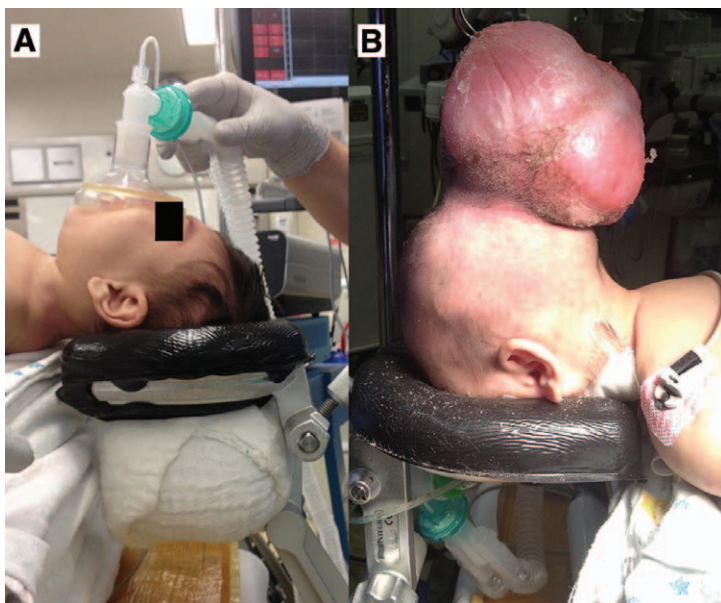


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## Images in Anesthesiology: Airway Management in an Infant with a Giant Occipital Encephalocele

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A 6-MONTH-OLD infant, weighing 5.5 kg, was scheduled for resection of an occipital encephalocele. The patient was placed supine with his body on stacked blankets, his formed skull supported by a gel-padded Integra Mayfield horseshoe headrest with the encephalocele hanging freely beneath (fig. A). Mask induction maintaining spontaneous ventilation was coupled with direct laryngoscopy using a Miller 1 blade. With a grade 1 view, a 3.0-mm endotracheal tube was placed orally. The patient was then positioned prone for the procedure with the head resting in the headrest (fig. B). On completion of the surgery, the patient's trachea was extubated in the operating room.

Encephalocele is a rare neural tube defect, occurring in 1 in 5,000 births worldwide; 70% are occipital.<sup>1</sup> Up to 60% of cases are associated with other congenital anomalies such as hydrocephalus, microcephaly, micrognathia, Chiari malformation, pulmonary hypoplasia, and renal agenesis. Mask

ventilation may be awkward, and difficult intubation is associated with approximately 20% of cases.<sup>1</sup> Positioning of the patient for intubation contributes to the difficulty with airway management.<sup>2</sup> Manual suspension of the patient's head beyond the operating table risks undesirable movement of the head during laryngoscopy. Lateral positioning requires a less ideal approach for the laryngoscopist and potentiates an obscured laryngoscopic view.<sup>2</sup> Removal of the contents of the encephalocele by needle aspiration before induction or intubation may potentiate infection, hemodynamic instability, and possible herniation,<sup>1,3</sup> particularly in the neonate.

Positioning any patient with an occipital encephalocele in one of the various sizes of the horseshoe headrest creates optimal conditions for induction and tracheal intubation by providing the anesthesiologist airway alignment and stability without increasing pressure on the encephalocele.

### Competing Interests

The authors declare no competing interests.

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### References

1. Mahajan C, Rath GP, Dash HH, Bithal PK: Perioperative management of children with encephalocele: An institutional experience. *J Neurosurg Anesthesiol* 2011; 23:352–6
2. Manhas Y, Chinnan NK, Singh AK: Neonatal airway management in occipital encephalocele. *Anesth Analg* 2006; 103:1632
3. Dey N, Gombar KK, Khanna AK, Khandelwal P: Airway management in neonates with occipital encephalocele: Adjustments and modifications. *Paediatr Anaesth* 2007; 17:1119–20

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