

## Croatian Congress of Day Surgery

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### Invited lecture

#### APPLICATION OF GENERAL ANAESTHESIA DURING DENTAL TREATMENT IN PEDIATRIC DENTISTRY

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In pediatric dentistry, the delivery of pain free procedures is of utmost importance. Pain control is part of the behavior management. Dental treatment facilitated by general anaesthesia (GA) allows dentists to benefit from improved treatment conditions and provide a higher quality of care. In addition, it also permits dentists to treat patients who otherwise could not be treated in standard conditions, including highly anxious and/or phobic patients, uncooperative children, patients with developmental disorders, patients with muscle-control problems and patients with medical conditions that may be exacerbated by anxiety.

Children with disabilities are the ones most frequently receiving dental treatment using GA. Although a smaller part of the jigsaw puzzle, the dental treatment facilitated by GA is an important part of the complex treatment and rehabilitation and intends to improve their general health condition.

Keywords: pediatric dentistry, general anaesthesia, disorders, dental treatment

### Lectures

#### STRUCTURE OF PATIENTS AND OUTCOME OF THE TRIAGE PROCESS FOR THE DENTAL TREATMENT IN GENERAL ANESTHESIA

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**Introduction:** Aim of the study was to analyse the structure of patients referred for dental treatment in general anaesthesia (GA) and to analyse the triage outcomes.

**Materials and Methods:** Retrospective chart analysis of patients referred between January 1<sup>st</sup> 2018 and July 7<sup>th</sup> 2022 was performed. Following data were registered: age, sex, diagnosis/reason for referral for GA, indication for dental treatment in GA, triage outcome and waiting time for the GA procedure.

**Results:** Charts of 193 referred in the aforementioned period were analysed. Most common reason for the referral was autism (65/33.7%), cerebral paralysis (29/15%) and mental retardation (27/14%). Indication for dental treatment in GA was found in 156(80.8%) patients while in 37(19.2%) patients no indication for dental treatment in GA was found. Out of the 156 patients who were indicated for dental treatment in GA, 98(62.8%) patients were managed through day-care surgery and 8(5.2%) patients were admitted to hospital. Twenty patients (12.8%) were still waiting for their GA appointment in the time of analysis, 29(18.6%) were lost to follow up and in one (0.6%) patient the anaesthesiologist recommended ambulatory treatment due to increased risk. Out of the 37 patients in whom no indication for the treatment in GA was found, 13(35.2%) had no caries, 16(43.2%) were referred to paediatric dentist and 8(21.6%) were managed on the initial exam. Median time of waiting for the procedure was 120(10-365) days. Before the COVID-19 pandemics median waiting time was 90(15-300) days, and after the COVID-19 pandemics median waiting time was 135(10-365) days.

**Conclusion:** In the majority of the patients referred for dental treatment in GA, indication for the procedure was established. Majority of the referred patients can be managed through a day-care surgery. COVID-19 pandemics is probably one of the reasons for the increased GA procedure waiting time.

Key words: triage, dental treatment, general anaesthesia, day-care surgery

#### DENTAL PROCEDURES UNDER GENERAL ANESTHESIA: OUR PROTOCOL

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Dental procedures under general anesthesia are most often performed in cases where people are uncooperative. Uncooperativeness is most often caused by psychological defects (eg. mental retardation, disorders from the autism spectrum, etc.), but it can also be caused by psychological immaturity (children under 6 years old) or a combination of physical and psychological defects. A special category of patients are those scheduled for more extensive oral surgical procedures where it is required that the patient be calm for a long time during the surgical procedure. Our protocol involves the use of nasotracheal intubation with pharyngeal tamponade, a monitor for monitoring the depth of anesthesia and total intravenous drug delivery with the help of specialized pumps for the delivery of propofol and remifentanyl drugs. Each patient is evaluated preoperatively for the use of premedication drugs, which are most often administered via oral syrup or intranasal spray. Sometimes short-term inhalation anesthesia with sevoflurane is used to establish a venous route. By using this technique, the process of performing dental procedures was significantly accelerated (increased comfort of the operator and visibility of the operating field), possible complications from accidental dislocation of the endotracheal tube were reduced, postoperatively reduced the possibility of emergence delirium and accelerated the process of patient discharge after surgery.

Keywords: uncooperativeness, special category of patients, nasotracheal intubation, monitor of depth of anesthesia, total intravenous anesthesia, propofol, remifentanyl

#### SURGICAL TREATMENT OF PRIMARY ADENOCARCINOMA OF THE MANDIBLE – CASE REPORT

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Malignant tumors of the salivary glands can occur in any place where the tissue of the salivary glands is located, such as the lips, oral cavity, pharynx, nose, paranasal sinuses. The oral cavity can be the location of metastatic lesions of malignant primary tumors located elsewhere. The organs from which these tumors can metastasize to the jaw are breast, lung, kidney, and thyroid. Adenocarcinomas of the mandible appear extremely rarely as primary tumors in the oral cavity.

A 44-year-old patient was referred to the Department of Oral Surgery of the University Dental Clinic Zagreb, due to pain in the lower jaw. The anamnestic status was normal, the patient was a non-smoker and denies any other chronic diseases. A clinical and radiological examination revealed an impacted wisdom tooth with a cystic formation in the area of the right angle of the mandible, alveotomy and PHD analysis were performed. Histological findings showed an adenomatoid odontogenic tumor. During the second surgical procedure, the tumor formation was extirpated under general anesthesia. A repeated histological finding showed a well-differentiated adenocarcinoma, partly of a pronounced papillary morphology, and partly of the salivary gland type. Lung, thyroid gland and breast were safely excluded as primary sites, and the conclusion was that it was a primary adenocarcinoma of the mandible. The patient underwent surgery and a segmental resection of the right mandible and reconstruction of the defect with a free microvascular flap of the fibula was performed. A free skin graft was also taken from the upper leg to cover the skin defect.

Diagnosing adenocarcinoma of the mandible is a complex and challenging procedure, based mostly on histopathology. Treatment and monitoring of such conditions requires a multidisciplinary approach of specialists from different branches of medicine and dentistry.

Key words: adenocarcinoma, mandible, segmental resection, diagnosis

#### AMELOBLASTOMA-ENUCLEATION OR RESECTION

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Odontogenic tumors are considered relatively rare and destructive neoplasms of the jaw bones. They arise from remnants of odontogenic tissue and belong to benign odontogenic tumors with locally aggressive behavior. Although the incidence of odontogenic tumors varies from 1% to 32%, ameloblastoma is, along with odontoma, the most common benign odontogenic tumor. It is predominantly located in the lower jaw (up to 80%), and

most patients diagnosed with ameloblastoma are between the ages of 30 and 60. The current WHO 5th classification distinguishes five different types: conventional/multicystic, unicystic, metastatic, peripheral, and adenoid. The slow-growing nature and lack of symptoms are considered responsible for the delayed diagnosis of ameloblastoma. Considering the severe clinical implications with a high recurrence rate, it is of utmost importance to provide sufficient guidelines and standardize the surgical approach. The current treatment concept for ameloblastoma is still controversial. To date, the standard treatment is radical resection with a wide bone margin. However, different treatment methods are recommended depending on many factors, such as the type and clinical picture of the tumor. Regardless of the type, the treatment of ameloblastoma is surgical or non-surgical. The surgical approach can be further divided into radical and conservative surgery. These approaches are often intertwined, and conservative methods such as decompression are valuable in preoperative tumor volume reduction. Non-surgical methods include radiotherapy and/or chemotherapy. Recent advances in the signaling pathways and genetic understanding related to the pathogenesis of ameloblastoma have resulted in the development of molecularly targeted therapies as a valuable treatment option. Details of the modern surgical approach and the mentioned treatment methods are presented through the presentation of the treatment of two patients with unicystic ameloblastomas of the mandible at the Clinical Institute for Oral Surgery, KBC Zagreb.

Keywords: ameloblastoma, odontogenic tumors, surgical procedures, molecular targeted therapy, recurrence.

#### POSSIBILITIES AND LIMITATIONS OF SURGERY OF THE ORAL CAVITY AND PHARYNX WITHIN THE SCOPE OF ONE-DAY SURGERY

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Surgery of the oral cavity is an extremely broad term that encompasses the activities of several specialist and sub-specialist disciplines in the field of medicine and dental medicine. Oral surgery is an area of interest for maxillofacial surgeons, otolaryngologists, plastic surgeons, oral surgeons, periodontists, oral medicine specialists, prosthetics and surgical prosthetics specialists, and other specialties. Surgery of the oral cavity as a term also includes a wide spectrum of therapeutic procedures in the treatment of pathological conditions that require surgical therapy, from the smallest excisions of benign epithelial tumors and simple tooth extractions, to the surgical treatment of malignant tumors of the oral cavity, which are among the most complex and sophisticated procedures in modern surgery in general. Taking into account all the anatomical and physiological characteristics of the oral cavity as a region of the head and neck in which the respiratory and digestive systems are intertwined, it is imposed as a key task of the surgeon who sets the indication for surgical treatment, to choose from a wide spectrum of patients, based on knowledge and experience, those who are, according to the characteristics of the surgical disease and overall state of health, candidates for treatment within the framework of one-day surgery. Taking into account the infrastructural characteristics of modern one-day surgery units, such as spatial conditions, technological equipment, employed medical and non-medical staff, it could be concluded that there is almost no surgical procedure due to diseases and conditions in the oral cavity that could not be performed within the framework of one-day surgery. When many other advantages of one-day surgery are added to this, such as high patient turnover, absence of hospitalization, high profitability for the health system, it is clear that there is a preference of providers and recipients of services for one-day surgery. A key part of the patient treatment process is the correct prediction and risk assessment of the development of early postoperative complications of oral cavity surgery, which is the dominant limiting factor for setting the indication for treatment within the scope of one-day surgery.

Key words: one-day surgery, oral cavity, complications, risk assessment

#### DENTAL RESTORATION UNDER GENERAL ANESTHESIA – NECESSITY OR LUXURY

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Restoration of teeth or dental treatment under general anesthesia is a challenge not only for the therapist but also for the entire medical team. Through many years of experience as pioneers of such procedures in Croatia, we have seen how important the role of each individual member of the team is, from anesthesiologists and anesthesiology technicians,

to operators (endodontics and restorative dental medicine specialist, oral surgeon, maxillofacial surgeon) to surgical nurse and assistants. There are numerous challenges that we encounter during the procedure, which include not only the sanitation of the teeth themselves, but also the treatment of the entire stomatognathic system, as well as the orofacial region. It should also be emphasized that in most cases we treat patients with numerous illnesses, both physical and mental, where neither usual communication nor an adequate clinical examination, let alone radiological examination and analysis, is possible. An important determinant in such procedures is the knowledge and experience of both the anesthesiology team and the operating team, so that the procedure is first and foremost safe, but also effective for our patients.

Key words: dental restoration, anesthesia general, dental care, oral surgery, people with disabilities

### ENDODONTIC TREATMENT UNDER GENERAL ANESTHESIA: OPPORTUNITIES AND CHALLENGES

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A vulnerable part of the population is exposed to a greater risk of oral health problems. Patients with disabilities usually suffer from a disturbed physiological or psychological state, uncooperative behavior and emotional changes during the implementation of diagnostic and therapeutic procedures, which indicates the need for supportive techniques during the implementation of therapeutic procedures. General anesthesia is one of the applicable techniques to facilitate the implementation of dental procedures and is predominantly performed in hospital conditions.

The patient suffers from psychotrauma. Due to uncooperativeness, poor oral status and complex medical history, the indication for tooth restoration under general anesthesia is established. Endodontic treatment of the upper right central and lateral incisor and restorative procedures of several teeth are carried out. Considering the insufficient findings of radiological diagnostics, during rehabilitation under general anesthesia, the destruction of the bone wall in the periapical region of tooth 12 and the formation of an intra-oral fistula were palpated. Due to persistent localized infection and in order to prevent the spread of odontogenic inflammation, an apicotomy is performed instead of the initially planned endodontic treatment. Timely therapy under conditions of general anesthesia primarily implies decision-making, which often includes invasive procedures in addition to conservative ones.

Dental treatment of patients with severe intellectual disorders and cognitive difficulties is often challenging due to insufficient cooperation. Propensity to caries and injuries require special interdisciplinary health care for vulnerable groups of patients. When a problematic tooth has a high strategic value with sufficient structure, invasive solutions can be avoided and endodontic and restorative treatment can be considered. However, the possibilities and challenges of general anesthesia therapy encompass a wide range of decisions and procedures that differ significantly from conventional treatment procedures in outpatient settings. Recent literature and clinical experiences indicate an improved quality of life related to oral health after rehabilitation of patients under general anesthesia.

Key words: patients with disabilities, tooth rehabilitation, general anesthesia

### WHAT CAN WE DO WRONG DURING SINGLE-VISIT ENDODONTIC TREATMENT?

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The modern concept of endodontic therapy is treatment in one visit. Such an approach is based on the intention to seal the cleaned and disinfected endodontic space as soon as possible apically and coronally, thereby maximally reducing the time in which the endodontic space could be reinfected with bacteria or fungi from the environment. A successfully sealed endodontic space is a prerequisite for healing bone and periodontal tissue defects around the root of the tooth.

In order for the selected therapy to be successful, it is important to know where we can make a mistake and at what moment the procedure can go in the wrong direction. The beginning of any therapy is, of course, a diagnosis. A wrong diagnosis can lead to a completely wrong therapeutic plan. In order for the therapeutic plan to be achievable, it is important to know the morphology of the endodontic space, which is specific for individual teeth and also for the patient's age. The specifics of the morphology can change the primary therapy protocol. Knowing the instruments and materials used in treatment is no less important. Their specificities can be crucial for the prognosis and long-term success of the therapy. The cleaned endodontic space must be disinfected. Various disinfectants are avail-

able, as well as instruments that increase the quality of disinfection. The treatment does not end only with the sealing of the canal. Coronary sealing is the final stage of treatment. Coronary sealing is achieved by functional and aesthetic reconstruction of the crown part of the tooth, which restores the lost role of the tooth in speech and chewing.

Key words: one-visit endodontic treatment, endodontic space, endodontic instruments, materials for reconstruction

### HOSPITAL DENTISTRY - TEAMWORK AS THE KEY TO SUCCESS

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The purpose of hospital dental medicine is dental management of the most complex patients. A prerequisite for the optimal outcome is the timely and high-quality cooperation of the multidisciplinary team composed of dentists and doctors of various specialties. This presentation will demonstrate, through the series of cases from our practice, the benefits of timely team care. The consequences of the absence of well-timed multidisciplinary management will also be presented.

Keywords: hospital dentistry, multidisciplinary management

### TREATMENT OF PERI-IMPLANT DISEASES IN HOSPITAL DENTAL MEDICINE – AN IMPOSSIBLE CHALLENGE?

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Peri-implant diseases represent a growing problem in dental medicine, given that dental implant therapy has been the standard of care and treatment for many years. According to the last classification of periodontal diseases, we distinguish peri-implant health, peri-implant mucositis, peri-implantitis and peri-implant soft and hard tissue deficiencies. For patients of hospital dental medicine, peri-implant mucositis and peri-implantitis present an immediate problem, which we associate with inflammatory processes of the oral cavity and conditions that need to be remedied before further serious interventions due to primary disease of the patient.

Peri-implant mucositis and peri-implantitis are not rare diseases that affect patients with dental implants. It is evident from the literature that after five years of prosthetic loading, mucositis is present in half of all dental implants, and peri-implantitis in at least one quarter. The therapy of peri-implant mucositis and peri-implantitis always begins with periodontal non-surgical therapy, with which we can achieve resolution of peri-implant mucositis, depending on the factors related to the patient. Peri-implantitis therapy often requires surgical intervention, resective, regenerative or combined resective-regenerative type. We can expect an initial successful resolution of peri-implantitis in approximately two-thirds of implants, according to data from the literature, but with long-term follow-up of five years or more and with regular supportive therapy, this percentage decreases somewhat. Such forms of therapy, as well as periodontal therapy in general, require time that we often do not have with patients in hospital dental medicine, due to the urgency of their primary condition. The presented cases show the surgical management of peri-implantitis and the possible success of such interventions, which we cannot always predict. For this reason, a legitimate question arises as to what to do in such clinical situations in hospital dental medicine for patients whose lives are in danger due to their primary condition. Explanation of dental implants should never be the preferred form of treatment for peri-implantitis, but in the specific environment and indications of hospital dental medicine, it might be a predictable form of treatment.

Keywords: peri-implant mucositis, peri-implantitis, non-surgical periodontal therapy, regenerative therapy of peri-implantitis, explanation of dental implants.

### ETIOLOGY AND TREATMENT OF MOLAR INCISOR HYPOMINERALIZATION

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Molar incisor hypomineralization (MIH) is a common developmental disorder of enamel that occurs in childhood. Areas of reduced enamel mineralization usually affect one or more first permanent molars and can cause clouding of the anterior teeth. The causes of MIH are still not sufficiently clarified despite numerous researches. MIH presents a number of challenges for the dental team. It is currently assumed that every subsequent child is affected by this specific form of wedge formation disorder - and not only on the permanent molars and incisors, but also on the canines and premolars. In addition to aesthetic changes in the color of the teeth, there is often hypersensitivity and severe tooth pain affected by hypomineralization. In daily practice, we are faced with difficult tasks, especial-

ly considering the possibilities of treating hypersensitive teeth with MIH. The aim of the lecture is to present the current knowledge about the possible causes of MIH, and the latest guidelines for treatment. It is currently assumed that every seventh child is affected by this specific form of enamel formation disorder. In everyday clinical practice, we are usually faced with a difficult task, especially with regards to diagnosis and treatment for the different degrees of MIH. The aim of the lecture is to present the current knowledge about the possible causes of MIH, and the latest guidelines for treatment.

Keywords: enamel defect, molar-incisor hypomineralization, dental hypersensitivity

#### PSYCHOLOGICAL PREPARATION OF PEDIATRIC ONCOLOGICAL PATIENTS FOR DENTAL TREATMENT

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Psychological preparation is a continuous interaction that includes a dentist and his team (nurses, assistants...), a patient and a parent, and is directed towards communication and education. The goal of psychological preparation is to ease fear and anxiety, and it promotes understanding of the need for good oral health and the process by which it is achieved. A dentist treating pediatric oncology patients should have different approaches to psychological preparation and, in most cases, should be able to determine the child's exact developmental level, dental procedures and temperament, and predict the child's reactions to dental treatment in addition to his primary oncology therapy. The behavior of the dentist and his assistants play an important role in the psychological preparation of pediatric oncology patients. Through communication, the dental team can alleviate fear and anxiety, teach appropriate coping mechanisms, and guide the child to be cooperative, relaxed, and confident in the dental environment.

Key words: psychological preparation, pediatric oncology patients, dental treatment

#### DENTAL TREATMENT UNDER ENDOTRACHEAL ANAESTHESIA IN A PATIENT WITH SUSPECTED ECTODERMAL DYSPLASIA – A CASE REPORT

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Ectodermal dysplasia is the abnormal growth of tissues of ectodermal origin (nails, teeth, hair, skin, and glands) due to genetic disorders. Other parts of the body such as the eyes and throat can also be affected. There are more than a hundred types of ectodermal dysplasias. The clinical picture and physical appearance of the patient vary from person to person and depend on the involvement of the tissues. They may present in mild or severe form. A 53-year-old patient, resident of the rehabilitation centre, comes to the Department of Dental Medicine of Clinical Hospital of Split for dental treatment under endotracheal anaesthesia. The patient was small, of weak stature and had kyphoscoliosis. Clinical examination revealed craniofacial malformations such as a saddle nose with a wide base, a protruding forehead, cleft lip and palate scars, atypical ears, dry, hyperpigmented skin, thin, sparse hair. Short fingers with deformities of the nail plate, atrophy of the bulb of the left eye and opacity of the cornea of the right eye are also observed. Intraoral examination reveals a dry, red oral mucosa. Analysis of radiological images revealed a small number of teeth with an atypical appearance of the crown and root. Other bony structures of the head were radiologically featureless. A clinical geneticist was also consulted and blood samples were taken for genetic analysis using clinical exomes. Considering the clinical picture, a working diagnosis of ectodermal dysplasia was made. Clinical genomic analysis finding is required to make a definitive diagnosis and determine the type of ectodermal dysplasia.

Key words: ectodermal dysplasia, oligodontia, atypical tooth morphology

#### PARENTAL/CAREGIVER PERCEPTION OF THE ORAL-HEALTH-RELATED QUALITY OF LIFE OF CHILDREN WITH SPECIAL NEEDS

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**Background:** Compared with the general population, people with disabilities have poorer oral health, which may negatively affect their quality of life. The aim of this study was to assess parents'/caregivers' perceptions of the impact of oral health on the quality of life of people with special needs who underwent dental treatment under general anesthesia and quality of life of their families.

**Materials and methods:** This cross-sectional study included 42 children with special needs (24 women and 18 men) with an average age of 21.14±8.34 years who underwent

for dental treatment under general anesthesia. Prior to the intervention, an oral examination was performed to determine the number of teeth affected by caries, and parents'/guardians completed a specially designed questionnaire that included sociodemographic data, children's oral hygiene and dietary habits, and questions assessing the impact of their children's oral health on their quality of life. The obtained data were analyzed descriptively and with Spearman's correlation.

**Results:** Although less than one-third of respondents reported that their children frequently eat sweets and drink sweetened beverages, the average number of carious teeth per participant was 9.74±5.63. About 66% of respondents reported that their children perform oral hygiene with their help, while 9.5% of them do not do so at all. Almost 70% do not use any additional means for oral hygiene. The number of carious lesions correlated positively with difficulty chewing and biting food in individuals with special needs ( $R=0.409$ ,  $P=0.007$ ), with the demand for more attention from parents ( $R=0.393$ ,  $P=0.010$ ), and with parents' absence from work ( $R=0.338$ ,  $P=0.028$ ).

**Conclusion:** The increase in the number of carious teeth in individuals with special needs has been associated with the quality of life of their families. It is necessary to promote oral health prevention by teaching people with special needs and their parents'/guardians the proper techniques for oral hygiene and a diet adapted to their needs.

Keywords: children with special needs, dental caries, oral-health-related quality of life, parents.

#### PROCEDURE OF DENTAL REHABILITATION UNDER GENERAL ANESTHESIA IN CLINICAL HOSPITAL CENTER RIJEKA

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The aim of this presentation is an overview of method of dental rehabilitation under general anesthesia focused on patients treated in Clinical Hospital Center Rijeka, with its all advantages and disadvantages.

A number of patients refuse to visit the dentist because of the dental fear or anxiety. Usually the cause of the dental fear is expectation of pain or incomprehension of the need for a dental procedure. Majority of these patients are children or patients with special needs. If such fear/anxiety cannot be solved by behavioral control techniques and the patient remains non-cooperative, then general anesthesia is indicated.

The procedures are performed exclusively in hospital conditions and require a space with complete setting for general anesthesia and staff trained in this type of work. The treatments are performed on two locations; for children in children's hospital and for the adults in general hospital, both in day care surgery setting.

The process has several stages: examination and decision on treatment under general anesthesia, pre-anesthetic assessment, admission to the hospital on the day of the procedure, premedication, endotracheal intubation and induction to anesthesia, dental treatment, emergence from anesthesia, post-anesthesia recovery, and discharge from hospital for home care.

Patients with dental fear/anxiety, with physical and/or intellectual disabilities have increased dental treatment needs compared to the general population. Dental treatment under GA is a safe and effective way of providing dental care for non-cooperative patients. This presentation will include a detailed view of such way of dental rehabilitation in Clinical Hospital Center Rijeka.

Key words: general anesthesia, dental anxiety, dental care for disabled, special healthcare needs, pediatric dentistry, dental treatment

#### RESULTS OF 5 YEAR PRACTICE OF DENTAL REHABILITATION UNDER GENERAL ANESTHESIA IN CLINICAL HOSPITAL CENTER RIJEKA

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**Introduction:** Dental restoration under general anesthesia has become an irreplaceable part of daily work of specialists in pediatric dentistry. Under general anesthesia, teeth are treated in very young children, children with a large number of decayed teeth, children who have a strong dental fear and children with developmental difficulties and disabled people. At Dental Medicine Clinic of CHC Rijeka in cooperation with Anesthesiology, Children's Surgery and Otorhinolaryngology Clinics, dental restorations under general anesthesia have been carried out for five years.

**Materials and methods:** Patients who had indication for dental restoration under general anesthesia are patients of Dental Medicine Clinic, CHC Rijeka. Procedures were performed under general balanced anesthesia with maintenance of the airway by nasal intubation, exceptionally orotracheal intubation. After doing the anesthesia and intubation, a throat tamponade and a fixator were placed. Then, detailed examination of oral cavity was performed and DMF/df index was taken and treatment plan was set.

**Results:** In the period from 2017 to 2022, a total of 459 patients were treated, 66.2% male and 33.8% female. Treatment was performed on 4.181 teeth, 1.140 (27.3%) permanent teeth, and 3.041 (72.7%) primary teeth. 69.9% of permanent and 34.6% of primary teeth were filled, while 30.1% of permanent and 65.4% of primary teeth were extracted. The treatment plan is more radical in order to reduce the possibility of complications and avoid repeated need for tooth restoration under general anesthesia. All necessary treatments were performed in one procedure under general anesthesia.

**Conclusion :** After tooth restoration under general anesthesia, the morphology of the chewing surface is established and the chewing function of the tooth is restored. The balance of the oral microflora is re-established and the risks of caries and development of dental anxiety are reduced.

Keywords: general anesthesia, tooth decay, tooth restoration, children with developmental disabilities

## Posters

### ENDODONTIC AND SURGICAL TREATMENT OF ODONTOGENIC CYSTS

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Therapy of odontogenic cysts often requires a multidisciplinary approach in order to achieve successful therapy. The aim is maximum protection of the surrounding anatomical structures and protection of as many teeth which are affected by cystic as possible. The choice of bioactive materials in endodontic treatment enables regeneration, reparation of tissue. It also has bactericidal and bacteriostatic effect. As an integral part of bioactive materials, hydraulic calcium silicates also have the property of bioactivity, which means that they release ions that lead to tissue mineralization. The success rate of endodontic surgical procedures is higher with the use of bioactive materials in the therapy of odontogenic cysts.

During a specialist examination, the patient was diagnosed with extensive periapical lightening in the area of the first quadrant by orthopantomogram analysis. The patient was referred for additional diagnostics, and the CBCT analysis of the maxilla revealed the presence of an extensive cyst in the region 11-17. Due to the extensiveness of the procedure, the indication was procedure under general anesthesia. Vital teeth 13 and 12 are preoperatively endodontically treated and filled with bioactive material (Ceraseal, Meta Biomed, Cheongju-si, Republic of Korea). An apicotomy was performed on tooth 13 due to external root resorption. The bone defect is filled with artificial bone (Straumann, Xeno Graft, Basel, Switzerland) and with PRGF resorptive membrane (Straumann, Jason membrane, Basel, Switzerland). One week after the procedure, on control examination the vitality of tooth 11 was lost, and endodontic therapy was performed. Three months after, a follow-up examination was carried out and a proper clinical finding was obtained. On the radiograph is visible restitution of the bone defect.

Key words: bioactive materials, odontogenic cyst, PRGF

### TOOTH AUTOTRANSPLANTATION IN ADOLESCENT

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The surgical transfer of tooth from one alveolus to another in the same person is called autotransplantation. The procedure is indicated for tooth loss due to trauma or extensive carious lesions, especially in younger patients due to the impossibility of fixed prosthetic and implant therapy. Female patient (15) has indicated for extraction of the first mandibular molar due to extensive destruction by a carious lesion. After a clinical examination and radiological analysis, an indication for the transplantation of tooth 28 has established. Under local anesthesia the tooth 46 has extracted and alveotomy has performed on tooth 28 with incomplete root growth. Implantation site was wider and deeper than the tooth itself. The interradicular septum has removed. Tooth 28 placed in alveolus with infraoc-

clusion and a wire-composite splint has placed. Antibiotic has prescribed per os and instructions were given to maintain local antiseptic conditions with a liquid containing chlorhexidine. One week later, sutures were removed and three weeks later, the wire-composite splint has removed from the lining. Month later, endodontic therapy has started because of pulp necrosis. During 8 months, the apexification procedure was carried out. Finally, the tooth has filled using the cold lateral condensation technique. On the control radiological exam, proper healing of the bone is visible and the patient did not have any subjective symptoms. How it is consider the continued growth and development of the roots and preservation of vitality is a sign of complete success of autotransplantation, this case is apparently successful. Bone healing is visible, established occlusion, prevented mesial inclination of tooth 47 and enables the preservation of height and width of the alveolar ridge for any future implant therapy.

Key words: autotransplantation, tooth loss, implantation, adolescent

### PARENTAL PERCEPTION OF THE CHILD'S ORAL HEALTH AND THE IMPACT OF ORAL HEALTH ON THE CHILD'S WELL-BEING

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Various questionnaires are used to assess patients' perception of their appearance, emotions and daily functioning. The aim of this paper is to present the parental assessment of the child's general oral health and well-being before tooth restoration under general anesthesia and 1 month after the restoration.

The respondents are the parents of a patient who underwent general anesthesia in the period from April 2021 to April 2022. This included 51 patients aged 3 to 15 years. The parent responded to two items. The first item is: *How would you rate the health of your child's teeth, lips, jaws and mouth*, and the respondent chooses: excellent, very good, good, average, bad. The second item is: *How much does the condition of the teeth, lips, jaws or mouth affect the general well-being of your child?* The respondent chooses: it does not affect at all, it affects a little, it affects a lot, it affects a lot.

The mean value of the answer to the question about the evaluation of the child's oral health before tooth restoration is 3.08±0.98, and the answer 1 month after the restoration is 1.84±0.99. P value is <0.0001. The mean value of the answer to the question about the impact of oral health on well-being before tooth restoration is 1.45±0.86, and one month after restoration is 1.24±1.03. P value is 0.1749.

The research shows a statistically significant difference in parental perception of oral health before and one month after rehabilitation. Parental perception of the impact of oral health on the child's well-being before and 1 month after dental restoration under general anesthesia did not show statistical significance.

Keywords: parents, child health, oral health, quality of life

### PROSTHETIC REHABILITATION AFTER TOOTH EXTRACTION UNDER GENERAL ANESTHESIA

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**Background:** This study aimed to investigate the use of dentures made after tooth extractions under general anesthesia and the factors that may contribute to patients' compliance.

**Participants and methods:** The study included all patients who had their dentures done after extractions under general anesthesia in the Department of Paediatric Dentistry of CHC Rijeka from May 2019 to September 2021; it included 14 participants (9 male, 5 female) aged between 5 and 8 years old.

**Results:** 93.3% of tooth loss was due to dental caries, and 6.67% was due to dental trauma. On average, dentures replaced 5.39 teeth (min 2, max 10). 6 participants wore dentures in both jaws, and 8 in only one. 7 out of 14 participants still wear dentures. The average time of denture usage is 350.83 ± 286.38 days.

There was no significant difference in age, sex, number of controls and maintainers' repairs, number and type of teeth replaced, jaw, and type of maintainer between the two groups (group 1: patients who still wear their denture, group 2: patients who stopped wearing it).

**Conclusions:** Since there is no significant difference in the listed factors, patient compliance and motivation of both patients and their parents could be the main factor that influ-

ences the usage of dentures. Considering the great importance of denture wearing after extraction of primary teeth (space maintaining, restoring esthetic, phonetic, and masticatory function) further research is needed to investigate children's compliance with their usage. Keywords: dentures, space maintenance, tooth extraction

#### **ORTHOGRADE REVISION OF FAILED ENDODONTIC THERAPY SUPPORTED BY RETROGRADE SURGERY AND PHOTODYNAMIC LASER DISINFECTION AND RETROGRADE SEALING WITH BIOACTIVE MATERIAL**

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Failure of endodontic therapy indicates revision of endodontic treatment, and this is not necessarily an orthograde conventional therapeutic approach. Retrograde surgical approach to the apex third of the canal and application of photodynamic therapy, enables direct chemomechanical action in the area of accessory canals, isthmuses and deltas, which

are abundant with bacterial biofilms. This creates the prerequisites for the final retrograde sealing with bioactive material which promotes healing and regeneration with supporting tissue. The patient arrives to the Department of Dental Diseases of the Dental Clinic of KBC Zagreb due to dissatisfaction with the aesthetics of the teeth in the upper front. The teeth are without clinical symptoms and subjective complaints. The patient cites childhood trauma. Clinical examination demonstrates a mild periapical sensitivity on palpation of the tooth 11 and none of the tooth 21. There is no sensitivity to percussion nor any tooth mobility. A revision of the endodontic treatment on both teeth is carried out. The canals are filled with the Thermafil system and MTA-Fillapex paste. After X-ray control of the performed endodontic treatment, surgical flap is lifted and granulations are excised. The retrograde 3-4mm deep cavity is prepared and photodynamic disinfection with the HELBO laser and methylene blue HELBO Blue is done. The cavity is closed with MM-MTA bioactive material. After four months, a control examination is carried out. The clinical findings are normal, and the X-ray image shows the healing of the lesions and restitution of the newly formed bone. Post-endodontic restoration is completed with the full ceramic crowns. Biofilms that remain in insufficiently chemomechanically treated canals are the cause of failure of endodontic therapy and often require the use of modern procedures such as photodynamic therapy and treatment with bioactive materials.

Keywords: trauma, revision, photodynamic laser disinfection, retrograde filling, bioactive material, regeneration.