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PREDAVANJA PO POZIVU / *LECTURES*

PERIOPERATIVE HEART FAILURE DURING CARDIAC SURGERY PROCEDURES

Suad Keranović, Medical Institute Bayer Tuzla

Introduction: During cardiac surgery procedures, especially with the application of extracorporeal blood flow (ECB), damage to the myocardium occurs. With more than 20% of patients it can lead to acute cardiovascular insufficiency, which is manifested by the inability of the heart to provide a sufficient amount of blood, oxygen and other nutrients necessary to maintain the metabolic demands.

Patients and methods: Patients of older age (>65 years), LVEF < 40%, NYHA IV, urgent surgeries, BSA < 1.7m², application and longer duration of ECB are common risk factors. In order to prevent perioperative heart failure, proper and timely preoperative assessment of the patient such as STS, Parsonnet and EuroScore system is necessary. Planning and application of appropriate diagnostic and therapeutic procedures is needed. The most important clinical manifestations are: pulmonary edema, biventricular congestive heart failure and cardiogenic shock. These patients stay longer in the intensive care, require prolonged mechanical ventilation and have complications on other organs.

Conclusion: Optimization of risk factors, proper therapeutic strategy of myocardial protection (mitigation of ischemic and reperfusion damage), early recognition and treatment of hemodynamic disorders with inotropic and mechanical circulatory support are the basic principles of prevention and treatment of perioperative heart failure during cardiac surgery procedures.

Key words: perioperative heart failure, myocardial protection, pulmonary edema, cardiogenic shock, mechanical circulatory support.

LIJEČENJE POSTOPERATIVNOG BOLA: MOGUĆNOSTI I DILEME

Sanja S. Marić[1,2], Dalibor Bošković[3], Vanja Starović[1,2], Djordje Veljović[1,2], Ruzica Motika-Sorak[1], Milena Stevanović-Živanović[1], Draženka Matović[1], Sonja Bojat[1], Andrea Jegdić[1], Tamara Samardžić[1], Branislav Vrećo[1]

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Olakšavanje ili uklanjanje bola jedan je od najvažnijih problema u medicini. Bol poslije hirurškog zahvata je uobičajen, često jak i uglavnom neadekvatno tretiran. Akutni bol je dominantan problem u postoperativnom periodu kod svakog svjesnog bolesnika. Nastaje usljed hirurške incizije i oštećenja nerava, tako da predstavlja kombinaciju nociceptivnog i nenociceptivnog bola. Dobra procjena bola omogućava adekvatan izbor metode liječenja bola kao i procjenu efikasnosti primjenjenog tretmana.

Posljedice nedovoljne analgezije uključuju usporen oporavak pacijenta, promijenjen imunološki odgovor, promijenjen odgovor na stres, pojavu vegetativnih simptoma i mogućnosti nastanka permanentnih promjena u perifernom i centralnom nervnom sistemu sa tranzicijom u hronični bolni sindrom. Multimodalna analgezija se koristi rutinski posljednjih decenija. Djeluje se na sve aspekte bolne osovine, uključujući stimulaciju, modulaciju, inflamaciju i psihološku komponentu, gde kombinacija lijekova i terapijskih postupaka stvara režim sinergističke kontrole bola. Primjenjuju se opioidni i neopioidni analgetici, koanalgetici, različite tehnike regionalne analgezije, uz nefarmakološke procedure. Treba uvijek uzeti u obzir vrstu hirurške intervencije i stanje pacijenta. Bez obzira na sve što se zna i primjenjuje, veliki broj pacijenata ima nedovoljno liječen postoperativni bol.

Multimodalni analgetski pristup osigurava bolju kontrolu bola nego monoterapija, smanjuje perioperatovni morbiditet i skraćuje dužinu hospitalizacije.

Ključne riječi: akutni postoperativni bol, multimodalna analgezija, analgetici

TREATMENT OF POSTOPERATIVE PAIN: POSSIBILITIES AND DILEMMAS

Sanja S. Maric[1,2], Dalibor Boskovic[3], Vanja Starovic[1,2], Djordje Veljovic[1,2], Ruzica Motika-Sorak[1], Milena Stevanovic-Zivanovic[1], Drazenka Matovic[1], Sonja Bojat[1], Andrea Jegdic[1], Tamara Samardzic[1], Branislav Vreco[1]

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Treating pain is on of the most important problems in medicine. Pain after surgery is common, often severe and generally inadequately treated. Acute pain is very important problem in postoperative period in every conscious patient. Postoperative pain is common and often inadequately treated. It occurs as a result of surgical incision and nerve damage, so it represents a combination of nociceptive and non-nociceptive pain. Good pain assessment is very important for adequate pain control.

Inadequately controlled pain prolongs patient's recovery, may cause changes to stress and immune response, and sometimes lead to permanent changes in central and peripheral nervous system. If not treated it also could progress to chronic pain syndrome. Multimodal analgesia has been used routinely in recent decades. This is the concept that pain should be treated on all levels including stimulation, modulation, inflammation and psychological component. The combination of medication and therapy is the best modality for adequate pain control. Opioid and non-opioid analgesics and coanalgesics are applied, different regional analgesia techniques and non-pharmacological procedurs. The type of surgical intervention and the patient's condition should always be taken into account. Despite everything that is known of and applied, a great number of patients suffer from postoperative pain.

A multimodal analgesic approach ensures better pain control than monotherapy, reduces perioperative morbidity and shortens the length of hospitalization.

Key words: acute postoperative pain, multimodal analgesia, analgesics

INVAZIVNI POSTUPCI U JEDINICI INTENZIVNOG LIJEČENJA

Zoran Karlović, Odjel za anesteziju, reanimaciju i intenzivno liječenje, Sveučilišna klinička bolnica Mostar

Poseban izazov u jedinici intenzivnog liječenja su bolesnici koji su zbog težine bolesti dugotrajno ovisni o mehaničkoj ventilaciji, dugotrajnoj primjeni intravenske terapije ili produženoj potrebi za hranjenjem putem nazogastrične sonde. Riječ je najčešće o kompleksnoj skupini bolesnika s brojnim subolestima. Najčešće su to onkološki bolesnici, bolesnici s neuromišićnim bolestima i bolesnici s traumama glave.
Ovim izlaganjem prezentirati ćemo invazivne postupke koji se izvode terapijski i za potrebe liječenja bolesnika u jedinici intenzivnog liječenja Sveučilišne kliničke bolnice Mostar. Riječ je o metodama kojim se zbrinjavaju venski i dišni put, hranjenje bolesnika te potreba za pleuralnom drenažom.
Izložit ćemo povijest razvoja, indikacije, kontraindikacije, tehnike plasiranja, i komplikacije prilikom plasiranja porta katetera[1], perkutane gastrostome[3], perkutane traheostome[2] i torakalne drenaže UNICO perkutanim setom. Također čemo prezentirati benefite svih navedenih metoda za bolesnika, osoblje i bolnički sustav te načine korištenja i održavanje.

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INVASIVE PROCEDURES IN THE INTENSIVE CARE UNIT

Zoran Karlović, Department of anesthesiology, reanimatology and intensive care, University Clinical Hospital Mostar

A special challenge in the intensive care unit are patients who, due to the severity of their pathologies are long-term dependent on mechanical ventilation, long-term use of intravenous therapy or prolonged need for feeding via nasogastric tube. It is usually a complex group of patients with numerous comorbidities. Most often these are cancer patients, patients with neuromuscular diseases and patients with traumatic brain injury.

With this presentation, we will present invasive procedures that are performed therapeutically and for the treatment of patients in the intensive care unit of the University Clinical Hospital Mostar. These are methods that take care of the venous access and airway, feeding the patient and the need for pleural drainage.

We will present the history of development, indications, contraindications, placement techniques, and complications during placement of the port catheter[1], percutaneous gastrostomy[3], percutaneous tracheostomy[2] and thoracic drainage with the UNICO percutaneous set. We will also present the benefits of all the mentioned methods for patients, staff and the hospital system, as well as ways of managing them.

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1. Barbetakis N, Asteriou C, Kleontas A, Tsilikas C. Totally implantable central venous access ports. Analysis of 700 cases. J Surg Oncol. 2011 Nov 1;104(6):654-6. doi: 10.1002/jso.21990. Epub 2011 Jun 13. PMID: 21671465.
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PERIOPERATIVE MANAGEMENT OF A CHILD WITH DOWN SYNDROME

Adisa Šabanović Adilović
Kantonalna bolnica Zenica

A syndrome is a set of clinical characteristics or symptoms that correlate with each other and often result in a certain pathological condition, disease, or disorder. Down Syndrome (DS) is the most common chromosomal abnormality in humans. Of all surgical procedures 2.2% in children were performed on those with some congenital syndrome. DS was the most common (1/4 of all cases).

DS or Trisomy 21, is the only known autosomal aneuploidy consistent with a prolonged survival into adulthood and was first described by Dr. John Langdon Down in 1866.

DS patients present a large but inconsistent set of typical morphologic features. These anatomic and physiologic features appear even before birth. DS babies are usually small for their gestational age and born prematurely, although their placentas have a normal size and morphology. Growth remains depressed in infancy and throughout childhood. In addition, they usually present distinct features across several systems: cardiovascular, respiratory, gastrointestinal, nervous, musculoskeletal, immune, hematologic, endocrine, ophthalmic, and auditory. Many of these problems have significance for the anesthesiologist. On this topic we will explain and evaluate through the presentation of the Case report an anesthesia considerations, induction, progress of the case and postoperative management of a child with Down Sy.

EFFECTS OF EPIDURAL ANALGESIA ON THE COURSE OF LABOR – *A PATIENT SAFETY PERSPECTIVE*

Anita Djurdjevic Svraka; General Hospital Gradiska, BiH

Objectives: The health of women correlates strongly with the social and economic well-being of a community or society. Acute pain during childbirth is undertreated in variable resource environments (VRE)[1].The development of a labour epidural service should encompass patients' safety as its key tenant. Developing a high quality epidural service requires a well-trained, cooperative multidisciplinary team, an adequately equipped unit, and dedicated leadership whose role is to ensure the service maintains high standards.
The aim of this study was to evaluate of the epidural labor service by compare the effects of epidural analgesia on relief of labor pain, progress, and outcome of labor in primigravid parturients to those who did not receive any analgesia by anesthesiologist.

Material and methods: This was a retrospective hospital-based study conducted on first 100 patients primigravida after establishment of epidural service. Parturients who were sign to receive epidural analgesia formed group A (n=50) and parturients which they did not request epidural analgesia formed group B (n=50). All parturient are induced in delivery room with Bishop score 5.The primary objective was to compare of pain measured by the Visual Analogue Scale (VAS) score. Secondary objectives were to compare the duration of labor, mode of delivery, and neonatal outcome.

Results and discussion: Epidural analgesia alleviated labor pain in all primigravid parturients who opted for it, without an increase in surgery labor *(17% vs 16%)* .Pain intensity (VAS) was significantly lower in group A compared to group B at all measured points of time ($p<0.001$). Fall in mean VAS score in group A from 7.94 to 3.86 within 20 min with the bolus dose. Labor epidural analgesia (LEA) for parturients in the delivery room resulted in better pain management during labor and had a large impact on patient satisfaction during labor. The length of the first stage of labor was slightly longer in group A (*p 0.8)* according a Bishop score in unit of time. By linear correlation in group A was significant impact of parturient age on surgical outcome of labor *(p 0,1).* Induction of labor was carried out in 69.4% of patients, but there was no connection between the outcome of labor and induction of labor. Obstetrical indication of induction on labor was safe procedure. Neonatal outcome was measured through Apgar score and Apgar after 5 min was a lower after cesarion section vs vaginal delivery *(p 0,02)*. Lower Apgar after 5 min after cesarean section it could be explained by prolonged suffering of the fetus during the birth of both groups of parturients.

Conclusion: LEA did not significantly affect the course of childbirth, except for a small extension of the first fertile stage. Provision of labour analgesia by working towards establishing an epidural service should remain an important goal for anaesthesia departments worldwide. As anesthesiologist we must know that 84,2% maternal death are preventable[2]. Use of LEA , 14% decrease in risk of severe maternal morbidity and neuroaxial anesthesia, as it self procedure, reduce risk of PPH and PPH is leading cause of maternal morbidity[3].

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SPINALNA ANESTEZIJA ZA CARSKI REZ KOD UROĐENOG DEFORMITETA KIČME – PRIKAZ SLUČAJA

Denis Odobašić, JZU UKC Tuzla, Klinika za anesteziologiju i reanimatologiju

Prvorotka A.M.sa urođenim deformitetom kičme (Scoliosis thoracolumbalis,Gibus thoracicus) i sa drugim dijagnozama (Contracturom art.coxae bill, Asthma bronchiale, H gestosis) primljena je na GAK 18.8.2022 god u 38/39 NG, zbog planiranja porođaja. Istog dana konzilijarno pregledana i odlučeno je da ide u pripremu za elektivni carski rez.U zadnjoj sedmici joj je zbog povišenog pritiska uključen Methyl Dopa tbl od 500 mg . Istog dana su uzeti laboratorijski nalazi neophodni za carski rez i EKG te pozvan anesteziolog u konsultaciju. Nalaz anesteziologa: urođeni deformitet kičme ,boluje od bronhijalne astme na inhalacionoj terapiji. Prije 3 mjeseca operisala slijepo crijevo bez anestezioloških komplikacija. TV 149 cm. MP 1. Preferira se regionalna anestezija, a u slučaju OET anestezije premedikacija kortikosteroidima. Sljedeći dan pacijentica je stavljena na redovan program i urađen je carski rez u spinalnoj anesteziji (10 mg Levobupivacaina i 25 mcg Fentanyla) sa pancil point iglom 25 G. Carski rez i anestezija protekli uredno bez komplikacija ,i rodilo se živo i zdravo novorođenče TT 3090 ,PD 55, Apgar scora 9/9. Početak operacije 9:07 a kraj u 9:41. Preoperativno pacijentica je dobila antibiotik i kortikosteroida, a postoperativnom analgetika i NMH po šemi.

Diskusija U JZU UKC Tuzla regionalna anestezija za carski rez kao standardna procedura je uvedena u aprilu 2017 god nakon održane prve škole akušerske anestezije u saradnji sa Kybele američkom nevladinom organizacijom. Od tada pa do danas spinalna anestezija se preferira kod svih carskih rezova (redovni i hitni) a obavezno kod pacijentica kod kojih je opšta anestezija rizična. Kada je u pitanju ova pacijentica deformitet kičme je bio otežavajuća okolnost,ali je ovo za nas bio veliki izazov jer se do tada nismo sretali sa ovakvim deformitetom kičme kod trudnice koji bi radili u spinalnoj anesteziji.

Zaključak: deformitet kičme nije kontraindikacija za spinalnu anesteziju

Ključne riječi: carski rez,spinalna anestezija,urođeni deformitet kičme

OBEZBJEĐENJE I ODRŽAVANJE DIŠNOG PUTA KOD ODRASLIH PACIJENATA SA TEŠKOM TRAUMOM

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Uvod: Obezbjeđenje i održavanje dišnog puta je često kritičan *"prvi korak"* u reanimaciji teško ozlijeđenih pacijenata. Identifikovanje potencijalno otežanog dišnog puta, poznavanje odgovarajućih protokola i suportivnih metoda omogućava planiranje strategije za uspješno obezbjeđenje i održavanje dišnog puta.

Cilj: Obezbjeđenje definitivnog dišnog puta kod pacijenata sa teškom traumom je od vitalne važnosti u ranom zbrinjavanju, a neadekvatno obezbjeđenje dovodi do teškog morbiditeta, te mortaliteta.

Materijal i metode: Menadžment dišnog puta kod pacijenata sa teškim ozljedama počinje kada na mjesto povrjeđivanja stigne prva osoba/ ekipa koja može obezbjediti dišni put i nastavlja se do sve do njegovog definitivnog zbrinjavanja i održavanja. Vodeći principi menadžmenta dišnog puta su isti: obezbjediti dišni put, oksigenaciju i/ili ventilaciju pacijenta.
Rezultati i diskusija: Vremenski period za obezbjeđenje dišnog puta je kratak, jer se stanje pacijenta može brzo pogoršati. U takvim okolnostima su donošenje odluke i obezbjeđenje dišnog puta otežani. Ljekar mora razumjeti kompleksnost situacije, znati različite metode i sredstva za obezbjeđenja dišnog puta, te imati iskustva i vještine njegovom obezbejeđivanju u hitnim slučajevima.
I dalje postoje neslaganja u vezi broja pokušaja obezbjeđenja dišnog puta. Broj pokušaja obezbjeđenja dišnog puta zavisi od nekoliko faktora, uključujući ljekara sa iskustvom u obezbjeđenju dišnog puta i klinički status pacijenta.

Zaključak: Menadžment dišnog puta kod pacijenata sa teškim ozljedama počinje kada na mjesto povrjeđivanja stigne prva osoba/ ekipa koja može obezbjediti dišni put i nastavlja se do sve do njegovog definitivnog zbrinjavanja i održavanja. Uporedo sa obezbjeđenjem dišnog puta, mora se provoditi intenzivni reanimacioni tretman kako ne bi došlo do daljeg pogoršanja hemodinamskog statusa teško ozlijeđenog pacijenta, posebno u toku intubacije.

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AIRWAY MANAGEMENT IN ADULT TRAUMA PATIENTS

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Introduction: Airway management is often critical early step in resuscitation of severely injured trauma patient. Identifying harbingers of potentially difficult airway, having knowledge of difficult airway algorithm, and understanding proper utilization of alternative airway devices will allow for a pre-planned strategy for successful airway management.

Goal: Establishing definitive airway in trauma patient is primary essential of early management. Any flaw in airway management may lead to grave morbidity or mortality.

Material and methods: Airway management in severely injured adult trauma patients begins from the time of first responder arrival and continues until definitive airway can be established and maintained. Though airway management is important in both: prehospital setting and emergency department, the priorities differ slightly due to alterations in environment, personnel, equipment, expertise and experience. However, guiding principles of airway management remain the same: open airway, oxygenation, and ventilation.

Results and discussion: Time available to accomplish airway control is short, and the patient's condition may deteriorate rapidly. Both decision-making and performance are impaired in such circumstances. In order to improve airway management capability, physician has to understand complexity of situation, be familiar with various airway devices and alternative ventilation techniques, and have experience in several emergency airway skills.

Much of disagreement surrounded number of intubation attempts that should be performed. The number of attempts performed depends on several factors including the experience of the intubating provider, the physiologic status of the patient, and the presence of modifiable factors during the attempt at intubation.

Conclusion: Airway management in severely injured adult trauma patients begins from the time of first responder arrival and continues until definitive airway can be established and maintained. Before and during the intubation process, severely injured trauma patient should receive simultaneous resuscitation to address abnormalities in breathing and circulation that may be exacerbated during intubation.

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LIJEČENJE KRITIČNO BOLESNIH PACIJENATA SA PNEUMONIJOM POVEZANOM SA MEHANIČKOM VENTILACIJOM

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Uvođenje mehaničke ventilacije u kliničku praksu započelo je eru intenzivne medicine sa mogućnostima respiratorne potpore kod kritično bolesnih pacijenata sa povećanim mogućnostima preživljavanja a i smanjenja ukupnog morbiditeta.

Međutim, uz sve prednosti i mogućnosti koje obezbjeđuje mehanička ventilatorna podrška, od kasnih pedesetih godina prošlog vijeka, kada je prepoznata pneumonija povezane sa primjenom ventilatorne podrške, takozvana VAP (ventilator associated pneumonia), kliničari se svakodnevno sreću sa problemom dijagnosticiranja pneumonije i izazovima liječenja i prevencije ovog teškog stanja.

Ne postoji potpuni konsenzus vezano za kriterije za dijagnozu VAP-a , s obzirom na situaciju da pacijenti koji trebaju ventilatornu podršku imaju već složeno opšte stanje zbog komorbiditeta, ali najčešće se navode podaci o razvoju pneumonije u vremenu dužem od 48 h nakon trahealne intubacije kod pacijenata kojima je neophodna respiratorna potpora. S obzirom na izuzetno visoku smrtnost ove teške komplikacije i na veliki procenat pacijenata kod kojih se može razviti pneumonija povezana sa ventilatornom podrškom razvijene su kliničke smjernice za prevenciju i liječenje. Uvedene su različite kombinacije smjernice, pored smjernica za podešavanje ventilacije, pokazalo se da su izuzetno važne i druge tehnike koje ukjučuju higijenu ruku, odgovarajući broj zdravstvenog osoblja, podešavanje nivoa sedacije kao i protokola odvajanja od respiratora, neinvazivna ventilatorna potpora, održavanje odgovarajućeg pritiska kafa endotrahealnog tubusa, selektivna dekontaminacija digestivnog trakta. Navedene mjere bi trebalo da izvodi dobro educirani tim zdravstvenih radnika uz svakodnevno provjeravanje izvedivosti mjera.

Smanjenje dužine trajanja ventilatorne podrške je veoma značajno za prevenciju razvoja pneumonije povezane sa ventilatornom podrškom, a ova mjera zahtijeva praćenje protokola za odvajanje od mehaničkog respiratora i angažovanje posvećenog multidisciplinarnog tima sa educiranim medicinskim osobljem i respiratornim terapeutima.

Cilj ovog rada je fokusiran na procjenu sadašnjih znanja i konsenzusom nastalih preporuka za liječenje pacijenata sa VAP pneumonijom.

Ključne riječi: VAP, pneumonija povezana sa ventilatornom podrškom, ventilatorna podrška, kritična bolest

TREATMENT OF CRITICALLY ILL PATIENTS WITH VENTILATOR ASSOCIATED PNEUMONIA

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New era of clinical medicine started by introduction of mechanical ventilation in the clinical pratice, with possibilities of respiratory support for the critically ill patients in terms of decreased morbidity and increased survival rate.

Along with all benefits and new possibilities that mechanical ventilation may offer, since the late fifties of the last century, clinicians have been recognizing specific form of pneumonia-pneumonia associated with ventilatory support , named ventilator associated pneumonia or VAP, with specific challenges in prevention and treatment of this serious condition.

Due to critical conditions of critically ill patients who had developed respiratory failure from different causes and who need respiratory support, general consensus of criteria for VAP is lacking, but the most commonly used factor is development of pneumonia in the time longer than fortyeight hours after tracheal intubation. The recognition of the high incidence and severity of the condition with high mortality initiated clinical research on this topic and publishing of clinical recommendations for prevention and treatment of ventilator associated pneumonia. Sveral different protocols have been introduced for reducing VAP incidence. Besides the ventilator bundle, other techniques like hand hygiene, appropriate number of staff in ICU, introduction of sedation and weaning protocols, noninvasive ventilatory support, appropriate pressure in the cuff of endotracheal tube, selective digestive tract decontamination and other measures could be of great importance. These measures should be performed by a multidiciplinary and well educated team with daily checklists.

A decrease of the number of days on ventilatory support is very important for prevention of the development of ventilator associated pneumonia, and it may be accomplished by protocol-guided weaning process performed by a dedicated multidisciplinary team including respiratory therapists.

The aim of this paper is reconsidering of the current clinical knowledge and recommendations on the topic of treatment of patients with ventilator associated pneumonia.

Key words: VAP, ventilator associated pneumonia, mechanical ventilatory support, critical illness

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PERCUTANEOUS DILATATION TRAHEOSTOMY- OUR EXPERIENCE

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Tracheostomy is most common procedure preformed in ICU at criticaly ill patients on prolonged mechanical ventilation. Tracheostomy could be surgical and percutaneous dilatation tracheostomy(PDT). PDT is performed with Seldinger technic- J guide wire and have tendency to replace surgical tracheostomy. This is minimally invasive procedure which is preformed bedside at ICU by intensivist. Prolonged mechanical ventilation is the most frequent indication for tracheostomy. The number of contraindication and complication decrease with experience. Meticulous preoperative preparation and pre assessment with ultrasound- anatomy of neck structure: such as visualisation of blood vessels, cartilage cricoide and tracheal ring decrease number of complication and decrease time need to perform procedure. Confirmation guide wire with bronhoscope helps to avoide misspelacement and leasion of posterior wall of trachea.
The first PDT in our ICU Cantonal hospital of Zenica was performed in 2016. In first year percentage PDT vs surgical tracheostomy was 20,7% and in 2023 was 79,6% in the favor of PDT.
Now PDT is rutine procedure in our ICU. With increased number of doctors who perform PDT number of PDT increased. We had few complications, mostly mild hemorrhage without necessity for surgical intervention and one moderate hemorrhage with decanulation-we had to do orotracheal intubation and surgical revison of traheostomy. Percentage of complications was 5,6% in our ICU and in literatoure was between 4,0-16,6.
The mean preference of PDT over surgical tracheostomy is less infection of stoma, less costs of procedure, shorter time for performimg traheostomy and the most importantly it is bedside procedure, no need for OR.

Key words: complications,haemorrhage, surgical, decrease,performed

PERCUTANA DILATAIVNA TRAHESTOMIJA- NAŠE ISKUSTVO

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Traheostomije je procedura koj se često izvodi u JIL kod pacijenata koji iz više razloga zahtjevaju produženu mehaničku ventilaciju. Traheostomija može biti hirurška koja se izvodi u opertivnoj sali i perkutana dilatativna traheostomija koja se kao minimalno invazivan procedura izvodi pored kreveta pacijenta u JIL.
Perkutana dialatativna traheostomija upotrebom Seldingerove tehnika- J žice uvođača potisnula hiruršku traheostomiju. Izvodi je ljekar anesteziolog ili intenzivista nakon sprovedene obuke. Procedura je uglavnom siguran kada se izvodi od strane obučenog ljekra.
Prva perkutana traheostomia u KB Zenici je uradjena 2016 godine. Prve godine udio perkutane traheostomije u odnosu na hirursku bio 20,7 % u 2023 godini 79,6%. Za ovaj period značajno je porasto broj PDT ali i broj ljekra koji je izvode. Upotrebom ultrazvuka i bronhoskopa pri izvodjenu procedure smanjuje se broj neželjenih komplikacija . Danas se u našoj JIL hirurška traheotomija radi isključivo kada se ultrazvukom teško diferenciraju anatomske strukture vrata i kada čekujemo krvarenje. Do sada smo od koplikacija imali nekoliko manjih krvarenje bez hirurške intervencije i jedno ozbiljno krvarenje u prva 24 sata kada se morala uraditi orotrahealna intibacija i revizija traheostome. Broj komplikacija je 5,6%. U literaturi se broje komplikacija kreće od 4,0-16,6 %. Kod PDT imali smo znatano manje lokalne infekcije u odnsu na hiruršku traheotomiju, manje krvarenja te kraće vrijeme potrebno za izvođnej procedure, neme potrebe za opertivnom salom radi traheostomije.

Ključne riječi: infekcija, hirurška, komplikacije, traheotomija, bronhoskop

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POSTER PREZENTACIJE / *POSTER PRESENTATIONS*

REFIDING SINDROM: KLINIČKA RELEVANCIJA, PATOFIZIOLOGIJA I TERAPIJSKI PRISTUPI

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Refeeding sindrom (RS) je kompleksno medicinsko stanje koje se javlja kao rezultat brze i agresivne reintrodukcije ishrane kod osoba koje su duže vreme bili u stanju malnutricije, kao što su pacijenti sa anoreksijom nervozom, dugotrajnom gladovanjem ili ozbiljnim gastrointestinalnim bolestima. Ovaj rad razmatra ključne aspekte RS-a, uključujući njegovu kliničku relevantnost, patofiziologiju i terapijske pristupe. RS je ozbiljan i potencijalno životno ugrožavajući sindrom, čija je prevalencija nedovoljno prepoznata i dokumentovana. Pacijenti sa RS-om često razvijaju različite komplikacije, uključujući elektrolitne disbalanse, srčane aritmije, respiratornu insuficijenciju, i neuromuskularne komplikacije. Razumevanje kliničke relevantnosti RS-a je od suštinskog značaja za pravilno upravljanje pacijentima koji su podložni ovom sindromu. Patofiziologija RS-a je složena i uključuje poremećaje u metabolizmu elektrolita, posebno fosfata, magnezijuma i kalijuma. Reintrodukcija ishrane izaziva povećanu insulinemiju, što dovodi do brze apsorpcije glukoze i aminokiselina. Ovo može uzrokovati premestanje intracelularnih elektrolita u ćelije, što dovodi do elektrolitne neravnoteže. Osim toga, povećana aktivnost metabolizma fosfata tokom reintrodukcije hrane može dodatno pogoršati nedostatak fosfata, što je ključni element RS-a.Upravljanje RS-om zahteva pažljivu procenu i individualizovan pristup svakom pacijentu. Ključni terapijski ciljevi uključuju postepeno povećanje energetske unosa, pravilno nadoknađivanje elektrolita, posebno fosfata, i praćenje pažljive kliničke slike pacijenta. Nutritivna podrška treba biti pod stalnim nadzorom medicinskog tima, a elektrolitni status treba pažljivo pratiti i korigovati. Terapija RS-om takođe može zahtevati farmakološke intervencije, kao što su suplementacija fosfata ili magnezijuma. Refeeding sindrom predstavlja ozbiljan medicinski izazov koji zahteva sveobuhvatno razumevanje njegove kliničke relevantnosti, patofiziologije i terapijskih pristupa. Pravilno prepoznavanje i upravljanje RS-om su ključni za sprečavanje potencijalno ozbiljnih komplikacija i poboljšanje ishoda pacijenata koji su podložni ovom sindromu.

REFEEDING SYNDROME: CLINICAL RELEVANCE, PATHOPHYSIOLOGY, AND THERAPEUTIC APPROACHES

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Refeeding syndrome (RS) is a complex medical condition that arises as a result of the rapid and aggressive reintroduction of nutrition in individuals who have experienced prolonged malnutrition, such as patients with anorexia nervosa, prolonged starvation, or severe gastrointestinal diseases. This abstract discusses key aspects of RS, including its clinical relevance, pathophysiology, and therapeutic approaches. RS is a serious and potentially life-threatening syndrome, the prevalence of which is often underrecognized and underdocumented. Patients with RS frequently develop various complications, including electrolyte imbalances, cardiac arrhythmias, respiratory failure, and neuromuscular complications. Understanding the clinical relevance of RS is crucial for the proper management of patients susceptible to this syndrome. The pathophysiology of RS is complex and involves disruptions in electrolyte metabolism, particularly phosphorus, magnesium, and potassium. The reintroduction of nutrition triggers increased insulinemia, leading to the rapid absorption of glucose and amino acids. This can result in the intracellular shifting of electrolytes, leading to electrolyte imbalances. Additionally, increased phosphorus metabolism during refeeding can exacerbate the deficiency of phosphorus, a key element of RS. Managing RS requires careful assessment and an individualized approach for each patient. Key therapeutic goals include a gradual increase in energy intake, proper electrolyte replacement, especially for phosphorus, and close monitoring of the patient's clinical condition. Nutritional support should be under constant medical supervision, and electrolyte status should be carefully monitored and corrected. RS therapy may also necessitate pharmacological interventions, such as phosphorus or magnesium supplementation. Refeeding syndrome presents a significant medical challenge that necessitates a comprehensive understanding of its clinical relevance, pathophysiology, and therapeutic approaches. Accurate recognition and management of RS are critical to preventing potentially serious complications and improving outcomes for patients susceptible to this syndrome.

PROFILAKSA TROMBOEMBOLIJE U ELEKTIVNO OPERIRANIH BOLESNIKA S TUMORSKOM PATOLOGIJOM MOZGA U SVEUČILIŠNOJ KLINIČKOJ BOLNICI MOSTAR

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Uvod: Bolesnici s primarnim ili metastatskim tumorima mozga imaju povišen rizik razvoja tromboembolijskih incidenata zbog latentne hiperkoagulabilnosti, dužine neurokirurškog zahvata, upotrebe kortikosteroida ili kemoterapije, te prirode same bolesti koja je često praćena parezom ili plegijom donjih ekstremiteta.
Učestalost razvoja venske tromboembolije, osobito u postoperativnom razdoblju, značajno je veća u ovoj skupini bolesnika u odnosu na opću populaciju, osobito u bolesnika s glioblastomom[1].
Zbog mogućnosti da antitrombotski lijekovi precipitiraju krvarenje u tumor s posljedičnim neurološkim pogoršanjem pitanje tromboprofilakse je kod ovih bolesnika učestalo predmet interdisciplinarne rasprave.
Cilj rada: Analizirali smo bolesnike koji su elektivno operirani zbog tumorske patologije mozga u razdoblju od 18 mjeseci počevši od 1.1.2022. i koji su postoperativno liječeni i nadzirani u jedinici intenzivnog liječenja kroz razdoblje ne kraće od 48 sati. Svi bolesnici su imali zadovoljavajuću kontrolnu postoperativnu dijagnostiku (kompjuterizirana tomografija mozga s primjenom intravenskog kontrasta), tj. bez znakova hemoragije.
Započinjali smo s tromboprofilaksom niskomolekularnim heparinom (LMWH) enoksaparinom 36 – 48 sati nakon operativnog zahvata. Istu smo provodili preporučenom dozom za prevenciju venske tromboembolije od 4 000 IU subkutano jedanput na dan[2]. Terapijski odgovor pratili smo mjerenjem razine inhibicije faktora zgrušavanja Xa (antiXa) četiri sata nakon ordinirane prve doze LMWH[3]. Profilaktički raspon inhibicije iznosi 0.2 – 0.5 IU/ml[4].
Pratili smo hoće li primjenjena terapija biti neovisan čimbenik razvoja postoperativnih komplikacija u smislu krvarenja i posljedičnog neurološkog pogoršanja.
Iz istraživanja su isključeni pedijatrijski bolesnici, bolesnici s cerebrovaskularnom patologijom i bolesnici koji su operirani transnazalnim pristupom.
Metode: Retrospektivnom analizom identificirali smo 53 bolesnika koji zadovoljavaju navedene kriterije. Daljnjom analizom vrijednosti inhicije faktora Xa isti je, na preporučenu prvu dozu od 4000 IU enoksaparina, u referentnom rasponu bio kod 38 bolesnika.
Rezultat rada: Daljnji postoperativni tijek i oporavak kod navedene skupine bolesnika bio je bez komplikacija u smislu novonastale hemoragije mozga ili razvoja tromboembolijskih incidenata.
Zaključak: Prevencija tromboembolijskih incidenata u postoperativnom razdoblju je zbog niza faktora od izrazite važnosti u neurokirurških bolesnika. Terapiju enoksaparinom u dozi adekvatnoj za inhibiciju faktora Xa nastavljali smo do otpusta bolesnika, uz ostale mjere poput kompresijskih čarapa i ranog započinjanja fizikalne terapije prema stanju bolesnika i intrakranijskom nalazu.

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PROPHYLAXIS OF VENOUS THROMBOEMBOLISM IN ELECTIVELY OPERATED PATIENTS WITH BRAIN TUMOR PATHOLOGY AT THE UNIVERSITY CLINICAL HOSPITAL MOSTAR

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Introduction: Patients with primary or metastatic brain tumors have an increased risk of developing thromboembolic incidents due to latent hypercoagulability, the length of surgery, the use of corticosteroids or chemotherapy, and accompanied by leg paresis or plegia.
The frequency of developing venous thromboembolism, especially in the postoperative period, is significantly higher in this group of patients compared to the general population, especially in patients with glioblastoma[1].
There is concern that antithrombotic drugs can precipitate bleeding into the tumor with consequent neurological deterioration therefor the issue of thromboprophylaxis in these patients is often the subject of interdisciplinary discussion.
We analyzed patients who underwent elective surgery due to brain tumor pathology in a period of 18 months starting from 1st of January 2022. and who were post-operatively treated and monitored in the intensive care unit for a period of no less than 48 hours. All patients had satisfactory follow-up postoperative diagnostics (computerized tomography of the brain with the use of intravenous contrast), without signs of hemorrhage.
We started thromboprophylaxis with low molecular weight heparin (LMWH) enoxaparin 36-48 hours after surgery. We started with the recommended dose for the prevention of venous thromboembolism of 4 000 IU subcutaneously once a day[2]. We monitored the therapeutic response by measuring the level of inhibition of clotting factor Xa (antiXa) four hours after the prescribed first dose of LMWH[3]. The prophylactic range of inhibition is 0.2 – 0.5 IU/ml[4].
We monitored whether the initiated therapy would be an independent factor in the development of postoperative complications in terms of bleeding and consequent neurological deterioration.
Pediatric patients, patients with cerebrovascular pathology and patients who were operated via transnasal approach were excluded from the study.
Methods: Through retrospective analysis, we identified 53 patients who met the above criteria. Further analysis of factor Xa inhibition values, at the recommended first dose of 4000 IU of enoxaparin, was within the reference range in 38 patients.
Results: Further postoperative course and recovery in the mentioned group of patients was without complications in terms of new cerebral hemorrhage or the development of thromboembolic incidents.
Conclusion: Prevention of thromboembolic incidents in the postoperative period is of critical importance in neurosurgical patients. We continue LMWH in a dose adequate to inhibit factor Xa until the patient is discharged, along with other measures such as compression stockings and early initiation of physical therapy according to the patient's condition and intracranial findings.

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PULMONARY ARTERIAL HYPERTENSION, NEW INSIGHTS-NEW CHALLENGES

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Introduction
Pulmonary arterial hypertension (*PAH) is* a specific clinical group of severe and rare conditions and also a chronic and progressive disease leading to right heart failure and ultimately death if adequately untreated, with special hemodynamic and therapeutic challenges for anaesthesiologist.
Aim
To review a contemporary approach to the management of PAH, and compare outcomes of two different anesthesiological techniques for treating pulmonary arterial pressure (PAP) due to left-sided heart disease.
Methods
This retrospective, observational study, has included elective cardiac patients with elevated PAP treated at our Clinic for Cardiovascular. Patients were divided in two groups according to the technique used. Due to gender, left ventricle ejection fraction (EF) and age, two observed group were similar. First group was optimised and maintained during surgery with low tidal volume lung-protective ventilation, pulmonary vasodilators, reduction of right ventricle afterload, selected inotrop drugs, and fast track anesthesia protocol, where the second, control group has been treated by the standard protocol. The groups were compared by previously defined primary and secondary clinical postoperative outcomes.
Results
Out of 64 patients, 32 was male, 32 female (50 %). Mean age was 62±11 in the first group, and 65±12 years in second. EF value was 45±11% in the first, and 46±10% for the second group.
The analysis of the outcomes of the first group showed significantly lower postoperative PAP value (p=0.005), less postoperative drainage (p=0.002) and transfusion requirements, shorter mechanical ventilation duration but not significant (p=0.149), as well as lower major adverse events rates, and shorter intensive care unit stay 69.67±20.10 hours, while in second group was 106.68±51.77 hours, with statistical significance P<0,001. In hospital stay for the first group was 7.67±2.47 days, and in the second group was 11.16±10.24 days, without significance P<0,062.
Conclusion
Active model in anesthesiological treatment of PAH together with the fast track protocol, gives faster patients' overall recovery and improving the quality of life, mainly based on lowered PAP.

Keywords: *pulmonary arterial hypertension*, PAH, pulmonary arterial pressure, PAP, cardiac anesthesia

UTICAJ PERIOPERATIVNOG UNOSA TEČNOSTI NA POREMEĆAJ KOGNITIVNIH FUNKCIJA KOD OPERACIJE KARCINOMA DEBELOG CRIJEVA

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Uvod: Termin POKD (postoperativni kognitivni deficit) predstavlja poremećaj u različitim neuropsihološkim domenima koji su povezani sa kognicijom, a koji se mogu javiti poslije bolesti ili operacije bez obzira na starosnu dob i pol. Pretpostavili smo da veći perioperativni gubitak krvi podrazumjeva veću naduknadu tečnosti što dovodi do POKD kod pacijenata koji su podvrgnuti operaciji karcinoma debelog crijeva. Metode: U našem istraživanju učestvovalo je 60 pacijenata starijih od 50 godina koji su bili podvrgunuti otvorenoj operaciji karcinoma debelog crijeva. Svi pacijenti su ispunili tri psihometrijska testa (mini mental test - MMT, test informisanosti i Huperov test) dan prije operacije, jedan dan poslije operacije i sedmog dana poslije operacije. Rezultati: Kada je u pitanju povećan perioperativni unos tečnosti zbog velikog gubitka krvi, između pacijenata je uočena statistički značajna razlika u kognitivnom statusu koji je mjeren psihometrijskim testovima u odnosu na prosječne vrijednosti unijete tečnosti tokom operacije MMT (p=0,019), testa informisanosti (p=0,048), kao i Huperovog testa (p=0,016). Pacijenti koji su imali oštećenu kogniciju (2890±500) na MMT, ispodprosječne rezultate na testu informisanosti (3000±465), kao i visok rizik na osnovu Huperovog testa (3165±500) imali su značajno veće vrijednosti perioperativnog unosa tečnosti u odnosu na pacijente sa urednom kognicijom (2555±480), iznadprosječnim rezultatima testa informisanosti (2705±510), kao i pacijente sa niskim rizikom na osnovu Huperovog testa (2725±490). Zaključak: Prisutan je statistički značajan poremećaj kognitivnih funkcija kod pacijenta koji su tokom operacije dobili veću količinu tečnosti (više od 3000 ml) zbog velikog gubitka krvi.

Ključne riječi: kognitivni deficit, perioperativni unos tečnosti, psihometrijski testovi, kolorektalni karcinom

THE INFLUENCE OF PERIOPERATIVE FLUID INTAKE ON DISORDER OF COGNITIVE FUNCTIONS IN COLON CARCINOMARY SURGERY

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Introduction: The term POKD (postoperative cognitive deficit) represents a disorder in various neuropsychological domains related to cognition, which can occur after illness or surgery, regardless of age and gender. We hypothesized that greater perioperative blood loss implies greater fluid overload leading to POKD in patients undergoing colon cancer surgery. Methods: 60 patients over the age of 50 who underwent open colon cancer surgery participated in our study. All patients completed three psychometric tests (mini mental test - MMT, information test and Hooper's test) one day before surgery, one day after surgery and on the seventh day after surgery. Results: When it comes to increased perioperative fluid intake due to large blood loss, a statistically significant difference was observed between the patients in the cognitive status measured by psychometric tests in relation to the average values of fluid intake during the MMT operation (p=0.019), information test (p =0.048), as well as Hooper's test (p=0.016). Patients who had impaired cognition (2890±500) on the MMT, below-average results on the information test (3000±465), as well as high risk based on the Hooper test (3165±500) had significantly higher values of perioperative fluid intake compared to patients with normal cognition (2555±480), above-average information test results (2705±510), as well as low-risk patients based on the Hooper test (2725±490). Conclusion: There is a statistically significant disorder of cognitive functions in a patient who received a large amount of fluid (more than 3000 ml) during the operation due to a large blood loss.

Key words: cognitive deficit, perioperative fluid intake, psychometric tests, colorectal cancer

CASE REPORT: HYPERTHYROIDISM AS A CAUSE OF PERIPARTUM CARDIOMYOPATHY

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Peripartum cardiomyopathy (PPCM) is a form of sistolic heart failure affecting young womwn toward the end of pregnancy or in the months following delivery. The diagnostic criteria indicate that LVEF is less than 45% and there may or may not be ventricular dilatation (Heart Failure Association of the European Society of Cardiologiji, 2010). On the other hand, hyperthyroidism has profund cardiovascular effects; however it rarely causes heart failure in itherwise healthy patients. Untreated, it can lead to irreversible change in cardiac structure and function, including dilatated ventricular chambers, a decrease in wjection fraction and an increased risk of atrial fibrillation.

In this paper, we present the case of 36 years old pregnant women in 34th week of gestation, who was referred to our institution from a nearby hospital with a diagnosis of PPCM. Due to the established intrauterine death of the fetus, the patient underwent an emergency caesarean section under general anesthesia. She was than transferred to the intensive care unit without waking up. In the further course untreated hyperthyroidism was established, it was treated with antithyroid drugs along with the simultaneous treatment of heart failure and atrial fibrillation. She was extubated on the third day upon admission and on the seventh day, after her condition stabilized, she was moved to the ward.

Both PPCM and thyrotoxic cardiomyopathy represents a diagnosis of exclusion. Prompt identification is crucial as hyperthyroidism is a reversible couse of heart failure, and heart function can be recovered after achieving a euthyroid state using antithyroid drugs.

OPERATIVE HYSTEROSCOPIC INTRAVASCULAR ABSORPTION OR GYNECOLOGICAL TURP SYNDROME - CASE REPORT

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Introduction: Operative hysteroscopy intravascular absorption syndrome (OHIA) (< 1%) is a complication of hysteroscopy caused by intravascular absorption of irrigation fluid during hysteroscopic surgery. It can be manifested by hyponatremia, impaired coagulation, pulmonary edema. This case report concerns a case of severe OHIA syndrome in a young gynecological patient who required resuscitation in the intensive care unit.

Case presentation: A female smoker, 41 years old, body weight 65 kg, was admitted for endoscopic resection of submucosal uterine myoma under general anesthesia using a 7 mm tracheal tube. In the 90th minute of the procedure, expiratory CO2 dropped from 35 to 25 mmHg, and SpO2 from 100% to 85%. Visible edema of the neck, shoulders and upper extremities. As pulmonary edema is suspected, the volume of saline lavage is checked. 4000 ml of a total of 9000 ml of physiological solution was absorbed into the intravascular space. She developed metabolic acidosis (pH 7.1), hyponatremia (124 mEq/L), hypokalemia (K+ 3.3 mEq/L), hypocalcemia (Ca2+ 1.85 mEq/L), pulmonary edema. Resuscitation measures were started. Electrolyte disturbances are corrected. She fully recovered after 24 hours.

Discussion: OHIA syndrome is very similar to transurethral resection of the prostate (TURP) syndrome in which a variety of symptoms and signs develop as a result of excessive absorption of lavage fluid into the circulation. In hysteroscopy, this is due to intravasation of media through the uterine vasculature. If the intrauterine pressure exceeds the mean arterial pressure, the medium flows into the arterial tree, sometimes quite rapidly. The amount of fluid absorbed was further increased by the number of vascular channels opened during myomectomy and by the extended duration of the operation.
The consequences of this syndrome are hemodilution with acidosis, electrolyte disturbances, anemia, hypervolemia and loss of the 3rd space with systemic and pulmonary edema.

Conclusion: Hysteroscopy usually has a low complication rate, but absorption of irrigation fluid can result in fluid overload and electrolyte disturbances. Accurate fluid balancing and minimizing operative time can prevent these life-threatening complications.

Key words: OHIA syndrome, operative hysteroscopy, intravascular absorption

OPERATIVNA HISTEROSKOPIJSKA INTRAVASKULARNA APSORPCIJA ILI GINEKOLOŠKI TURP SINDROM - PRIKAZ SLUČAJA

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Uvod: Sindrom intravaskularne apsorpcije operativne histeroskopije (OHIA) (< 1%) je komplikacija histeroskopije koja je uzrokovana intravaskularnom apsorpcijom tekućine za ispiranje tijekom histeroskopske operacije. Može se manifestirati hiponatrijemijom, poremećenom koagulacijom, plućnim edemom. Ovaj prikaz slučaja se odnosi na slučaj teškog OHIA sindroma kod mlade ginekološke pacijentice koji je zahtijevao reanimaciju u jedinici intenzivne njege.

Prezentacija slučaja: Pacijentkinja pušač, stara 41 godinu, tjelesne težine 65 kg, primljena je na endoskopsku resekciju submukoznog mioma materice u opštoj anesteziji korištenjem trahealnog tubusa od 7mm. U 90. minuti procedure ekspiratorni CO2 pao je sa 35 na 25 mmHg, a SpO2 sa 100% na 85%. Vidljiv edem vrata, ramena i gornjih ekstremiteta. Kako se sumnja na plućni edem, provjerava se količina fiziološkog rastvora za ispiranje. Apsorbirano je 4000ml od ukupno 9000 mL fiziološke otopine u intravaskularni prostor. Razvila je metaboličku acidozu (pH 7.1), hiponatrijemiju (124mEq/L), hipokalemijom (K+ 3,3 mEq/L), hipokalcemijom (Ca2+ 1.85 mEq/L), edem pluća. Započeto je sa mjerama reanimacije. Poremećaji elektrolita su korigovani. Potpuno se oporavila nakon 24 sata.

Diskusija:OHIA sindrom je vrlo sličan sindromu transuretralne resekcije prostate (TURP) u kojem se razvija niz simptoma i znakova kao rezultat prekomjerne apsorpcije tekućine za ispiranje u cirkulaciju. Kod histeroskopije, ovo je posljedica intravazacije medija preko vaskulature maternice. Ako intrauterini pritisak premašuje srednji arterijski pritisak, medij teče u arterijsko stablo, ponekad prilično brzo. Količina apsorbirane tekućine dodatno je povećana brojem vaskularnih kanala otvorenih tokom miomektomije i produženim trajanjem operacije. Posljedice ovog sindroma su hemodilucija sa acidozom, poremećaji elektrolita, anemija, hipervolemija i gubitak 3. prostora sa sistemskim i plućnim edemom.

Zaključak: Histeroskopija obično ima nisku učestalost komplikacija, ali apsorpcija tekućine za ispiranje može rezultirati preopterećenjem tekućinom i poremećajima elektrolita. Precizno balansiranje tekućine i minimiziranje vremena operacije mogu spriječiti ove komplikacije opasne po život.

Ključne riječi: OHIA sindrom, operativna histeroskopija, intravaskularna apsorpcija

ANESTEZIOLOŠKI PRISTUP I TRETMAN PACIJENTA SA TUBEROZNOM SKLEROZOM – PRIKAZ SLUČAJA

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Uvod: Tuberozna skleroza je autosomalno dominantna bolest koja se ispoljava rastom hamartoma, tumora na mozgu, angiomiolipoma i cisti na bubrezima, srčanih rabdomioma ili pulmonarnih cisti. Zahvata 1 od 6000 osoba, a dijagnoza se obično postavlja u dječijoj dobi, a nerijetko i u odrasloj. Glavni problem vezan za anesteziološki pristup ovim pacijentima jesu kardiorespiratorne komplikacije kod odraslih i tromboembolije i opstrukcije probavnog trakta kod djece.
Prikaz slučaja: Tridesetogodišnja pacijentica je hospitalizovana na Klinici za ginekologiju i akušerstvo zbog arteficijalnog abortusa zbog nemogućnosti rasta ploda i maternice usljed abnormalne veličine lijevog bubrega i spontanog pneumotoraksa. Prije osam godina pacijentica je podvrgnuta desnoj nefrektomiji zbog angiolipomatoze kada je genetski dokazana tuberozna skleroza i prvi spontani pneumotoraks. Nekoliko dana nakon zahvata pacijentica se javila na Kliniku za urologiju sa intenzivnim abdominalnim bolovima te se ustanovi ruptura lijevog bubrega i indicira nefrektomija. Postoperativno pacijentica se prima u Odjeljenje intenzivne terapije intubirana, sedirana, hemodinamski stabilna, te RTG dijagnostika ukazuje na pneumotoraks na desnoj strani grudnog koša. Započinje se sa hemodijaliznim tretmanom te se ordiniraju intropi. Četvrti dan hospitalizacije urolog indicira revizorni operativni zahvat. Po završetku istog pacijentica spontano diše, svjesna je i kontaktibilna. Narednih dana se kontrolišu RTG snimci prsišta i laboratorijski nalazi, te se ustanovi da je osmog dana pneumotoraks u potpunoj regresiji. Jedanaesti dan hospitalizacije pacijentica svjesna, spontanog disanja, hemodinamski stabilna, desnog prsišta na aktivnoj sukciji se premješta na Kliniku za torakalnu hirurgiju na daljnje liječenje. Pacijentica je trenutno na Federalnoj listi čekanja za transplantaciju.
Zaključak: Tuberozna skleroza predstavlja kompleksnu genetsku bolest čija dijagnoza treba biti individualizirana svakom pacijentu s obzirom na širinu kliničke slike.
Ključne riječi: tuberozna skleroza, nefrektomija, pneumotoraks

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ANESTHESIOLOGICAL APPROACH AND TREATMENT OF PATIENTS WITH TUBEROUS SCLEROSIS – CASE REPORT

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Introduction:Tuberous sclerosis is a rare multisystem autosomal dominant genetic disease that causes non-cancerous tumors to grow in the brain and on other vital organs such as the kidneys, heart, liver, eyes, lungs and skin.The prevalence of the disease is estimated to be 1 in 100,000. It is usually diagnosed during infancy or childhood.The main anaesthetic concerns in the treatment of these patients are related to cardio- respiratory complications in adults and venous thromboembolic events and outflow tract obstruction in children.
Case report:A 30-year-old patient was hospitalized at the Gynecology and Obstetrics Clinic for an artificial abortion due to the impossibility of growth of the fetus and uterus due to the abnormal size of the left kidney. Eight years earlier, the patient underwent a right nephrectomy due to angiolipomatosis when tuberous sclerosis was actually genetically proven. A few days later, the patient came to the Urology with intense abdominal pain. Rupture of the left kidney was diagnosed and a nephrectomy was indicated. Postoperatively, the patient was admitted to the ICU, intubated, sedated, hemodynamically stable. At that time X-ray diagnostics indicated a pneumothorax on the right side of the chest. Hemodialysis treatment was initiated and inotrops were prescribed. On the fourth day of hospitalization, the urologist indicated revision surgery. In the following days, X-ray images of the chest and laboratory findings are checked, and it is established that on the eighth day the pneumothorax is in complete regression. On the eleventh day of hospitalization, the patient was conscious, hemodynamically stable, right chest on active suction, and it was transferred to the Clinic for Thoracic Surgery for further treatment. The patient is currently on the Federal transplant waiting list.
Conclusion:Tuberous sclerosis is a complex genetic disease whose diagnosis should be individualized for each patient because of the extensive clinical picture.
Key words:tuberous sclerosis, nephrectomy, pneumothorax

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HEMOPHILIA A AND OBESITY: CHALLENGE OR ROUTINE - CASE REPORT

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Introduction: Hemophilia is a recessive X-linked bleeding disorder caused by Factor VIII deficiency. Normal plasma FVIII levels range from 0.7 to 1.5 IU/ml or 70-150. People with hemophilia A have high APTT values but normal platelet count, bleeding and prothrombin time.
Case report: A young male patient, 26 years old, obese, was hospitalized at the Department of Hematology due to severe pain in the right side of the abdomen, accompanied by vomiting, weakness, malaise, without evidence of trauma. Since childhood, he has been treated for a severe form of Hemophilia A. A variety of examinations were performed including laboratory testing, ultrasound, X-ray and CT diagnostics which verified the hemorrhage of the right kidney. Third day of hospitalization operative treatment was inicated. The introduction of the patient to general anesthesia was performed according to the protocol for patients with high BMI. During the operative treatment Tranexamic acid and SSP were prescribed and the FVIII values were controlled. Postoperatively, the patient was transferred to OIT, and was hemodynamically stable, dyspneic with lower saturation. In further course, the patient has daily checks of laboratory findings and Factor VIII, as well as hematologist and urologist consultations. On two occasions, the patient underwent surgical treatment to remove compresses. Eighth day of his treatment in the ICU, the patient was stable, and transferred to the Urology Clinic for further observation.
Discussion: Hemophilia is a hereditary disease, characterized by congenital spontaneous production of antibodies against endogenous factor VIII. Hemophilia can be classified as severe, moderate and mild forms of the disease. Hemophilia treatment is focused on the use of FVIII concentrate according to the formula (TT/2) x (100% - FVIII value).
Conclusion: A multidisciplinary approach is a fundamental principle in the treatment of patients who, in addition to a severe form of hemophilia, have numerous other associated comorbidities.

Key words: Hemophilia A, obesity, multidisciplinary approach

HEMOFILIJA A I PRETILOST: IZAZOV ILI RUTINA - PRIKAZ SLUČAJA

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Introduction: Hemofilija je recesivni X vezani poremećaj krvarenja uzrokovana nedostatkom faktora VIII. Normalne razine FVIII u plazmi kreću se od 0,7 do 1,5 IU/ml ili 70-150% (1 IU/ml = 100% FVIII u 1 ml normalne plazme). Osobe sa hemofilijom A imaju visoke vrijednosti APTT-a, ali normalan broj trombocita, vrijeme krvarenja i protrombinsko vrijeme
Case report: Muški pacijent mlađe životne dobi, 26 godina izrazito gojazan hospitaliziran na Odjelu za hematologiju Klinike za interne bolesti zbog jakih bolova u području desne strane trbuha, praćeni povraćanjem, slabošću, malaksalošću koji su počeli dan prije hospitalizacije, bez navoda o traumi. Od djetinjstva se liječi od strane hematologa zbog teškog oblika Hemofilije A. Po prijemu uradi se paleta laboratorijskih nalaza, UZ I RTG dijagnostika abdomena, te CT dijagnostika abdomena kojom se verifikuje hemoragija desnog bubrega. Nakon kontrole urologa trećeg dana hospitalizacije indiciran operativni tretman (Op dijagnoza: Lumbotomia dex, Nephrectomia dex, Haemostasis, Drainage). Uvod pacijenta u opštu anesteziju urađen po protokolu za pacijente sa visokim BMI. Intraoperativno ordinirana Traneksamična kiselina i SSP. Tokom operativnog tretmana kontrolisane vrijednosti FVIII. Postoperativno premješten u OIT hemodinamski stabilan, dispnoičan, niže saturacije. U daljem toku pacijnet hemodinamski respiratorno stabilan uz svakodnevne kontrole laboratorijskih nalaza i Faktora VIII, te konsultacije hematologa i urologa. U dva navrata pacijent podrvagavan op tretmanu radi vađenja kompresa. Osmog dana boravka u OIT-u. pacijent hemodinamski i respiratorno stabilan te se premješta na Kliniku za urologiju.
Discussion: Hemofilija je nasljedno hemoragijsko oboljenje, karakterisana je kongenitalnom spontanom produkcijom antitijela protiv endogenenog faktora VIII. Hemofilija se može klasifikovati kao teški, umjereni i blagi oblik bolesti. Tretman hemofilije usmjerena na primjenu koncentrata FVIII prema formuli (TT/2) x (100% - vrijednost FVIII).
Conclusion: Multidisciplinarni pristup je temeljni princip u liječenju pacijenata koji pored teškog oblika hemofilije imaju i brojne druge pridružene komorbiditete.

Key words: Hemofilija A, pretilost, multidisciplinarni pristup

FLEKSIBILNA BRONHOSKOPIJA- METODA IZBORA ZA UKLANJANJE STRANOG TIJELA IZ DISAJNIH PUTEVA U PEDIJATRIJSKOJ POPULACIJI

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Uvod: Strano tijelo u disajnim putevima životno je ugrožavajuće stanje koje zahtijeva hitnu intervenciju.Vodeći je uzrok slučajne smrti djece i četvrti najčešći uzrok smrti u djece mlađe od pet godina. Najveća incidencija aspiracije je kod djece između prve i treće godine života (oko80%).Većina aspiriranih stranih tijela organskog je porijekla, a najzastupljeniji su kikiriki (36–55%) i ostali orašasti plodovi. Takva strana tijela dovode do jake upalne reakcije uz stvaranje granulacijskog tkiva što može brzo dovesti i do obilteracije zahvaćenog bronha. Rigidna bronhoskopija je dugo bila metoda izbora za uklanjanje stranog tijela, ali je sada zamijenjena fleksibilnom bronhoskopijom koja nudi smanjenu traumu i mogućnost pristupa distalnim bronhijalnim regijama. U slučajevima kada se strano tijelo donjih disajnih puteva ne uspije odstraniti, indicira se hirurška bronhotomija i segmentalna resekcija pluća. Uvođenje fleksibilnog bronhoskopa kroz laringealnu masku je optimalno rešenje jer olakšava izvođenje postupaka uz održavanje ventilacije.

Cilj: prikaz djeteta sa stranim tijelom u lijevom bronhu koje je uspješno tretirano fleksibilnim bronhoskopom u opštoj anesteziji kroz laringealnu masku

Prikaz pacijenta: prikazani pacijent je dijete, dobi od dvije godine i pet mjeseci koje je udahnulo kikiriki dan prije tretmana. Iz nadležnog Doma zdravlja hitno je upućeno na Kliniku za pedijatriju sa već razvijenim teškim komplikacijama (infiltracija pluća, atelektaza pluća, emfizem, pneumomedijastinum, pneumotoraks) uz prisutan intenzivan kašalj i febrilnost. Nakon dijagnostičke obrade i standardne preoperativne pripreme dijete je proslijeđeno na Kliniku za bolesti uha, grla i nosa radi nastavka tretmana. U operacionoj sali učini se fleksibilna bronhoskopija kroz laringealnu masku u opštoj anesteziji. Iz lijevog glavnog bronha odstrani se strano tijelo - kikiriki.
Zaključak: Fleksibilna bronhoskopija koja se izvodi putem laringealne maske u opštoj anesteziji za uklanjanje stranog tijela iz disajnih puteva je sigurna i efikasna tehnika sa visokim uspjehom i niskim stopama komplikacija.

Ključne riječi: strano tijelo bronha, teške komplikacije, bronhoskopija, opšta anestezija.

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FLEXIBLE BRONCHOSCOPY - THE METHOD OF CHOICE FOR FOREIGN BODY REMOVAL FROM THE RESPIRATORY TRACT IN THE PEDIATRIC POPULATION

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Introduction: A foreign body in the respiratory tract is a life-threatening condition that requires immediate intervention. It is the leading cause of accidental death in children and the fourth most common cause of death in children under the age of five. The highest incidence of aspiration is in children between the first and third year of life (about 80%). The majority of aspirated foreign bodies are of organic origin, and the most common are peanuts (36–55%) and other nuts. Such foreign bodies lead to a strong inflammatory reaction with the formation of granulation tissue, which can quickly lead to obliteration of the affected bronchus. Rigid bronchoscopy has long been the method of choice for foreign body removal, but has now been replaced by flexible bronchoscopy, which offers reduced trauma and access to distal bronchial regions. In cases where the foreign body of the lower airways cannot be removed, surgical bronchotomy and segmental lung resection are indicated. The introduction of a flexible bronchoscope through the laryngeal mask is the optimal solution because it facilitates the performance of procedures while maintaining ventilation.

The aim of this work is to present of a child with a foreign body in the left bronchus who was successfully treated with a flexible bronchoscope under general anesthesia through a laryngeal mask

Case report: the patient shown is a child, aged two years and five months, who inhaled peanuts the day before the treatment. From the competent Health Center, he was urgently referred to the Pediatric Clinic with already developed severe complications (lung infiltration, lung atelectasis, emphysema, pneumomediastinum, pneumothorax) with intense cough and fever. After diagnostic processing and standard preoperative preparation, the child was as forwarded to the Clinic for Ear, Throat and Nose Diseases for continued treatment. In the operating room, a flexible bronchoscopy is performed through a laryngeal mask under general anesthesia. A foreign body - a peanut - was removed from the left main bronchus.

Conclusion: Flexible bronchoscopy performed through a laryngeal mask under general anesthesia to remove a foreign body from the airways is a safe and efficient technique with high success rates and low complication rates.

Key words: bronchial foreign body, severe complications, bronchoscopy, general anesthesia

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ANESTHETIC APPROACH IN PERFORMING SURGICAL TREATMENT OF DIAPHRAGMATIC HERNIA IN A NEWBORN

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Introduction: Congenital diaphragmatic hernia is a rare congenital defect that affects 1 in 3600 registered newborns across Europe, most commonly on the left side. This malformation can be detected through prenatal ultrasound or MRI examinations. Depending on the severity of the condition, treatment can be challenging for neonatologists, pediatric surgeons, and anesthesiologists. The prognosis depends on the degree of pulmonary hypoplasia and is poor if CO2 levels cannot be reduced despite adequate ventilation. High pulmonary arterial pressure and hypoxemia can reopen the Ductus Botalli, leading to a right-to-left shunt with catastrophic consequences. Factors that could improve the situation include high-frequency ventilation, ECMO, inhaled NO, sildenafil, and choosing the optimal time for surgery. Surgical intervention
is performed when lung stabilization is achieved with FiO2 < 40%, lower doses, or no vasoactive drugs. Surgical treatment may not bring immediate improvement, but continued intensive care and adequate ventilation yield good results Case report: The patient was a (female) newborn, three days old. On the third day of life after establishing optimal hemodynamic stability , FiO2 < 45 %, SpO2 94 %, fr. heart rate 174/min, TA 62/37 (44) mmHg with inotropic support, an RR around 57/min, optimal ABS (Ph; 7.25), surgery was planned. Preoperative preparation is done (hemogram, mineralogram, ABS, brain and heart ultrasound). Antibiotic therapy was started, and inotropic therapy continued. The operation was performed on September 7, 2023. Mandatory mode of ventilation is applied, satisfactory etCO2 and SpO2 were achieved, and recommended fluid volumes were administered. The operation time was 180 minutes. A left thoracic drain has been placed. The intubated newborn was transferred to the intensive care unit, accompanied by a pediatric intensivist. Continued hospitalization required continuous monitoring of hemodynamics, lab findings, and ventilation until successful extubation on the 7th postoperative day. Postoperative complication chylothorax was therapeutically adequately treated.
Key words: diaphragmatic hernia, anesthesia, team

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ANESTEZIOLOŠKI PRISTUP PRI IZVOĐENJU OPERATIVNOG TRETMANA DIJAFRAGMALNE HERNIJE NOVOROĐENČETA

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Uvod: Kongenitalna dijafragmalna hernija je rijetka urođena mana koja pogađa 1 od 3600 registrovanih novorođenčadi širom Evrope i najčešće su lijevo. Ova malformacija se može otkriti prenatalnim ultrazvukom ili MRI ispitivanjem. Ovisno o težini bolesti , liječenje može biti izazovno i za neonatologe, pedijatrijske hirurge i anesteziologe. Prognoza zavisi od stepena plućne hipoplazije i loša je ako se uprkos adekvatnoj ventilaciji vrijednosti C02 ne uspiju smanjiti. Visok plućno- arterijski pritisak i hipoksemija ponovo otvaraju Ductus Botalli, nastaje desno-lijevi šant sa katastrofalnim posljedicama. Faktori koji bi poboljšali situaciju su visokofrekventna ventilacija ili ECMO, inhalatorni NO, sildenafil i izbor optimalnog vremena za op.zahvat. Operativni zahvat se izvodi pri stabilizaciji pluća , FiO2 < 40 %, manje doze ili bez vazoaktivnih lijekova. Hirurški tretman neće odmah donijeti poboljšanje, ali nastavak intenzivnog liječenja i adekvatne ventilacije daje dobre rezultate. Ovaj prikaz slučaja govori o tome.
Prikaz slučaja: Pacijent je bilo novorođenče (A. ž. n.), starosti tri dana. Trećeg dana života po uspostavljanju optimalne hemodinamske stabilnosti, FiO2 < 45 %, SpO2 94 %, fr. srca 174/min, TA 62/37 (44) mmHg uz inotropnu potporu,resp. fr. oko 57/min, optimalnog ABS-a (Ph; 7,25), planir je operativni zahvat. Urađena je preoperativna priprema (hemogram,mineralogram,ABS,UZ mozga i srca). Započeta antibiotska terapija, nastavljena inotropna.Operativni zahvat se obavi dana 07.09.23.g. Primjeni se mandatorni mod ventilacije, postignu zadovoljavajući etCO2 i SpO2, ordiniraju fluidi. Op. zahvat urednog toka traje 180 min. Novorođenče se intubirano,drenirano lijevo torakalno, u pratnji pedijatra intenziviste premješteno u Jedinicu intenzivne terapije. Nastavak hospitalizacije zahtijeva kontinuirano praćenje hemodinamike, lab.nalaza i ventilacije do uspješne ekstubacije sedmog postoperativnog dana. Postoperativna komplikacija hilotoraks uz adekvatnu th postepeno se saniran.
Ključne riječi: dijafragmalna hernija,anestezija,tim.

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AKUTNO SRČANO ZATAJENJE – KOMPLIKACIJA OPĆE ANESTEZIJE ILI COVID-A?

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Uvod: Nijedna operacija u općoj anesteziji se ne može nazvati rutinskom. Pojava postoperativnog srčanog zatajenja predviđa se u populaciji sa visokim rizikom u smislu prethodnih kardioloških oboljenja, hipertenzivnih i pacijenata sa dijabetesom. U zdravoj populaciji statistika navodi da se akutno srčano zatajenje dešava u 1% slučajeva. U najvećem broju slučajeva se dešava tokom nekardijalnih operacija. Dakle, anesteziolozima je od vitalnog značaja da budu vješti u menadžmentu akutnog srčanog zatajenja. Jedan od takvih je i slučaj pacijentice koja je, nakon elektivne tonzilektomije, postoperativno tretirana u Jedinici intenzivnog liječenja usljed razvoja navedene rijetke komplikacije.
Prikaz slučaja: Pacijentica dobi 21 godinu primljena je zbog planiranog operativnog zahvata tonzilektomije na Odjelu otorinolaringologije. Od ranije bez komorbiditeta. Ima alergiju na polen. Preoperativno svjesna, orijentisana, komunikativna. Vitalni parametri u referentnim vrijednostima, laboratorijski nalazi bez odstupanja. Uvede se u opću anesteziju kao ASA I. Intraoperativno bez anestezioloških komplikacija. Tokom buđenja dolazi do poremećaja ritma i pada saturacije što se uspješno istretira lijekovima, zatim se pacijentica proslijedi na odjel. Dva sata poslije buđenja dolazi do pogoršanja te se pozove anesteziolog. Pacijentica pri pregledu blijeda, tahidispnoična, zauzima ortopnoičan položaj. Auskultatorno obostrano prisutni vlažni hropci. Vitalni parametri: TA 86/50 mmHg, puls oko 150/min, saturacija 85-94%. Laboratorijski nalazi fiziološki osim: troponin 508,5 i D-dimer 3,36. Pacijentica se premjesti u Jedinicu intenzivnog liječenja gdje provede 12 dana. Uradi se kompletna dijagnostička obrada i postavi radna dijagnoza akutnog srčanog zatajenja. Dobije se adekvatan terapijski odgovor i po stabilizaciji stanja, pacijentica se premješta na Odjel interne medicine i hemodijalize radi nastavka liječenja.
Ključne riječi: tonzilektomija, tahikardija, operacija, komplikacija

ACUTE HEART FAILURE – A COMPLICATION OF GENERAL ANESTHESIA OR COVID-19?

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Introduction: No operation under general anesthesia can be called routine. Postoperative heart failure is predicted in a high-risk population with previous cardiac diseases and hypertensive and diabetic patients. Statistics indicate that acute heart failure occurs in 1% of cases in a healthy population. In most cases, it occurs during non-cardiac operations. Therefore, anesthesiologists need to be skilled in managing acute heart failure. One such case is the case of a patient who, after an elective tonsillectomy, was treated postoperatively in the Intensive Care Unit due to the development of the aforementioned rare complication.
Case report: A 21-year-old female patient was admitted for a planned tonsillectomy at the Department of Otorhinolaryngology. No prior comorbities. The only known allergy was to pollen. She was aware, oriented, and communicative preoperatively. Vital parameters were in reference values and laboratory findings without deviation. She was put under general anesthesia as ASA I. No anesthesia complications intraoperatively. A rhythm disturbance and desaturation occurred during awakening, which were successfully treated with medication, and then the patient was transferred to the ward. Her condition worsened two hours after waking up and the attending called an anesthesiologist. Upon examination, the patient was pale, tachydyspneic, and occupied an orthopneic position. On auscultation, moist rales were present on both sides. Vital parameters: TA 86/50 mmHg, pulse about 150/min, saturation 85-94%. Laboratory findings were physiological except for troponin 508.5 and D-dimer 3.36. The anesthesiologist transferred her to the Intensive Care Unit, where she spent 12 days. A complete diagnostic work-up was performed, and a working diagnosis of acute heart failure was made. An adequate therapeutic response was obtained, and after the stabilization of the condition, the patient was transferred to the Department of Internal Medicine and Hemodialysis for the continuation of treatment.
Keywords: tonsillectomy, tachycardia, operation, complication

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AKUTNI AKALKULOZNI HOLECISTITIS KOD DJECE – PRIKAZ SLUČAJA

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UVOD: Akutni akalkulozni holescistitis (AAC) je rijetko stanje kod djece, koje uzrokuje upalu žučne kese, bez prisustva žučnih kamenaca. Predstavljamo slučaj djeteta sa ACC-om, sa difuznim makularnim osipom, nepoznatog porijekla.
PRIKAZ SLUČAJA: Djevojčica u dobi od 6 godina, bez ranijih oboljenja, sa nespecifičnim bolom u abdomenu, povišenom tjelesnom temperaturom, malaksalošću i simptomima gornjih dišnih puteva. Klinički i radiološki pregledi pokažu prisustvo hepatosplenomegalije i dijagnostičke znakove akalkuloznog holecistitisa. Laboratorijski nalazi pokažu leukocitozu, povišene vrijednosti jetrenih enzima i konjugirane frakcije bilirubina, kao i povišene vrijednosti C reaktivnog proteina, feritina i povišen NT-proBNP. Drugog dana hospitalizacije prezentuje se difuzni makularni osip sa svrbežom. Tretman ovog kompleksnog slučaja uključivao je multidisciplinarni pristup od strane gastroenterologa, infektologa, tima intenzivne njege, imunologa, kardiologa, radiologa i dječijeg hirurga. Odlučili smo se za konzervativno i simptomatsko liječenje uz praćenje multististemske uključenosti. Tokom liječenja terapija je adaptirana i realizirane su kontrolne radiološke pretrage. Nakon što je postala afebrilna i bez bola, otpuštena je na kućno liječenje, sa preporukama za simptomatsku terapiju. Nakon dvije sedmice realiziran je kontrolni pregled, laboratorijski nalazi pokažu uredne vrijednosti upalnih parametara i bilirubina, te diskretno povišene vrijednosti jetrenih enzima. Ultrazvučni nalaz pokaže uredan nalaz jetre i žučne kese, te slezenu veličine na gornjoj granici referentnih vrijednosti.
ZAKLJUČAK: Ovaj prikaz slučaja naglašava važnost razmatranja AAC-a kao potencijalne dijagnoze kod pacijenata sa akutnom abdominalnom boli. Pravovremeno prepoznavanje i intervencija su od ključne važnosti za poboljšanje ishoda kod pacijenata sa AAC-om. Također, naglašavamo značaj multidisciplinarnog i zajedničkog pristupa tretmanu za uspješno liječenje ovog rijetkog ali ozbiljnog stanja.
KLJUČNE RIJEČI: akutni akalkulozni holecistitis, bolest zučne kese, dijagnostička evaluacija, tretman, ishod.

ACUTE ACALCULOUS CHOLECYSTITIS IN CHILDREN - CASE REPORT

Mišanović Verica[1], Rahmanović Samra [1], Anić Duško[1], Begić Nedim[1], Mulać Ahmed[1], Palo Sunita[2].
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INTRODUCTION: Acute acalculous cholecystitis (AAC) is a rare condition in children, known to cause inflammation of the gallbladder, without the presence of gallstones. We present a case of child with AAC with a diffuse macular rash of unknown origin
CASE PRESENTATION: A 6-year-old female patient with no past medical history, presented with non-specific abdominal pain, high body temperature, malaise and upper airway symptoms. Clinical and radiological examinations unvieled the presence of hepatosplenomegaly and diagnostic signs consistent with acalculous cholecystitis. Laboratory tests revealed leukocytosis, elevated liver enzymes, elevated conjugated fraction of bilirubin, elevated C-reactive protein, ferritin and NT-proBNP. On the second day of hospitalisation diffuse macular rash was noted, iching was present. The managment of this complex case involved a multidisciplinary approach, including gastroenterologist, infectologist, intensive care team, imunologist, cardiologist, radiologist and pediatric surgeon. The decision was made to opt for conservative treatment and symptom management, while also observing indications of multisystem involment. During the treatment therapy was often modifed, and folow-up radiological examination were made. After becoming afebrile and pain free the patient was discharged home with recommendations for symptomatic therapy. At the two-week follow-up appointment, normal values of inflammatory markers and bilirubin were noted, with slightly elevated liver enzymes. The ultrasound examination showed normal findings of the liver and gallbladder, with the spleen at the upper limit of the reference range in terms of size.
CONCLUSION: This case report underscores the importance of considering AAC as a potential diagnosis in patients with acute abdominal pain. Timely recognition and intervention are crucial to improve outcomes in AAC cases. Additionally, it highlights the significance of a collaborative approach among healthcare providers for successful management of this rare but serious condition.

KEYWORDS: acute acalculous cholecystitis, gallbladder disease, diagnostic evaluation, management, outcomes.

ANESTEZIOLOŠKI PRISTUP OPERATIVNOM TREMANU RASCJEPA USNE I NEPCA NA KCUS

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Sažetak: Anestezija za operativni zahvat rascjepa usne i nepca kod djece je veliki izazov za anesteziologe. Perioperativnim komplikacijama koje su vezane za kraniofacijalne malformacije doprinose često udružene anomalije i mlada dob. Anestezija se smatra visoko rizičnom zbog otežane ventilacije, otežane intubacije i specifičnosti intraoperativnog monitoringa. Retrospektivnom analizom anesteziioloških tehnika kod operativnih zahvata pacijenata pedijatrijskog uzrasta operisanih zbog rascjepa usne i nepca u periodu od 2019. do 2023. godine u KCUS želimo prezentovati metode rada u našoj ustanovi. Rascjep usne i rascjep nepca spadaju u kraniofcijane malformacije sa incidencom 1:800. Preoperativna priprema ustvari počinje odmah po rođenju djeteta kada maxilofacijalni hirurg postavi dijagnozu i indicira operativni zahvat. Operativni zahvati se provode unutar prve godine života. U sklopu preoperativne evaluacije vrlo je važno uočiti pridružene anomalije od kliničkog značaja za anesteziju. Pažljivom preoperativnom pripremom ,u smislu ranog otkrivanja pridruženih anomalija, saniranjem respiratornih infekcija, anemije te postizanjem adekvatnog nutritivnog statusa pacijenta pokušavamo smanjiti mogućnost nepredviđenih komplikacija. Anesteziološka tehnika ovisi od stanja pacijenta i procjene težine uspostavljanja disajnog puta. Intraoperativni monitoring je kontinuiran i u skladu sa preporukama WFSA (World Federation of Societies of Anaesthesiologists). Neophodna je dobra komunikacija između operaterativnog i anesteziološkog tima u toku operacije sa ciljem da se ne kompromituje disajni put. U postoperativnom periodu se može razviti opstrukcija disajnih puteva usljed krvarenja te desaturacija sa poremećajem hemodinamike. Planirana multimodalna postoperativna analgezija pridonosi boljem opravku pacijenta.

Ključne riječi: Anestezija, rascjep usne, rascjep nepca, disajni put.

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PEDIATRIC NEUROBLASTOMA: THE ROLE OF THE ANESTHESIOLOGY IN THE DIAGNOSIS AND SURGICAL TREATMENT OF THREE-YEAR-OLD CHILDREN

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Neuroblastoma is a malignant tumor originating from the neural crest that can arise anywhere along the sympathetic ganglia. The average age of diagnosis is 2 years, with almost 35% of cases occurring in children younger than 1 year, and the rest under 10 years.75% percent of neuroblastomas originate in the abdomen or pelvis, with half occurring in the adrenal medulla, 20% originating in the posterior mediastinum and **5% within the neck**. The overall incidence of neuroblastoma in the unscreened population is 1 case per 10,000 people. Neuroblastoma accounts for 8-10% of all solid tumors in children and is the most common malignant extracranial tumor in childhood. Primary neuroblastoma of the head and neck is rare. The clinical picture and physical findings are related to the age of the child, the stage and location of the primary tumor and its accompanying biological behavior. Cytogenetic composition of neuroblastoma is one of the most important prognostic factors. In 25% of cases, patients have a limited mass that can be cured by surgical therapy, while in 60% of cases there is a disseminated disease that affects the lymph nodes, liver, bones and bonem arrow. It is responsible for 15% of all cancer-related deaths in the pediatric population.
Neuroblastoma can have a relatively benign course, even when it has metastases. In our case presentation, it is about a three-year-old child (V.T.) who based on diagnostic tests (US of the neck, MRI of the neck, needle biopsy) was diagnosed with Dr. Neuroblastoma reg.colli.
Tu mass is verified on the left supraclavicular, propagating towards the central and posterior mediastinum, moving the trachea and esophagus to the right and compressing the large blood vessels of the neck to the left and laterally. The cycles of chemotherapy successfully reduce Tu and the surgeon indicates an operation. Introduction and course of anesthesia passed properly the child is hemodynamically stable.After the completion of op. the child is intubated accompanied by an anesthesiologist and transferred to the Intensive Care Unit of the Pediatric Clinic. On the third postoperative day he is successfully extubated and inspiratory stridor is controlled with corticosteroid therapy. On the fifth postoperative day the child is transferred to the ward with minimal oxygen support and bronchodilator therapy. Horner's syndrome is verified as a postoperative complication. After the consultation and diagnostic examinations the child is discharged home and a follow-up MRI of the neck is planned.

Key words: neck neuroblastoma, child, team.

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PEDIJATRIJSKI NEUROBLASTOM: ULOGA ANESTEZIOLOGA U DIJAGNOSTICI I OPERATIVNOM LIJEČENJU DJETETA STAROSTI TRI GODINE

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Neuroblastom je maligni tumor porijekla iz neuralnog grebena koji može nastati bilo gdje duž simpatičkih ganglija .Srednja dob dijagnoze je 2 godine pri čemu se skoro 35% slučajeva javlja mlađoj djeci od 1 godine, a ostatak ispod 10 godina. 75% posto neuroblastoma potiče iz abdomena ili karlice, a polovina se javlja u meduli nadbubrežne žlijezde, 20% potiče iz stražnjeg medijastinuma, **a 5% unutar vrata**. Ukupna incidencija neuroblastoma u populaciji koja nije pregledana je 1 slučaj na 10.000 osoba. Neuroblastom čini 8-10% svih solidnih tumora kod djece i najčešći je maligni ekstrakranijalni tumor u djetinjstvu. Primarni neuroblastom glave i vrata je rijedak. Klinička slika i fizikalni nalaz vezani su za dob djeteta, stadij i lokaciju primarnog tumora, te njegovo prateće biološko ponašanje. Citogenetski sastav neuroblastoma je jedan od najvažnijih prognostičkih faktora. U 25 % slučajeva pacijenti imaju ograničenu masu koja se može izliječiti hirurškom terapijom, dok u 60% slučajeva prisutna je diseminira bolest koja zahvata limfne čvorove, jetru, kosti i koštanu srž. Odgovoran je za 15% svih smrtnih slučajeva povezanih s karcinomom u pedijatrijskoj populaciji. Neuroblastom može imati relativno benigni tok, čak i kada ima metastaze. U našem prikazu slučaja radi se o djetetu starosti tri godine (V.T.),kojem se na osnovu dijagnostičkih pretraga (UZ vrata, MRI vrata, iglena biopsija) postavi Dg.Neuroblastom reg.colli.Tu masa se verificira lijevo supraklavikularno,propagirajući prema središnjem i stražnjem medijastinumu, pomjerajući traheju i jednjak u desno, komprimirajući velike krvne sudove vrata lijevo i lateralno.Sprovedeni ciklusi kemoterapije uspješno reduciraju Tu , te se od strane hirurga indicira operativni zahvat.Uvod i tok anestezije proteknu uredno,dijete hemodinamski stabilno. Nakon završenog op. zahvata dijete se intubirano u pratnji anesteziologa proslijedi u Intenzivnu th Pedijatrijske klinike.Trećeg postoperativnog dana se uspješno ekstubira, a inspiratorni stridor se kupira kortikosteroidnom terapijom.Petog postoperativnog dana dijete se uz minimalnu kiseoničku potporu i bronhodilatatornu terapiju premješta na odjeljenje.Verifikuje se Hornerov sindrom kao postoperativna komplikacije.Nakon završenih konsultativno-dijagnostičkih pretraga dijete se otpusti kući i planira kontrolni MRI vrata.

Ključne riječi: neuroblastom vrata, dijete,tim.

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ASPIRACIJA STRANOG TIJELA KAO UZROK PNEUMOTORAKSA KOD DJETETA-PRIKAZ SLUČAJA

Lejla Dedic Simendic, Amela Delibegovic; University Clinical Centar Tuzla

Aspiracija stranog tijela najčešće se javlja kod predškolske djece, a naročito kod djece mlađe od 3 godine. Strano tijelo u dišnim putevima kod djece čest je uzrok morbiditeta i mortaliteta. Pneumotorax je iznimno rijetka komplikacija aspiracije stranog tijela kod djece. Rizik Dječak 20 mjeseci TM 13kg je dovežen u prijemnu ambulantu Klinike za dječije bolesti. Na prijemu dječak je svjesta, uznemiren, afebrilan, dispnoičan, sa subkutanim enfizemom donjeg dijela lica, vrata i gornjeg dijela grudnog koša. Auskultatorno na plućima desno oslabljen disajni šum. RR 35/min; SpO2 98%, tahikardičan 168/min. RTG p/c pokaže pneumotorax desno. Odmah se načini drenaža desnog prsišta, te se postavi na aktivnu sukciju.Dječak se primi na odjel intenzivne terapije Klinike za dječije bolesti.Sutradan se uradi CT toraksa koji pokaže i dalje postojanje pneumotoraksa desno, sa pomakom medijastinalnih struktura lijevo. Desno u glavnom bronhu sa propagacijom u lobarni bronh vidi se hiperdenzna area 20x10mm koja opstruira lumen bronha. Nakon CT dijagnostike uradi se fiberoptička bronhoskopija, iz desnog bronha se odstrani strano tijelo-komadic spužve. Nakon toga dječak se brzo oporavlja, postepeno se isključi aktivna sukcija, potom se torakalni dren odstrani. Sedam dana nakon vađenja stranog tijela dječak se otpusta iz bolnice.Ako se ne prepozna odmah, aspiracija stranog tijela dovodi do komplikacija kao što su pneumonia, atalektaza ili pneumotorax.

ASPIRATION OF A FOREIGN BODY AS A CAUSE OF PNEUMOTHORAX IN A CHILD - CASE REPORT

Lejla Dedic Simendic, Amela Delibegovic; University Clinical Centar Tuzla

Aspiration of a foreign body most often occurs in preschool children, especially in children younger than 3 years old. A foreign body in the respiratory tract in children is a common cause of morbidity and mortality. Pneumothorax is an extremely rare complication of foreign body aspiration in children.

A 20-month-old boy with,TM 13 kg was brought to the Clinic for Children's Diseases. On admission, the boy is conscious, agitated, afebrile, dyspnoic, with subcutaneous emphysema of the lower face, neck and upper chest. On auscultatory examination of the lungs, the respiratory tract is weakened on the right. RR 35/min; SpO2 98%, tachycardic 168/min. Chest X-ray showed pneumothorax on the right. Drainage of the right chest was immediately performed. The boy was admitted to the intensive care unit of the Clinic for Children's Diseases.

The next day, a CT scan of the chest was performed, which showed the continued existence of a pneumothorax on the right, with a shift of the mediastinal structures to the left. On the right, in the main bronchus with propagation into the lobar bronchus, a hyperdense area of 20x10mm can be seen, obstructing the lumen of the bronchus. After the CT diagnosis, a fiberoptic bronchoscopy is performed, a foreign body-piece of sponge is removed from the right bronchus. After that, the boy recovers quickly, active suction is gradually turned off, and then the thoracic drain is removed. Seven days after the removal of the foreign body, the boy was discharged from the hospital.

If not recognized immediately,aspirationof foreign body leads to complications such as pneumonia, atelectasis or pneumothorax.

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ZNAČAJ RANE ANTIBIOTSKE TERAPIJE U TRETMANU TEŠKOG NEKROTIZIRAJUĆEG AKUTNOG PANKREATITISA

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Akutni pankreatitis je česta bolest koja se prezentira širokim spektrom kliničkih manifestacija, od umjerenog samoograničavajućeg patološkog procesa, do razvoja teških formi koje se dodatno komplikuju razvojem lokalnih i sistemskih komplikacija, a koje nose značajan rizik od mortaliteta. Skoring sistemi poput Ransom skora i APACHE II skora su dizajnirani sa ciljem predikcije razvoja težih formi akutnog pankreatitisa sa prihvatljivom senzitivnošću i specifičnošću. Kao prediktor razvoja težih formi akutnog pankreatitisa, APACHE II skor pokazuje senzitivnost od 68% i specifičnost od 67% na presječnim vrijednostima ≥8, dok sa druge strane Ransom skor pokazuje senzitivnost od 87% i specifičnost od 71% na prjesečnim vrijednostima ≥3. Oba scoring sistema zahtjevaju praćenje većeg broja kliničkih parametara što značajno otežava njihovu svakodnevnu primjenu. Kontrastna kompjuterizovana tomografija se smatra najverodostojnijom metodom u procjeni težine kliničke slike kod akutnog pankreatitisa. Progresija bolesti ka teškim formama akutnog pankreatitisa najčešće je povezana sa prekomjernom aktivacijom inflamatorne kaskade koja vodi razvoju sindroma sistemskog inflamatornog odgovora (SIRS). Stoga su reaktanti akutne faze upale, citokini, homokini i drugi marker inflamatornog odgovora evaluirani kao prediktori razvitka teških formi akutnog pankreatitisa, ali i kao marker razvoja multiorganske insuficijencije. C reaktivni protein (CRP) je najčešće korišteni biomarker statusa inflamatornog odgovora. S obzirom da mu vrijednosti počinju značajno rasti tek 48 sati nakon početka bolesti nije najoptmalniji biomarker za ranu dijagnozu teških slučajeva akutnog pankreatitisa. Senzitivnost, specifičnost i prediktivna vrijednost CRP-a je znatno manja u odnosu na prokalcitonin tokom 24 sata od prijema u jedinicu intenzivnog liječenja pacijenata sa akutnim pankreatitisom. Stoga se prokalcitonin (PCT) koristi kao rani prediktor razvoja lokalnih komplikacija i multiorganske insuficijencije u akutnom pankreatitisu. NivoiPCT su u prvih 12 do 24h od prijema signifikantno veći kod pacijenta sa teškim formama akutnog pankreatitisa, koji zatim razvijaju respiratornu insuficijenciju sa ili bez renalnog oštećenja, u odnosu na pacijente koji koji se oporavljaju bez popuštanja pojedinih organa. Primjćeno je da su pacijnti kod kojih se klinički tok komplikovao razvojem inficirane pankreatične nekroze imali konstantno povećanje dnevnih serumskih nivoa PCT-a. Analiza bakterijskih i kultura gljivica zahtjeva najčešće minimalni 48-časovni period inkubacije, a na tačnost rezultata značajan uticaj mogu imati istovremena profilaktička upotreba anitibiotika širokog spektra i antigljivičnih preparata, dok sa druge strane serumski nivoi PCT ostaju povišeni kod pacijenata sa inficiranom pankreasnom nekrozom. Tako je bilo i u našem sluačju gdje se rano uključivanje antibiotika šriokog spektra pokazalo opravdanim te modeliralo daljnji tok bolesti. Pacijent N.M. rođen 1975.godine primljen je na našu kliniku kao hitan premještaj sa Klnike za gastroenterohepatologiju, gdje je bio hospitliziran dva dana, zbog težine opšteg stanja, potrebe za kontinuiranim monitoringom vitalnih prametara i intenzivnim reanimacionim tretmanom. Tegobe počele noć pred prijem u vidu bolova u stomaku. Prethodno ima tri epizode akutnog pankreatitisa, par puta imao flegmonu lijevog stopala, u januaru 2023.godine ima upalu pluća. Na prijemu visoke vrijednosti upalnih parametara, visoke vrijednosti azotnih materija i GUK-a uz oliguriju. Odmah po prijemu se započne promptni reanimacioni tretman.

Ključne riječi: akutni pancreatitis; antibiotska terapija; prokalcitonin

PERIOPERATIVE MENAGEMENT OF SPINAL LESIONS CASE RIPORT

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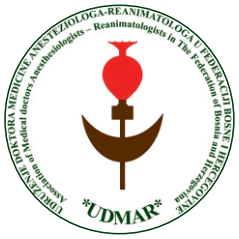
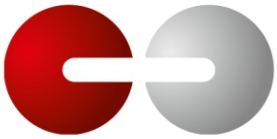
A 54-year-old woman was admitted to our Clinic for planned cervical spine surgery, ACDF. An MRI of the cervical spine shows a herniated disc from C3-C6, with a finding of C3-C4, with spondylolisthesis, C4-C5 disc herniation with signs of mylopathy. She underwent C3-C5 ACDF surgery. During the last part of the surgery, the anesthesiologist noticed a drop of the blood pressure to 60 / 30 mmHg, and he started to maintain the blood pressure until the end of surgery. After finishing of the surgery, the patients had a prolonged waking up from the surgery about 30 minutes, then she woke up but could not move her hand and lags, but she could speak and move with her head. The patients were admitted to the ICU, the blood pressure was love and then dobutamine and noradrenalin were continuously given to the patient, the systolic blood pressure was maintained above 100 mmHg. About 2 hours after the surgery the patient had no improvement in her neurological functions. A CT of the cervical spine was performed.After the CT scan, the patients were sent to the operative room, for revision surgery, because of the possible hematoma or hemostatic material compression. An anterior ACDF revision was performed. Postoperative the patient had also prolonged waking up period, hoever she could spontanouesly breath, and there was a slight improvment of the movment of the legs. During this period the patient had froops of the blood pressure. Methilprednisolon at the dosage 30 mg/kg bolus and 5.4 mg/kg/hr for 23 hours. Next day the patient was again quadraplegic. Because of the hemodynamical instability and third operation in 24 hours, the patient was sedated for next 24 hours. After that the patient was woken up. The patient wakes up, conscious, communicative, quadriparesis present, with paraplegia, with stable vital parameters. After one month the patient was transferred to the Department of physical and rehabilitation medicine.

GLAVNI ORGANIZATOR



PLATINASTI SPONZOR



DIAMEDIC
SARAJEVO

SREBRNI SPONZOR

BRONZANI SPONZOR