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OCCIPITAL MENINGOENCEPHALOCELE – ANAESTHETIC CHALLENGES: A CASE REPORT

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ABSTRACT

Introduction: The anesthetic management of meningoencephalocele is a challange because of the positioning, handling of the airway and the difficulty in perioperative care.

Case Report: A 3 month old neonate presented for surgical excision of giant occipital meningoencephalocele. Despite the difficulties, intubation and peroperative anesthetic management of the patient was successfully achieved. **Conclusion:** Previous similar case reports were reviewed and potential perioperative complications are highlighted.

Key Words: paediatric difficult airway**,** Encephalocele, Occipital.

INTRODUCTION

The term *cephalocele* refers to a defect in the skull and dura with extracranial extension of intracranial structures. Meningoencephalocele consists of a herniation of cerebrospinal fluid, brain tissue and meninges through the skull defect. The cause of cephalocele has not been fully determined. Many differences in type and frequency of cephalocele among various ethnic groups have been observed. In Southeast Asia, the incidence is slightly higher, with approximately 1 in 5,000 live births. In this case report, we have included a detailed discussion describing the special anesthetic considerations of these patients.

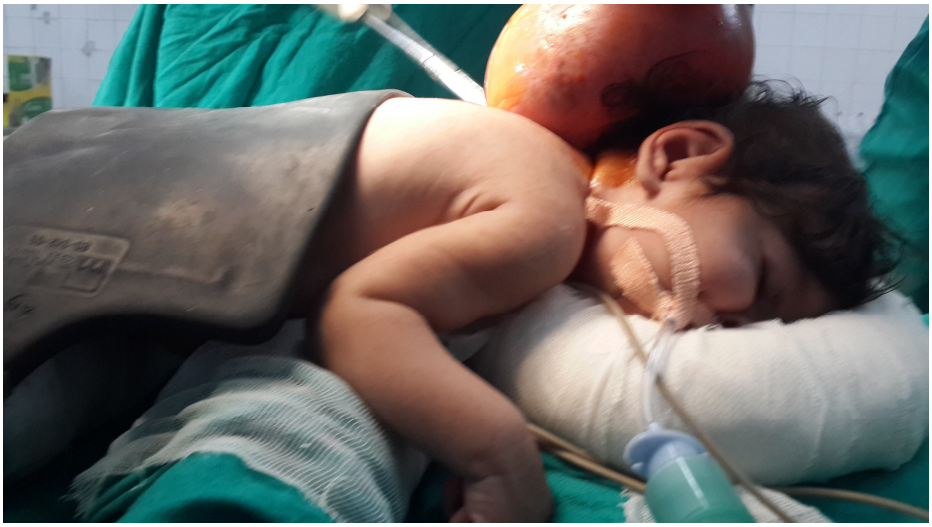
Case report

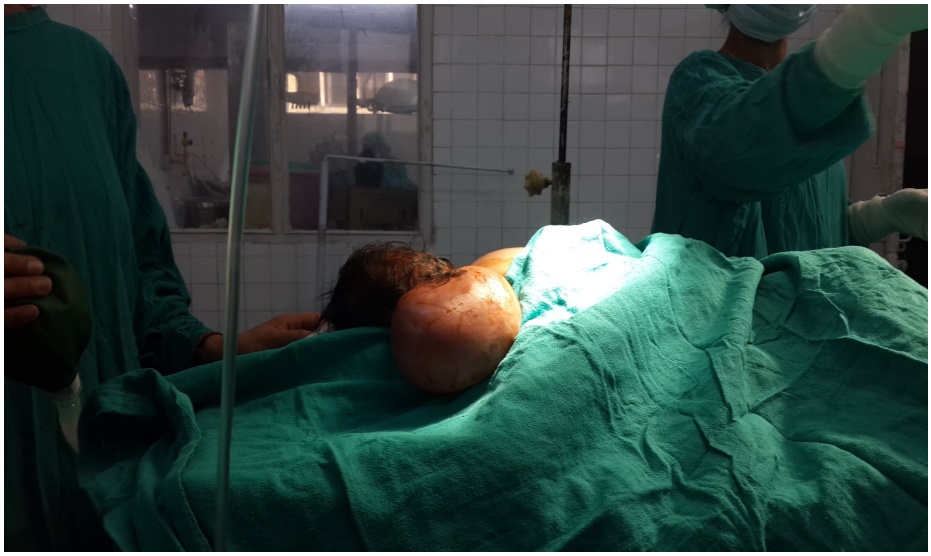
A neglected 3 month old female neonate presented with a giant cystic swelling in the occipital region and was scheduled for surgical excision. The baby was delivered by cesarean section in a private nursing home. The neonate with small swelling in occipital region was transferred to our hospital and admitted to the pediatric clinic for preoperative preparation but initially parents did not gave consent for surgery. The swelling kept enlarging, infant had

difficulty in breast feeding, difficulty in supine postioning during sleep, then parents again visited our hospitals out- patient department.

On preanesthetic evaluation, cardiovascular, respiratory and neurological system examination was normal. There was a swelling that measured 16x7 cm arising from posterior part of the head. No other congenital anomaly was detected. Magnetic resonance imaging (MRI) showed giant occipital meningoencephalocele with a minimal herniation of occipital lobe into the swelling.

Laboratory evaluations were within normal limits. After attaching precordial stethoscope and pulse oxymeter for monitoring purpose. The infant was placed on stack of folded gowns and head on stack of two rings. Induction was started in supine postion with incremental concentration of sevoflurane. After confirming adequate mask ventilation, muscle relaxation was achieved with succinylcoline 2 mg/kg and the infant was intubated by senior anesthesiologist. Confirming endotracheal placement of tube and after proper tube fixation, the baby was put into prone position. Anaesthesia was maintained with N_2O:O_2::50:50, sevoflurane 1-2%, atracurium 0.5 mg/kg intermittently and fentanyl infusion 2 mcg/kg. The complete resection of the sac was achieved without any complication. In total, 250 mL fluid infusion and 50 mL blood transfusion was required and the patient was anesthetized for two hours. With the establishment of spontaneous respiration and gag reflex, the patient was extubated and transferred to the recovery room. For postoperative analgesia, 60 mg paracetamol was administered rectally. After an uneventful postoperative period the patient was discharged to neurosurgical clinic for further follow-up.





DISCUSSION

Encephaloceles account for 10 to 20% of all craniospinal dysraphisms and 70% of occipital encephaloceles occur in females. These lesions are usually covered either with normal skin, dysplastic skin or a thin, distorted meningeal membrane. The large sized swellings may have significant brain herniation, abnormality of the underlying brain, microcephaly and ventriculomegaly. Such patients usually have poor prognosis . Encephaloceles with a small amount of dysfunctional tissue are conventionally treated by excision of the herniated brain tissue and repair of the dural defect. The surgical management of children with large defect along with herniation of a considerable proportion of brain matter into the sac, at times can be extremely difficult. In such cases preservation of the herniated brain parenchyma can be accompanied by expansile cranioplasty.

Patients with giant encephalocele and large amount of brain tissue in the sac usually die either shortly after birth or as a result of operation. A microcephalic child with neurological deficit and a sac containing cerebrum, cerebellum and brain stem structures, carry a poor prognosis. In such patients, it is generally impossible to foretell whether the infant will die quickly or will continue to live for many months or years, as size of the encephalocele itself is not a guide to prognosis. Ultimate result depends on the amount of normal brain tissue left inside the skull after the operation. Surgery thus just facilitates nursing of the baby. This infant was neurologically well developed. Furthermore less functional tissue in the sac made the surgical excision of the sac easy and safe.

Once the decision to operate has been made, a perioperative plan must be formulated by an anesthesiologist based on airway management, fluid balance and prevention of hypothermia. In our case, the occipital meningoencephalocele made supine position of head impossible due to the limited-neck extension and the likelihood of rupturing the membranes covering the spinal cord or brain. So we decided to place patient on raised platform of rolled-up blankets and intubate patient in supine position other alternative approaches of airway management includes place the child in lateral position, while an assistant temporarily supports the head or placing the child' s head beyond the edge of the table with an assistant supporting it. Before administering neuromuscular blocking agents and intubation, adequate mask ventilation must be verified. Latex allergy precautions should be used with these children for their first anesthetic procedure.

CONCLUSION

Perioperative management of patients with giant meningoencephalocele may be challenging for both anesthesiologist and neurosurgeon. These patients must be managed closely with an interdisciplinary approach.

REFERENCES

1. Barkovich AJ. Pediatric Neuroimaging. Philadelphia: Lippincott Williams & Wilkins 2000:267–1.
2. Nyberg DA, Mc Gahan JP, Pretorius DH, Pilu G. Diagnostic Imaging of Fetal Anomalies. Philadelphia: Lippincott Williams & Wilkins 2003:298.
3. McLone D. Pediatric Neurosurgery: Surgery of the developing system. Philadelphia: Saunders Company 2001:204.

4. Singh K, Garasia M, Ambardehar M, Thota R, Dewoolkar L, Mehta K. Giant occipital meningoencephalocele: Anaesthetic implications. The Internet Jounal of Anesthesiology 2007;13(2).

Dey N, Gombar KK, Khanna AK, Khandelwal P. Airway management in neonates with occipital encephalocele: adjustment and modifications. Paediatr Anaesth 2007;17(11):1119–20.