

## 3<sup>rd</sup> International Congress Cro Day Surgery

### Abstracts of the 3<sup>rd</sup> International Congress of Cro Day Surgery of the Croatian Society for Day Surgery CMA in co-organizing the Croatian Society for Hospital Dentistry/Special Care Dentistry CMA and Referral Center for Preventive Dental Medicine in the Republic of Croatia

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### Honorary lectures

#### CONSCIOUS SEDATION IN DENTISTRY

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Conscious sedation is a technique whereby patients undergo a drug-induced depression of their consciousness but retain the ability to maintain their airway independently and continuously, maintain protective reflexes, and respond to verbal or light-pressure stimuli. Conscious sedation can be administered through various routes such as oral, intramuscular, intravenous, and inhalation.

Conscious sedation makes the treatment accessible and, depending on the indications and circumstances, is a safe alternative to general anesthesia to anxious and dentophobic patients or those with medical requirements (patients with medical conditions exacerbated by stress, such as epilepsy or hypertension; patients who suffer from conditions causing dyskinesia, such as Parkinson disease; coexisting medical conditions, such as cardiac anomalies), while increasing their cooperation and enabling the practitioner to complete complex treatment without rendering the patient unconscious.

However, challenges during the treatment exist, the greatest one being sharing of airway between the anesthesiologist and the dentist. Additionally, chances of arrhythmias during surgery due to trigeminal nerve stimulation, enlarged tonsils and adenoids in children which may cause respiratory obstruction, risk of patient losing consciousness, respiratory, and cardiovascular depression or vasovagal syncope due to the dependent position of legs in dental chair, may occur. Therefore, in order to prevent these complications and maintain riskless intervention; availability of airway management equipment, venous access, and appropriate intraoperative monitoring and well-trained staff in the recovery area must be a paramount.

**Key words:** Conscious sedation; General anesthesia; Compromised patients

#### GENERAL ANESTHESIA IN THE SERVICE OF BEHAVIOR MANAGEMENT IN CHILDREN

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Guiding and controlling a child's behavior is one of the most important tasks of any dentist working with children. Behavior control is performed in a variety of ways, and general

anesthesia is the last resort that specialized facilities may use when other methods are unsuccessful. The work of a dentist under general anesthesia is extremely demanding and requires cooperation with a whole team of experts. In our facility, this form of work has been carried out since 2016, and during this period around 1200 procedures have been performed under general anesthesia. The population that turns to us consists mainly children with developmental difficulties and children who are uncooperative in smaller numbers. It is known that children with developmental disabilities are more prone to tooth decay and therefore have a greater need for dental services. An analysis of all referral diagnoses for such interventions was undertaken to show which groups are most represented. An overview is also given of all the complications that occur with such a large number of procedures in high-risk children. At the same time, all the procedures used in such patients are presented, with a particular focus on the different anesthesia techniques used on a daily basis in such situations.

**Key words:** Behavior management; General anesthesia; Children

### Invited lectures

#### THE IMPACT OF DIAGNOSES ON OUTPATIENT OR DAY SURGERY PROTOCOL

Valentina Rajić  
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The use of general anesthesia is becoming more prevalent in different dental specialties. The University Hospital Center Zagreb, Croatia provides therapeutic procedures in outpatient settings and in a Dental clinic's day care surgery.

The purpose is to illustrate the distribution of diagnoses and the potential for implementing therapy in outpatient settings and day care surgery. A total of 1,118 patients were treated between January 2019 and October 2023, under general anesthesia (7,8%) or on an outpatient basis (92,2%). Their records were reviewed for evaluation purposes.

The two most common ambulatory diagnoses were caries (44,9%) and pulp diseases (22,3%), which were similarly represented across all age groups of patients. The most common diagnoses treated in day care surgery were pulp diseases (23,0%), odontogenic cysts (18,4%), caries (12,6%), disorders related to the development of tooth eruption (12,6%), unerupted or impacted teeth (11,5%), and anomalies of teeth and facial bones with malocclusion (9,2%). Patients older than 18 years were most commonly diagnosed

with pulp diseases (31,9%) and cysts (27,7%). Patients younger than 18 years old were commonly diagnosed with disorders related to the development of tooth eruption and anomalies of teeth (25,0%) and facial bones with malocclusion (20,0%). The majority of therapeutic procedures were performed on men; 57,7% in outpatient settings and 54,0% in day care surgery. The number of patients treated in day care surgery increased by 5,7% in 2019 to 31% in 2023.

Short-term operations under general anesthesia with rapid recovery and without side effects have a better impact on a patient's daily life, which contributes to the growing popularity of day care surgery.

**Key words:** General anesthesia; Day care surgery; Hospital dentistry

### THE INFLUENCE OF THE PARAMETERS OF THE HOSPITAL SYSTEM ON THE SATISFACTION OF PARENTS AND CAREGIVERS OF PATIENTS IN DAY SURGERY

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The purpose of the lecture is to show the influence of hospital system parameters on the satisfaction of parents and caregivers of patients undergoing dental treatment under general anesthesia (GA) in one day surgery system.

A survey was conducted using an anonymous questionnaire that was sent to parents/caregivers of patients undergoing complete oral rehabilitation under general anesthesia. The survey consisted of four parts: general data, data on the procedure, satisfaction with different aspects of care, and parents/caregiver's perception of their child's condition in relation to the period before dental treatment under general anesthesia.

Overall satisfaction with the treatment was high. The respondents were the most satisfied with communication with nurses, and the least satisfied with the long wait for the procedure. Parents/caregivers of patients who reported eating difficulties expressed significantly lower overall satisfaction than those whose children did not report such problems. Also, the more treatments the patients underwent, the overall satisfaction was lower than among respondents whose children had never been treated in such a way before.

Since patient satisfaction positively affects the outcome of treatment and adherence to preventive recommendations, all healthcare providers should strive to achieve this.

**Key words:** General anesthesia; Hospital system; Day 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 (eng. 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.

**Key words:** Uncooperativeness; Special needs patients; Nasotracheal intubation; Deep anesthesia; Intravenous anesthesia

### TOOTH RESTORATION UNDER GENERAL ANESTHESIA - THERAPEUTIC OPTIONS

Bernard Janković

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Dental medicine is one of the most rapidly developing branches of biomedicine, both in terms of materials and work techniques. The final goal of these procedures is to replace the lost tissue in such a way that the final product is very similar to natural dental tissues. Procedures are getting faster and the final results are getting better and longer lasting. Thanks to all this, a new branch of dental medicine has recently been developing, hospital dental medicine, i.e. rehabilitation under general anesthesia. It is a branch of dental medicine that deals with the oral rehabilitation of patients who, for whatever reason, are unable to access outpatient therapy. For patients suffering from Sy Down, cerebral palsy, autism, patients with severe forms of anxiety or a severe and uncontrollable urge to vomit, it is the only way of oral rehabilitation. The specificity of these procedures is that they require hospital treatment, special devices for general anesthesia and an operating room prepared for it, and an educated team that includes a doctor of dental medicine, an assistant and an instrument technician, as well as an anesthesiology team. In this lecture, all the therapeutic possibilities of oral rehabilitation under general anesthesia will be described, which are carried out at the Dental's Clinic Day Care Surgery, UHC Zagreb.

**Key words:** Oral rehabilitation; General anesthesia; Hospital dental medicine

### INHALATION SEDATION AS A PROCEDURE IN THE TREATMENT OF COMPROMISED PEDIATRIC PATIENTS

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Given the importance of providing painless dental treatment, the need for the use of sedatives in anxious patients has increased in clinical practice. Dentists should be aware that sedation represents a continuum. The difference between conscious and deep sedation is the level of supervision required, as well as the responsibility of the dentist. There are three standard sedation techniques used in dentistry (inhalation, oral and intravenous) and can be applied to most patients. The chosen technique must be carefully applied to ensure the most appropriate form of anxiety relief. The only modern procedure for inhalation sedation that is recommended is the administration of a titrated dose of nitrous oxide with oxygen. Sedation with nitrous oxide has become a standard procedure in modern dental medicine in the treatment of children and adults. In most European countries and the USA, it is an indispensable procedure that doctors of dental medicine use in their clinical work. Historical data show that the procedure was put into practice by dentists and was successfully used for a century and a half.

**Key words:** Inhalation sedation; Nitrous oxide; Pediatric patients

### INDIVIDUALIZED DENTAL CARE FOR CHILDREN WITH DOWN SYNDROME: GUIDELINES AND RECOMMENDATIONS

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Children with Down syndrome face unique challenges in dental care due to their specific medical, oral, and behavioral characteristics. Children with Down syndrome often present with specific dental issues such as malocclusion, delayed tooth eruption, periodontal disease, and bruxism. Additionally, they may have comorbid medical conditions like congenital heart defects and compromised immune systems, which necessitate careful management during dental treatment. This lecture aims to provide comprehensive guidelines and recommendations to optimize dental care for this population, ensuring they receive the best possible oral health outcomes. Effective dental care for children with Down syndrome requires a multidisciplinary approach involving pediatric dentists, orthodontists, and medical professionals. Early and regular dental visits are crucial for monitoring dental development and preventing oral health problems. Dental professionals must be well-versed in the unique needs of these children and employ specialized techniques to manage their behavior and anxiety during dental procedures. This lecture highlights the importance of individualized treatment plans that cater to the specific needs of each child. Techniques such as desensitization, positive reinforcement, and the use of visual aids can enhance cooperation during dental visits. The dental team should also work closely with parents and caregivers, providing education on maintaining oral hygiene and managing dental issues at home. Implementing these guidelines and recommendations can lead to significant improvements in the oral health and overall well-being of children with Down syndrome.

**Key words:** Down syndrome; Dental care; Pediatric dentistry; Oral health; Behavior management

### BICHAT FAT PAD IN THE CLOSURE OF OROANTRAL FISTULAS

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Bichat fat pad is encapsulated fat mass located in the cheek and can be used as a pedicular or free graft in various surgical procedures. Due to its easy access from the oral cavity approach, it is commonly used for oroantral fistula closure. The aim of this lecture is to evaluate the success of the usage of buccal fat pad for oroantral fistulas closure. Three patients came complaining of drainage through the nose while taking water in the mouth due to different reasons: failed zygomatic implant history, an unsuccessful attempt at previous surgical closure of the oroantral communication after tooth extraction, and oroantral fistula as a result of surgery for a large cyst in the upper jaw and maxillary sinus. CBCT scans for all patients showed generalized haziness of the maxillary antrum which was suggestive of chronic sinusitis. The treatment plan was to do surgical closure using Bichat fat pad (BFP) after following proper antral regime and till clear lavage was achieved. The procedures were done under general anesthesia. After raising the full-thickness trapezoidal design mucoperiosteal flap, at the posterior most point of the flap the periosteum was teased open upwards till a bright yellow lobulated mass of BFP was seen popping out. The lobule was gently teased out till sufficient amount to close the oroantral fistula was available. Care was taken not to rupture the capsule of the BFP and the BFP was anchored to the palatal gingival margin and covered with the buccal mucoperiosteal flap and sutured free-of-tension using horizontal mattress sutures. No late complications occurred, and all patients were free of pain or any limitations after the 6-month follow-up period. Closure of the oroantral fistulas using BFP is an alternative to the classical buccal or peduncular palatal flap.

**Key words:** Oroantral fistula; Surgical treatment; Bichat fat pad

### CEMENTO-OSSIFYING FIBROMA OF THE MANDIBLE

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Cemento-ossifying fibroma (COF) is a rare, benign, intraosseous, slow-growing, asymptomatic jaw lesion that exhibits well-demarcated, unilocular or multilocular radiolucency mixed with radiopacity, depending on the type of mineralized tissue and the maturity of the lesion. The 5th edition of the World Health Organization (WHO) classification from 2022 classifies them as mesenchymal origin tumors. They usually manifest between the ages of 20 and 40, more frequently in women, and in the mandible. There are two types of COF: conventional-slow-growing and juvenile-rapidly growing. The development is associated with the periodontal membrane, which has multipotent cells capable of forming cementum, lamellar bone, and fibrous tissue. The purpose of this lecture is to present the treatment of a 22-year-old patient with COF of the mandible. Clinically, this tumor manifested as a slow-growing and asymptomatic mass that was observed on a routine orthopantomogram on the right side of the mandible. Radiographically, a well-demarcated unilocular lesion containing varying amounts of radiopaque material was observed. Histological characteristics of COF through biopsy analysis included storiformly arranged, proliferating fibroblasts, collagen fibers together with cement granules, and bone spheres in the stroma, appearing as psammomatous entities. Surgical treatment of COF was performed under general anesthesia, where enucleation and curettage were approached while preserving the bone continuity of the jaw and the neurovascular bundle of the mandibular canal, and the wound was primarily closed. The postoperative period went smoothly. Larger COFs require a more radical approach due to the tendency for recurrence after incomplete removal. In these cases, a monoblock resection should be performed along with bone reconstruction using either a non-vascularized bone graft from the iliac crest or a free fibular flap, depending on the size and volume of the defect. A definitive diagnosis and treatment plan is established based on the correlation between clinical, radiological, and histological findings.

**Key words:** Cemento-ossifying fibroma; Mesenchymal origin tumors; Surgical treatment of COF; General anesthesia

### MORPHOLOGICAL ANOMALIES OF HARD DENTAL TISSUE AND GINGIVA IN PERSONS WITH DISABILITIES TREATED UNDER GENERAL ANESTHESIA IN THE UNIVERSITY HOSPITAL CENTER OF SPLIT

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This lecture takes a unique approach by focusing on the dental rehabilitation of children and adults with disabilities under general anesthesia. It aims to enumerate and show, using photographs, morphological anomalies of hard dental tissues and gingiva in people with disabilities and compare their incidence with available recent literature.

We have observed certain morphological anomalies of the hard dental tissue and periodontium, which are part of the phenotype of certain genetic diseases or syndromes.

Some of these anomalies result from cleft lip and palate or are side effects of drugs, especially antiepileptic drugs. We are most often talking about anomalies in the position (transposition, rotation of the crown), number (too many teeth), and shape (premolarization of canines, molarization of premolars, root dilatation) of teeth when we talk about hard dental tissues and hyperplasia of the gingiva and all the changes in the teeth that are the consequences of this hyperplasia. Due to the use of antiepileptic drugs and, most often, mouth breathing, gingival hyperplasia occurs, which makes it impossible to maintain high-quality hygiene, resulting in the accumulation of plaque, which further worsens the hyperplasia and accelerates the development of caries.

Anomalies of hard dental tissues and hyperplasia of gingiva are common findings among persons with disabilities.

**Key words:** Morphological anomalies; Persons with disabilities; General anesthesia

### GORLIN-GOLTZ SYNDROME - TREATMENT STAGES

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Gorlin syndrome, also known as Gorlin-Goltz syndrome (GGS) or basal cell nevus syndrome (BCNS) or nevoid basal cell carcinoma syndrome (NBCCS), is an autosomal dominant familial syndrome. It is characterized by the presence of numerous basal cell carcinomas (BCC), along with skeletal, ophthalmological, and neurological abnormalities. Gorlin-Goltz syndrome is caused by mutations in the patched homolog 1 (PTCH1) gene, which encodes a transmembrane receptor that recognizes the sonic hedgehog (SHH) signaling protein. The prevalence of Gorlin syndrome is between 1:57,000 and 1:256,000 individuals, affecting males and females equally (1:1.3). While the disease affects all ethnic groups, African Americans and Asians account for only 5% of cases, and it is more frequently diagnosed incidentally in the presence of extracutaneous signs such as odontogenic keratocysts (OKC) rather than BCC. The purpose of this lecture is to present the treatment of a young patient through various stages. The patient presented with an incidental finding on an orthopantomogram, which showed multiple radiolucent lesions in the maxilla and mandible with impacted teeth in each lesion. The patient underwent a procedure under general anesthesia, where biopsies of all lesions were performed, and tubes were placed for decompression due to the extensive lesions. Biopsy confirmed the presence of odontogenic keratocysts, and genetic testing confirmed the diagnosis of the syndrome. After a 9-month decompression period, surgery was performed for enucleation and curettage of the cystic lesions with alveotomies of the impacted teeth. The patient is currently under follow-up. Appropriate long-term follow-up must be conducted after surgical treatment to ensure clinical success, which means the absence of signs of recurrence. Some sources specifically note that odontogenic keratocysts have reappeared more than 10 years after enucleation, indicating that odontogenic keratocysts must be monitored for more than a decade.

**Key words:** Gorlin syndrome; Gorlin-Goltz syndrome; Basal cell nevus syndrome; Decompression of cysts; General anesthesia

### DENTAL REHABILITATION UNDER GENERAL ANESTHESIA IN PATIENTS WITH EPIDERMOLYSIS BULLOSA (BE)

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Epidermolysis bullosa (BE) is a rare, genetically determined disease that causes fragility of the skin and mucous membranes, with the appearance of blisters and sores even with the slightest trauma. Dental care in these patients is particularly challenging due to the sensitivity of the oral mucosa.

This lecture aims to present the preoperative protocol, methods of dental treatment under general anesthesia, post-operative care and experiences in the treatment of such patients in the Federation of Bosnia and Herzegovina and beyond. Dental treatment under general anesthesia for EB patients requires a multidisciplinary approach involving multiple stakeholders. Another goal is to motivate, educate and support caregivers and healthcare workers involved in the care of these patients, ultimately improving their quality of life. General anesthesia is the therapy of choice in dental rehabilitation in patients with epidermolysis bullosa (EB). The primary goals are to minimize risk, ensure patient comfort, and provide high-quality dental care.

Dental rehabilitation under general anesthesia in patients with epidermolysis bullosa is a complex process that requires careful preparation, professional knowledge and coordinated teamwork. The main goals are to minimize risk, ensure patient comfort and provide quality dental care.

**Key words:** Epidermolysis bullosa; Genetically diseases; Therapy protocol of BE; General anesthesia

### HOSPITAL DENTAL MEDICINE THROUGH ONE-DAY SURGERY SYSTEM - OUR EXPERIENCES, ADVANTAGES AND DISADVANTAGES

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Day surgery system was introduced in public health hospitals in the Republic of Croatia a few years ago. This is how dental medicine, as one of the components of healthcare at the level of tertiary care, got the opportunity to expand its activities and to contribute to the modern treatment of our patients. Experiences in individual institutions are different and depend on numerous factors that are variable, and are often not within the authority of the professionals in the areas where they are carried out.

At University Hospital Centre Osijek, hospital dental medicine has only had the opportunity to work in a day surgery system for the last six months. Until then, we treated all our patients through hospital treatment and occasionally through the day hospital system when it came to dental restoration for people with disabilities. Because of this, waiting lists were longer and the costs of treatment were higher than necessary. At the beginning of our work in a day surgery system, we got the possibility of faster surgical treatment of our patients, treatment costs are lower, and waiting lists have also decreased. Satisfaction of our patients is also higher because fewer days are lost to hospital stays and there are less absence from the workplace.

Modern treatment in hospital institutions in Western Europe is very concerned about the financial viability of any diagnostic or therapeutic procedure. After entering advanced international integration, the Republic of Croatia obliged to reform its healthcare system and make it more accessible and stable. Introduction of the one-day surgery system was another positive step that was taken in the achievement of this task in the field of dental medicine. Our experiences in the past period confirmed that the advantages of this type of treatment are greater than its disadvantages.

**Key words:** Hospital dental medicine; Day surgery

### THE ROLE OF THE NURSE IN ORAL-SURGICAL PROCEDURES UNDER GENERAL ANESTHESIA

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A nurse/dental assistant, in their daily work at a dental clinic, encounters various oral-surgical procedures. Tooth extraction is one of the most common oral-surgical procedures in a dental clinic. However, certain procedures, such as complicated extractions involving alveotomies, surgeries for large cysts and jaw tumors, and major jaw reconstructions following extensive surgical interventions, require the procedures to be performed under general anesthesia. As an indispensable member of the surgical team, the nurse, dental assistant aids in preoperative preparation and assists during the procedures.

With the development of outpatient surgery, it has become easier for patients and operators to manage more complex oral-surgical procedures.

When assisting with oral-surgical procedures under local anesthesia, the nurse, dental assistant stands to the left of the patient, ensuring the operator has maximum visibility of the surgical field. Holding a cheek retractor with one hand to allow the surgeon access to the operative site, and with the other hand holding a suction device to remove excess fluids, saliva, and blood from the patient's mouth, the nurse, dental assistant ensures a clear working field, facilitating easier and more efficient procedures.

The role of assisting under general anesthesia is somewhat different. The scrub nurse is responsible for preparing the operating room, passing instruments during the procedure, and ensuring all prerequisites are met so that the oral-surgical procedure proceeds without technical complications.

A nurse/dental assistant must first and foremost be familiar with the instruments, equipment, and materials, and must have a certain level of knowledge and manual skills to successfully assist with oral-surgical procedures.

Before, during, and after the procedure, the role of the nurse, dental assistant is to check the patient's condition and reiterate post-operative instructions regarding oral hygiene, wound care, and follow-up appointments. The nurse, dental assistant informs the patient, upon waking from anesthesia, on how to behave until the anesthesia wears off and provides the patient with written instructions on oral hygiene until the stitches are removed.

**Key words:** Nurse; Oral-surgical procedures; General anesthesia

### ASSISTANCE IN THE APPLICATION OF PLATELET-ENRICHED FIBRIN IN PAEDIATRIC DENTISTRY

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In paediatric dentistry, endodontic treatment of young permanent teeth can be assisted by the use of platelet-rich fibrin (PRF). The main goal of the method of applying the platelet-enriched fibrin preparation is to achieve the regrowth of vascular tissue in the pulp chamber and to achieve further growth of the tooth root. In the Department of Paediatric and Preventive Dentistry of the Clinical Hospital Center Zagreb, the procedure has been applied since 2016.

The platelet-enriched fibrin preparation is an autologous material. It is prepared from a sample of extracted blood that is centrifuged, a process that separates blood cells from plasma, and the preparation is made from part of the plasma using a specially made set. Part of the plasma looks like a gelatinous mass, and it consists of platelets, leukocytes, growth factors and a fibrin network that connects them to each other. The provision of health care includes the psychological preparation of the patient and parents, the preparation of the clinic area, the preparation of centrifuges, sets for the preparation of preparations, dental instruments, materials and medicines, and the provision of conditions for carrying out the procedure in aseptic working conditions. It is necessary to perform a venipuncture, and immediately after the venipuncture the blood sample is included in the centrifugation. Then, it includes assisting the doctor during the preparation of the preparation and assisting during the dental procedure.

**Key words:** Platelets; Fibrin; Paediatric dentistry; Dental assisting

### APPLICATION OF PRGF GEL IN HEMATOLOGY PATIENTS AT THE UNIVERSITY HOSPITAL CENTER ZAGREB

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Von Willebrand disease is an autosomal dominant hereditary disease that manifests as atendency to bleed, caused by a deficiency or reduced function of the von Willebrand factor (vWF). It is the most common hereditary form of hemorrhagic diathesis, with an estimated incidence of 1 in 800 to 1000 people in the general population. Treatment for patients with von Willebrand disease is based on the prophylaxis and/or treatment of bleeding, involving the use of factor VIII and vWF concentrates derived from plasma or recombinant technology.

The aim of this lecture is to demonstrate the excellent cooperation, communication, and connection of the multidisciplinary team at the University Hospital Center Zagreb, where the nurse plays a crucial role.

**Key words:** Von Willebrand; Autosomal dominant hereditary disease; PRGF; Hematology patients; Multidisciplinary approach

### DENTAL ASSISTANCE DURING THE APPLICATION OF THE DENTAL MICROSCOPE IN ENDODONTIC TREATMENT

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The use of optical devices has been increasing during clinical work in dental medicine.

They ensure the detection of details that are difficult to see with the eye and more precise and less invasive therapy. By increasing the field of vision, a more thorough removal of the pathological and preservation of healthy tissue is possible. Working on a dental operative microscope (DOM) requires a calm patient and constant maintaining of the therapist's focus. The role of the nurse and dental assistant in this sense is extremely important.

The 26-year-old patient was referred by the competent dentist to specialist procedure, due to the impossibility of finding the root canal of the tooth 11. The position of the root canal was determined using the X-ray and CBCT images, and the canal was found with the aid of DOM. Improved visibility of the working field, significantly improved the identification of microscopic anatomical structures within the pulp chamber and finding the orifice of the root canal. The structure of the dental hard tissues was maximally preserved and correct cleaning and shaping of the root canal was verified. Therapist's manual skills and good coordination with the nurse through four-handed work are extremely important. Except passing the instruments and maintaining a dry working field during irrigation, coordinate work with the therapist was necessary by ensuring adequate lighting, ergonomics and documenting work phase.

Standard endodontic therapy based on tactile sensation is increasingly being replaced by vision-based therapy today. High magnification levels and amount of visual information expand the therapeutic possibilities of treatment.

**Keywords:** Dental assisting; Dental operating microscope; Four-handed work

## Poster presentation

### APPLICATION OF INTRAVENOUS SEDATION IN DENTAL PRACTICE - CASE REPORT

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**Aim:** intravenous sedation is a carefully controlled technique of intravenous administration of one or more drugs, the effect of which is to achieve conscious sedation, the patient remains conscious, has preserved reflexes, and can respond to verbal commands while the stress during dental procedures is reduced. The purpose of this paper is to show the possibilities of intravenous sedation in the dental office, which ensures a certain degree of depression of the central nervous system, which enables the patient to perform different types of procedures in one visit, which ensures their performance with minimal physiological and psychological stress for the patient.

**Materials and method:** the intravenous sedation method is preceded by an examination and medical history. Before performing sedation, it is important to assess the perioperative risk for the sedation procedure and to make a basic assessment of the airway, if it is necessary secure the airway in case of too deep sedation and cessation of breathing. Before the beginning of the dental procedure, it is necessary to place an intravenous cannula in the vein and during the procedure to apply intermittent or continuous administration of liquid. It has a relatively quick effect, and due to the possible onset of respiratory depression, it is necessary to observe physiological and pathophysiological changes in the patient's vital functions during each application.

**Results:** in this clinical case, after achieving a certain degree of sedation, carious lesions on the premolars (14, 45) and molars (36, 46, 37) in the upper and lower jaw were repaired, a one-visit revision of the endodontic treatment on the molar (46) was performed, the destroyed carious teeth (18, 16, 15, 48, 47, 38) were extracted and two implants were installed at positions 15 and 16. Repaired carious lesions on the premolars and molars in both jaws and the creation of composite fillings, a one-visit revision of the endodontic treatment of four root canals, the extraction of destroyed carious teeth and the replacement of teeth with the installation of two implants with minimal stress for the patient all in the same visit.

**Conclusion:** intravenous sedation is becoming an increasingly frequent method of sedation in dental offices due to the rapid onset of sedation, short duration of action, and the possibility of deepening the level of sedation if the desired level is not reached. Its main role is to reduce stress for the patient with a reduced number of visits to the therapist, as it enables different types of procedures to be carried out in one visit.

**Key words:** Intravenous sedation; Dental practice

### GENERAL ANESTHESIA IN THE DENTAL MANAGEMENT OF A CHILD WITH AUTISM - CASE REPORT

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**Aim:** autism is a pervasive developmental disorder that appears in the early years of life and affects all psychological functions. It is characterized by poor or no social interaction and communication, as well as limited and repetitive patterns of behavior. Impairment of cognitive, intellectual, linguistic, and social abilities, combined with limited adaptive behavior, complicates cooperation and results in increased fear, anxiety, or the inability to perform dental procedures. The purpose is to present dental treatment under general anesthesia. Individuals with autism usually require sedation or general anesthesia due to their underlying condition or extreme non-cooperation.

**Materials and methods:** a clinical examination and radiological analysis were not possible due to the child's lack of cooperation. For this reason, it was decided to restore the teeth under general anesthesia. General anesthesia is a reversible depression of the central nervous system that causes loss of consciousness, analgesia, amnesia, and muscle relaxation. Half an hour before the procedure, the child received premedication. The state of general anesthesia was established, and nasotracheal intubation was performed. Conservative restoration was done on the permanent teeth in both the upper and lower jaws. Endodontic treatment was performed on six front teeth. Hard and soft dental deposits were removed, and four molars were extracted. After the procedure, the patient stayed in the recovery room and was then discharged from the day hospital.

**Results:** the choice of anesthetic or sedation technique depends on the type of dental procedure and the patient. Many studies show a poorer oral status in autistic children compared to healthy children. Children with autism face constant barriers to timely access to oral health care and often seek help only when the pain becomes unbearable, making tooth extraction the only possible solution.

**Conclusion:** it is necessary to plan programs to promote oral health and ensure specialized staff and an individualized approach to adequately provide dental protection.

**Key words:** Autism; General anesthesia

### MACRO AND MICROSURGERY IN AUTOTRANSPLANTATION

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**Aim:** in the world of contemporary materials and vast variety of available techniques there are still cases where a tooth can not be saved. The extraction leaves three options in order to restore the masticatory function: bridges, dental implants or autotransplanted tooth. The first two represent an alloplastic implants in the vital tissue of adjacent teeth or alveolar bone. The only technique that utilizes the natural resources is the autotransplantation. When the indications are fulfilled, the oral surgeon and an endodontic specialist can remove the unsalvageable tooth, remove and reimplant on previous position the, non-functional usually third molar and restore it into function. The aim of this study is to replace a tooth with bad prognosis using autotransplantation.

**Materials and methods:** a patient with bad prognosis for the first molar that needs to be extracted and a third molar. The oral surgeon performed a macrosurgical atraumatic removal of both teeth to preserve as much as possible of periodontal ligament cells. The reposition of autotransplanted tooth mainly follows the tooth avulsion with placement of the splint and followed by microsurgical endodontical treatment of newly positioned tooth. The final crown reconstruction and restoring of the masticatory function is essential of long-term success.

**Results:** the autotransplanted tooth was restored to its function without ankylosis and, if OH is satisfactory, can remain functional like any other originally erupted tooth

**Conclusion:** since there are almost no age limitation it can be performed throughout the life of patients. The complications are virtually non-existing since it is an autologous transplant and the minimal material usage results in reduced costs.

**Key words:** Autotransplantation; Microsurgery; Microsurgery; Autologous transplant

### ENDO-PERIO LESIONS - CASE REPORT

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**Introduction:** endo-perio lesions are considered to be conditions that affect both the pulp of the tooth and the periodontal tissue. The infection primarily starts in the pulp or the periodontium and then spreads to the secondary tissue. The pathways for the transmission of infection can be the apical foramen or lateral canals as physiological pathways, or root

perforations, vertical fractures, loss of cementum, and similar as pathological or iatrogenic pathways. Such a tooth needs both endodontic and periodontal treatment.

**Materials and methods:** a 25-year-old patient came to polyclinic dissatisfied with previous treatment during which tooth 46 was extracted due to an endo-perio lesion, and an orthodontic appliance was placed to correct the bite and move tooth 47 to the position of tooth 46. The initial orthopantomogram showed this condition. Based on a second orthopantomogram, the patient was also advised to extract tooth 47, after which he came to our polyclinic for a second opinion. A revision of the previously proposed treatment was carried out, along with endodontic treatment of tooth 47, periodontal therapy, targeted antibiotic therapy based on bacteriogram findings, and continuation of orthodontic treatment. On the control X-ray two years after the treatment, complete bone regeneration with regression of the periodontal pocket mesially was observed, without symptoms of pain, pulsation, or edema. Therapy was managed with machine-assisted endodontics, single-visit treatment, periodontal therapy and orthodontic therapy.

**Results:** therapy resulted in saving tooth 47, which was initially planned for extraction, and moving tooth 47 to the position of tooth 46 as much as possible

**Conclusion:** despite the initially poor clinical and X-ray findings and a poor prognosis, an adequate treatment plan—primarily non-invasive—along with the defensive and regenerative capacity of the pulp and surrounding structures, should be the basic prerequisites for preserving the tooth and all its functions.

**Key words:** Endo-perio lesions; Single visit treatment; Non-invasive therapy

### DECOMPRESSION AS PREOPERATIVE TREATMENT FOR UNICYSTIC AMELOBLASTOMA

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**Aim:** ameloblastoma, an aggressive benign odontogenic entity with high recurrence rate, is one of the most common odontogenic tumor. It occurs often in the jawbone of young adults with no difference between the gender. The current WHO 5th classification distinguishes five different types of ameloblastoma: conventional/multicystic, unicystic, metastatic, peripheral, and adenoid. Purpose of this presentation is to present two cases of unicystic ameloblastomas of the mandible which were treated with fenestration decompression from period of 6 to 12 months, and in second stage through our ambulatory surgery with curettage. They are in follow-up for 3 years with no sign for recurrence.

**Materials and methods:** clinical and radiographic presentation include painless facial swelling, cortical expansion, tooth resorption and unilocular/multilocular radiolucency. Delayed diagnosis is made due the lack of symptoms and slow-growing nature. Treatment concept for ameloblastoma is controversial and depending on the clinical feature and type of the tumor might be surgical or non-surgical.

**Results:** the primary method is surgery which can be divided to conservative and radical. Modern surgical approach is to retain jaw function and architecture, despite the higher recurrence rate. One of the most used method is fenestration decompression with secondary enucleation and curettage especially effective for treating unicystic ameloblastoma.

**Conclusion:** this concept demonstrated a reduction in size of the initial lesion by new osseous formation after few months after placement of the tube. The presented cases confirmed that decompression with curettage could be efficient treatment option for this type of tumor, although there is obvious need for further research to investigate this fact.

**Key words:** Decompression; Unicystic ameloblastoma; Odontogenic tumor

### RECONSTRUCTION OF THE ORAL CAVITY AFTER COMMANDO SURGERY-CASE REPORT

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**Aim:** therapy of malignant changes in the oral cavity sometimes requires extensive operations, in this case a radical Commando operation was performed. After the removal of the primary malignant disease, it is necessary to restore the function and aesthetics of the oral cavity to the patient.

**Materials and methods:** in 2019, the patient was admitted to UHC Osijek due to a change in the mucousa of the lower jaw, squamous cell carcinoma in the area of the gingiva of the alveolar process of the mandible from teeth 44 to 47 was pathohistologically

confirmed. His medical history states surgery for nasopharyngeal cancer and treatment with chemoradiotherapy. 2020. the patient was hospitalized at the Department of Maxillofacial and Oral Surgery of KBC Osijek, due to the Commando operation with radical intraoral excision, segmental resection of the mandible and selective dissection of the neck in region I-IV and reconstruction of the defect with a free microvascular flap - fibula.

In 2022, he was again admitted to the Institute as part of the hospital for one-day surgery, an alveotomy on teeth 14 and 43 was performed and implant therapy in the region: 35, 42 and 45. After the completion of healing and osseointegration, endodontic therapy was performed on teeth 41 and 32. The patient was made a fixed prosthetic work in lower jaw, fixed on implants and remaining teeth.

**Conclusion:** The consequences of the Commando operation always result in a complex defect in an extremely demanding area for reconstruction. In order to restore the function of the jaw, it is necessary to replace part of the tissue, flaps and bone grafts are used for this. Restoring function and aesthetics in such changed tissue is extremely complex, but possible with adequate therapy. The advantages of fixed prosthetic work for the patient are numerous

**Key words:** Malignant changes; Commando surgery; Intraoral excision; Segmental resection; Mandible; Selective dissection

### DIFFERENCE IN THE OCCURRENCE AND INTENSITY OF POSTOPERATIVE PAIN IN RELATION TO GENDER AFTER TOOTH RESECTION UNDER GENERAL ANESTHESIA

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**Aim:** general anesthesia causes a temporary unconsciousness and sedation, facilitating painless execution of medical procedures. Dental procedures under general anesthesia allow the treatment to be completed in one visit, reducing discomfort for patients, parents and therapists. Although the benefits of this approach are numerous, children may experience postoperative pain. Self-assessment remains the primary method for evaluating pain, and research shows differences in the occurrence of pain between the sexes. The aim of this study is to show the difference in self-assessed postoperative pain between boys and girls.

**Materials and methods:** the study involved 92 children, aged 3 to 15 years, diagnosed with tooth decay and treated under general anesthesia. Out of all patients, 63% were boys (N=58) and 37% were girls (N=34). The day following the procedure, parents were contacted by phone to assess the pain presence and pain intensity using the Wang-Baker pain scale.

**Results:** pain was reported by 47.8% of boys and 52.2% of girls, with no statistically significant difference (p=0.116). When assessing pain intensity using the Wong-Baker scale, 51.7% of boys reported no pain, 29.3% experienced mild pain, and 13.8% reported moderate pain. Analgesics was given to 45% of boys. Furthermore, 35.3% of girls experienced no pain, 47.1% reported mild pain, while 11.8% reported moderate pain. Among girls, 41% received analgesics. Comparison of the pain intensity between the sexes did not show statistically significant difference (p=0.271).

**Conclusion:** according to the study findings, pain occurrence is more prevalent among girls, but this difference lacks statistical significance. Additionally, the intensity of pain in girls is higher, but this also is not statistically significant.

**Key words:** General anesthesia; Postoperative pain

### MULTIDISCIPLINARY MANAGEMENT OF DENS INVAGINATUS WITH ASSOCIATED RADICULAR CYST – A CASE REPORT

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**Aim:** dens invaginatus is a developmental anomaly that occurs during the

morphodifferentiation stage. It usually affects the upper lateral incisors, and less frequently the central incisors, premolars, and canines. The prevalence is 0.04%-10%. Treatment options include endodontic treatment, endodontic surgery, replantation, and extraction. Radicular cysts are often asymptomatic and are diagnosed through radiological findings. They are treated by removing the source of infection, with endodontic treatment or extraction of the causative tooth. Cyst enucleation is the only procedure that completely eliminates the cyst. The aim of this clinical case report is to demonstrate the success of a multidisciplinary approach.

**Materials and methods:** a 20-year-old female patient was referred for examination and treatment due to a change in the vestibular mucosa near tooth 12. She had a history of head trauma from five years ago. Analysis of CBCT images established the diagnosis of dens invaginatus in tooth 11, class IVb according to Monteil and Knoche, associated with a radicular cyst. Endodontic treatment of tooth 12 and invagination of tooth 11 included manual and mechanical instrumentation followed by a filling performed with a combination of injectable bioceramics and gutta-percha. Since there was no communication between the invagination and the pulp chamber, orthograde treatment of the root canal of tooth 11 was not possible.

**Results:** as a result, an apicoectomy of tooth 12 and an apicoectomy of the invagination and root of tooth 11, with retrograde filling using MTA, was performed under local anesthesia after lifting the mucoperiosteal flap. The cyst was completely enucleated and a PRGF preparation was placed in the bone defect.

**Conclusion:** dens invaginatus is a malformation with many variations. The goal of the therapy is to eliminate the infection and preserve the structure, aesthetics and function of teeth. The use of modern diagnostics and bioactive materials, as well as multidisciplinary approach to the treatment, are essential for the success of the therapy.

**Key words:** Dens invaginatus; Developmental anomaly; Endodontic treatment; Endodontic surgery; Replantation

#### AUTISM SPECTRUM DISORDER: AMBULATORY TREATMENT OR DENTAL SURGERY UNDER GENERAL ANESTHESIA?

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**Aim:** autism spectrum disorder (ASD) is characterized by impairment in three behavioral domains including communication, social interaction, and stereotypic repetitive behaviors leading to severe difficulties in establishing therapist-patient connection and performing dental procedures, especially in adulthood. Therefore, it is crucial to optimize dental care workflow in early childhood. The aim is to determine the critical point in therapy when to prioritize dental treatment of neurodivergent patient under general anesthesia (GA) over the ambulatory treatment.

**Materials and methods:** a patient (9) diagnosed with ASD was referred for severe carious lesions assessment. Previous traumatic dental events were experienced. Clinical examination confirmed initial carious lesions in permanent molars and severe carious lesions in primary molars. After performing behavioral management techniques (BMT) and prophylactic procedures, cooperation was partially established, however still unsatisfactory for placing an adequate filling. In order to avoid repeated traumatic experience, and due to the need for immediate treatment, the patient underwent dental surgery under GA. The patient was introduced to balanced anesthesia, using hypnotic and opioid (propofol, remifentanyl) by inhalation and intravenously.

**Results:** deciduous molars were extracted, fillings and fissure sealant placed. After the procedure, BMT and prophylactic procedures were continued.

**Conclusion:** adequate dental care without traumatic experiences starting from early childhood is obligatory for ASD diagnosed patients in order to establish effective cooperation in adulthood. Suggested workflow is as following: 1. BMT and prophylactic procedures, 2a. Ambulatory treatment if cooperation is established or 2b. Assessment of existing dental problems under GA, 3. Further BMT and/or prophylactic procedures, 4. Ambulatory dental care.

**Key words:** Autism; General anesthesia; Behavioral management techniques; Cooperation

#### SEDATION WITH NITRIC OXIDULUS DURING DENTAL PROCEDURES AT CHILDREN

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The procedure for using inhalation sedation with nitric oxide during dental procedures is recognized as a safe and effective method for reducing anxiety in children receiving dental treatment. This method is recommended by a pediatric dental specialist and is used for children who require therapeutic dental procedures but are unable to cooperate due to extreme fear. The use of inhaled sedation with nitric oxide induces drowsiness and relaxation, allowing the patient to remain awake and responsive during the procedure, thus facilitating cooperation. Approximately 40 sedations utilizing nitric oxide were carried out at the Clinical Hospital Center Zagreb starting in January 2024. The primary focus when employing nitric oxide sedation in healthcare is ensuring the safety of the patient. Psychological preparation of the patient is necessary, and in the case of children, parents usually accompany them. Additionally, the preparation involves documenting forms, setting up the clinic area, verifying the proper functioning of the equipment for administering nitric oxide and oxygen from gas cylinders, as well as preparing dental instruments, materials, and medications. Procedure sedation requires continuous monitoring of the patient's response to physical stimuli through stimulation and verbal contact, as well as monitoring of vital functions. Assisting the doctor contributes to implementing the procedure in a shorter time.

**Keywords:** Sedation; Nitrous oxide; Dental procedures; Health care; Children