteristics. The use of 3D replicas had a positive impact on root development in early stages after transplantation.

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LATERAL INCISOR AGENESIS AMONG 10–16-YEAR-OLD PRE-ORTHODONTIC PATIENTS

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AIM: This study aims to evaluate the prevalence of congenitally missing lateral incisors among 10-16-year-old pre-orthodontic patients.
METHODS AND MATERIALS: The study was conducted at the Department of Orthodontics at the Lithuanian University of Health Sciences (ethics approval: 2023-BEC2-295). A minimum sample size of 343 pre-orthodontic patients was required to detect differences with a 5% confidence interval and 95% confidence level (population, 3141). From September to December 2023, a total of 435 pre-orthodontic treatment orthopantomograms (OPGs) and medical records of patients aged 10 to 16 years were analyzed. Inclusion criteria: (1) no history of orthodontic treatment or craniofacial interventions; (2) no permanent tooth loss due to trauma, caries, or periodontal disease; (3) no congenital abnormalities or syndromes; (4) high-quality OPG. Jamovi (version 2.3) was used for statistical analysis. A value of $p<0.05$ was stated as significant.
RESULTS: Out of 435 pre-orthodontic patients (mean age: 13.1±1.76 years), 276 (60.9%) were female and 177 (39.1%) were male. 159 pre-orthodontic patients (35.1%) had congenitally missing teeth in their permanent dentition, whereas 294 (64.9%) showed no evidence of tooth agenesis. The prevalence of tooth agenesis was considerably higher in females than in males ($p=0.014$). Of the patients with tooth agenesis, 49 (30.8%) were missing lateral incisors. Lateral incisors were affected by tooth agenesis in the following order: #12 in 8.2%, #22 in 7.1%, #32 in 1.3%, and #42 in 0.9% of patients. Maxillary arch was significantly more often affected by agenesis of the lateral incisors than the mandibular arch ($p<0.001$). Only three pre-orthodontic patients had bilateral agenesis of the lateral incisors; unilateral agenesis was observed significantly more frequently ($p<0.001$).
CONCLUSIONS: The study revealed that lateral incisor agenesis was present in 10.8% of pre-orthodontic patients aged 10 to 16 years, with a higher prevalence observed in females compared to males.

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