

## THE ROLE OF SCALP BLOCK IN ABOLISHING PAIN & ENHANCED RECOVERY DURING ANAESTHETIC MANAGEMENT IN EMERGENT SURGICAL REPAIR OF CEREBRAL ANEURISMS.

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**Case report:** We present two cases of a 73 and 62 -year-old female patients brought to the emergency department with sudden onset of severe headache, vomiting, and altered sensorium. Computed tomography (CT) scan revealed findings consistent with SAH accompanied by ICH. The first patient was admitted as Hant & Hass 1 while the second one was Hant & Hass 2. Regarding the urgency, both patients needed a surgical repair within the first 24 hours of symptom onset. Anaesthesia was induced with Midazolam 0.03mg/kg, Propofol 1mg/kg, Fentanyl 1 mcg/kg, Rocuronium 0.5mg/kg, while anaesthesia was maintained with sevoflurane with MAC of at least 0.7. Additionally, a scalp block was performed using Bupivacaine 0.5% (10 ml) and Lidocaine (10 ml) in both patients. First patient received Remifentanyl initiated at a dose of 0.01 mcg/kg/min, which was discontinued shortly after induction due to hemodynamic stability and no need of opiates. Considering the urgency of the surgery and the desire to minimize systemic effects of anaesthesia, a Scalp block was performed aiming to provide effective analgesia while minimizing the need for systemic opioids during the procedure. Throughout the surgical procedure, both patients maintained hemodynamic stability without need of additional opioids or muscle relaxants. Hemodynamic parameters were closely monitored and managed with colloid fluids and blood transfusion as necessary. Intraoperative course was uneventful, without significant fluctuations in blood pressure or heart rate. Following completion of the surgical procedure, both patients were successfully awakened and extubated in the operating room without any neurological deficits. At 1, 6, 12, and 24 hours after surgery, the patients were pain free with numerical pain score was 0/10 at all points.

**Conclusion:** Use of the scalp block in emergency surgical repair of aneurisms provides sufficient analgesia for the skin to brain & brain to skin part of the surgical procedure, which significantly reduces the administration of opioids and muscle relaxants, while awakening and extubation are facilitated.

**Keywords:** SAH, scalp block, anaesthetic management

## ANESTHETIC APPROACH FOR REMOVAL OF BRAIN TUMOR WITH COEXISTENT CEREBRAL ANEURYSM

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**Introduction** Primary brain tumors associated with intracranial aneurysm are rare. A combination of glioblastoma multiforme (GBM) with cerebral aneurysm is even more rare.

**Objectives** Our aim is to point out the specifics in anesthesia management in this case where two coexisting neurosurgical pathologies are present.

**Material and methods** Case of a 71-year-old male, admitted of removal of a brain tumor, most likely glioblastoma multiforme. Imaging scans – CT and MRI confirmed a mass with the size of 31x27 mm, located in the occipital region of the brain, with mild brain oedema. Along with the brain mass, the patient had an unruptured aneurysm of the anterior communicating artery. The patient was also previously operated on for an abdominal aortic aneurysm. On admission, he was somnolent, confused and dysphasic.

**Results** Prior to the operation, a central venous line was placed in the right femoral vein and the patient was premedicated

with benzodiazepines. The surgical intervention was done under general anesthesia with propofol, remifentanyl, sevoflurane and rocuronium. Intraoperatively, to reduce the brain oedema, Mannitol 20% and dexamethasone were administered. During the surgery, the patient was hemodynamically stable and had no great blood loss. Apart from receiving crystalloids, the patient was substituted with 3 units of fresh frozen plasma. In advance, the patient also was administered tranexamic acid.

**Conclusion** The main goal of the anesthetic management in this case was to prevent variations in the arterial blood pressure and cerebral perfusion pressure, ultimately decreasing the possibility of rupturing the aneurysm. The choice of anesthetic agents to achieve this effect is essential and must be taken into account prior to the surgical procedure.

**Keywords** brain tumor; cerebral aneurysm; anesthetics.

## SESSION 6 - CARDIOVASCULAR ANESTHESIA

### TREATMENT AND PREPARATION FOR SURGERY OF A PATIENT IN CARDIOGENIC SHOCK WITH ARTERIOVENOUS ECMO

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**Case report:** A fifty-six-year-old patient with persistent severe chest pain independent of physical activity, who underwent coronary angiography with the finding of three-vessel coronary artery disease, with acute occlusion of the right coronary artery and stenting of the same. After the intervention, the patient was hypotensive with appearance of a left sided hemiplegia. Because of hemodynamic instability catecholamine support was introduced and the patient was referred to Clinical Hospital Acibadem Sistina Skopje - Republic of North Macedonia. The patient was admitted with severe cardiogenic shock which despite inotropic and vasopressor support, was still hemodynamically unstable, which is why an intra-aortic balloon pump was placed. Echocardiographically, a post-infarction ventricular septal defect with a left-right shunt, as well as an aneurysm of the apex of the left ventricle were diagnosed. Efforts to improve cardiac function using inotropes, vasopressors, as well as an intra-aortic balloon pump failed to improve cardiac function, so the use of arteriovenous ECMO was considered. ECMO was placed in an arteriovenous configuration and the patient was treated for eight days, which allowed "physiological rest" of the heart, adequate oxygenation of the tissues, as well as hemodynamic stability in conditions of cardiogenic shock without the need for inotropic and vasopressor support. After the decline of the degradation products, as well as adequate antibiotic treatment, the patient was treated surgically with three aortocoronary bypasses, closure of a post-infarction ventricular septal defect and left-endoventricular circulo-plasty were performed. On the third postoperative day, the ECMO was removed, the patient was hemodynamically stable, the catecholamine support was gradually reduced and turned off.

**Conclusion:** We share important clinical information related to our experience, especially regarding the effective management of a patient with acute myocardial infarction and cardiogenic shock, using ECMO. We emphasize that ECMO should never be considered a target therapy in acute heart failure, but should be used as a bridge to operative treatment.

**Keywords:** ECMO, Cardiogenic Shock, Myocardial Infarction

### FAST TRACH EXTUBATION REDUCES COMPLICATIONS FOLLOWING CARDIAC SURGERY

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**Background:** Fast-track following cardiac surgery is a complex intervention involving several components of care