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NEUROLOGICAL MONITORING IN CHILDREN WITH CONGENITAL HEART DISEASE– CEREBRAL OXIMETRY: SHOULD IT BECOME STANDARD?

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Congenital heart disease (CHD) is the most common birth defect. Thanks to tremendous progress by multiple specialties, an increasing number of affected children, who not long ago were considered "inoperable", are now living into adulthood. In fact, there are now more adults than children living with CHD. This turning point has shifted the focus from "primarily survival" to "improving quality of life" for these patients. For this matter, a major area of concern is neurological morbidity that affects 30-50% of children with CHD and has been attributed to multiple causes. While vital organs are routinely monitored in the pediatric cardiac surgical setting, this typically does not hold true for the brain, where monitoring is still indirect. Yet, reliable and accurate neurological monitoring is essential to reduce the incidence of neurological complications and subsequent potential long-term cognitive dysfunction. In this discussion, we will review various modalities of neuro-monitoring for children with CHD undergoing surgery with a focus on near-infrared spectroscopy (NIRS). In addition, our own data will be presented, investigating a next generation NIRS device (FORE-SIGHT Elite Tissue oximeter) in combination with simultaneous vital sign recording in pediatric patients undergoing cardiac catheterization. Our data suggest that NIRS monitoring appears superior to standard vital sign monitoring when assessing "brain well-being", thereby supporting routine use of NIRS as an independent monitor to achieve safer peri-OP management in this vulnerable and extremely heterogeneous patient population. Clearly, future studies refining efficacy and application of this technology are warranted and are on the way.

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CLINICAL PRESENTATION OF EPIDURAL DORSAL ARACHNOID CYST AFTER EPIDURAL ANESTHESIA

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Background: Arachnoid cysts are diverticula with content similar to cerebrospinal fluid. 1% occurs in the spinal cord. They are typically located on the back of the thoracic spinal cord and are a rare cause of spinal cord compression. We present the case of a previously healthy male patient aged 15 years old, who comes to assessment by spastic paraparesis of 20 months duration, which begins after an anesthetic event, this is presented after ankle osteosynthesis. He had low sensitivity and strength of lower limbs, which gradually increases to present anesthesia level to T12 dermatomes L4, L5 and S1 bilateral hypoesthesia and strength 4+/ 5 bilateral, at the root L2 and 2+/5 L3, L4, L5, S1, hyperreflexia, and clonus Babinski, without alterations in the sacral reflexes. Magnetic resonance extradural arachnoid cyst T6 to T9 is diagnosed. Resection of the cyst, close dural defect and laminoplasty was performed Laminotomy T6 to T10. At follow-up of 12 months, the patient recovery of sensitivity, improved muscle strength up to 4+/5 L2 to S1 and normorreflexia was observed. After spinal anesthesia, change in cerebrospinal fluid pressure and expansion of the cyst was observed, which triggered the neurological deficit, making its presence clear. Despite the time that compression is maintained, the patient had a good clinical evolution.

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