Anesthesic Management of a Giant Meningocele

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Abstract

Meningocele is one of the commonest anomalies related to the nervous system, it is a complex congenital malformation of the spine.

Usually children don’t present with the neurological manifestations at birth but the surgical exploration is warranted to prevent the future neurological deterioration.

Anesthesia in prone paediatric patients, especially in neonates poses the highest risk of complications. Safe anesthetic management depends on complete appreciation of the physiological, anatomic and pharmacological characteristics of the neonates.

In our case report, we present the anesthesic management at a new-born with a geant menongocele.

INTRODUCTION

Meningocele is one of the commonest anomalies related to the nervous system, it is a complex congenital malformation of the spine. Usually, children don’t present with the neurological manifestations at birth but the surgical exploration is warranted to prevent the future neurological deterioration (2). In this case report, we present the anesthesic management at a new-born with a geant meningocele.

OBSERVATION

A 43-day-old infant, with no particular pathological history, was admitted to the pediatric operating room for the cure of a giant lumbosacral meningocele. The diagnosis was made in the 3rd month of pregnancy, where a morphological ultrasound had objectified a voluminous formation in the lumbosacral region. The delivery was by caesarean.

The brain scan showed a tri-ventricular hydrocephalus with a non-active appearance, most likely due to an Arnold Chiari type 2 malformation. A pre-anesthetic consultation was made where a clinical examination showed no motor deficit in the 4 limbs, a good axial tone, and absence of any visible malformation. The pleuropulmonary and cardiovascular auscultation were without anomaly, the HR 140 bpm, RR 30 cycl/min, weight 6 kg, temp 37°C. On biological assessment, he had a Hb 16 g/dL, plaq 595,000, TP 105%, fibrinogen 3,18 g/L.

On admission to the operating room the patient was conscious, tonic, pink, hemodynamically stable with a blood pressure of 70/50, heart rate 145 bpm, SpO 0.2 100%. The examination showed a swelling measuring L: 18 cm, W: 15 cm, H: 10 cm, epidermized, with translucent contents, without signs of infection.

Figure 1

Giant lumbosacral meningocele

After conditioning, a compensation of fasting with G 1% at a rate of 20 mL/kg was made, as well as an administration of atropine at a rate of 20 mcg/kg. We found it difficult to put the patient in dorsal position because of his huge meningocele at lumbosacral location, a cushion with a hole used for scoliosis surgery was used to fill the mass.

The induction consisted of the administration of fentanyl 2 mcg/kg, associated with a pre-oxygenation, propofol 5 mg/kg and curare 0.5 mg/kg. The intubation was uneventful, and the patient was returned to the initial lateral position.

The procedure consisted in the cure of the giant meningocele, the intraoperative blood loss was important, he received a transfusion, the postoperative course was simple, a ventricular shunt of the hydrocephalus was programmed later.

Figure 2

Cushion with a hole

Figure 3

Intubation in dorsal position on the billot

Figure 4

Lateral operating position

DISCUSSION

Early closure of the meningocele, typically within the first day of life is recommended to reduce the bacterial contamination of the exposed spinal cord, which is the most common cause of death in this population during the newborn period. (4)

Anesthesia in prone paediatric patients, especially in neonates poses the highest risk of complications. Safe anesthetic management depends on complete appreciation of the physiological, anatomic and pharmacological characteristics of the neonates. (1)

As spinal surgery is a major surgery in children, preoperative considerations has to be done in a vigilant approach. (3)

Intubation and mechanical ventilation is generally considered for all the spinal surgeries.

Positional difficulties may be encountered during intubation procedure.

In a case report from India about the anesthetic management of a newborn with cervical myelomeningocele, the anesthetic team chose to intubate the patient in the dorsal position, they placed gauze bandages at the dorsal and lumbar level to compensate for cervical swelling. (1)

CONCLUSION

A meningocele may be described as a protrusion of the meninges through a bony defect in the spine. Defects in the lumbar are the commonest (5). Neonates are the most prone to anaesthetic complications. Vigilant management of the different anaesthetic times helps to reduce the occurrence of these complications.

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