Abstract

Introduction / Study Question
It is estimated that conjoined twins occur in about one in every 100,000 pregnancies worldwide. The separation surgery has a mortality rate of 50% in the neonatal period.

The aim of the study is to describe the anesthetic management of an urgent separation surgery in patients with this malformation, regarding that there are not published case reports in the current literature from our country.

Methods
The clinical case is about neonatal omphalopagus conjoined twins, born at 35 weeks by vaginal delivery from a 25 year old mother. They were referred to our institution in order to evaluate the possible surgical separation.

Multidisciplinary clinical evaluation was performed, discarding craniofacial, chest and cardiopulmonary malformations by noninvasive studies. Genitals were ambiguous, they shared small intestine and an extrophy bladder, with an important anterior abdominal wall defect. At day 25th of life, they suffered small intestine prolapse so they were programmed to undergo urgent separation surgery.

At the time of the pre-anesthetic assessment twins had a shared body weight of 3660 grams. They were identified as twin No 1 the right side and Twin No 2 on the left. The preoperative tests were acceptable. Informed consent for each patient was obtained.

The operating room was prepared with latex-free protocol, active heating and thermal blankets, and independent anesthesia delivery machines and equipment.

The team consisted of two anesthesiologists, a resident in anesthesiology, a pediatric surgeon, and a pediatric urologist.

In order to avoid confusions, mistakes and enhance the identification, each twin's venous access, monitoring extensions, syringes and medicines were coded by color (blue for twin 1 and red for twin 2).

Basic monitoring was stabilized. Anesthetic induction was performed with sevoflurane, propofol and fentanyl. Endotracheal intubation was carried out with 5.0 unikem endotracheal tubes, without any difficulty in the laryngoscopy and mask ventilation. Pulmonary ventilation was set in pressure controlled ventilation. The separation surgery was uneventful and lasted 300 minutes.

The initial arterial gasometry revealed hyperlactatemia and anaemia, which was treated with transfusion of packed red blood cells. The two patients were transferred to the neonatal intensive care unit, supported by invasive mechanical ventilation, and analgesia and sedation with propofol, fentanyl, operating room preparation, optimal positioning, vascular accessibility, blood products availability, fluid and electrolyte balance, antibiotic prophylaxis, hypothermia prevention, rigorous monitoring, applying a physiopathological approach to enhance perfusion, with postoperative intensive care unit transfer to the neonatal intensive care unit in order to treat several complications.

Conclusion
The anesthetic management relies on accurate determination of functional abnormalities of all systems, in particular, cardiopulmonary, with meticulous intraoperative monitoring and maintenance of homeostasis, optimal organisation in the operating room and careful observance of the surgical management plan prepared earlier.

Results
Omphalopagus conjoined twins comprise around 33% of the cases of conjoined twins and can vary from multiple-organ sharing to conjoined livers only.

The major problems during general anesthesia and surgery are the maintenance of patient airway, lung ventilation, optimal positioning of patients on the operating table, extremely high blood losses, long duration of surgery, thermal protection, and involvement of many members of medical personnel.

Postoperative care including mechanical ventilation, regulation of fluid and electrolyte balance, prevention of infection, and maintenance of hemodynamic stability should be carefully managed.

References