**INTRODUCTION**

- This is a case series of two neonates who presented for surgical resection of large occipital encephaloceles.
- We were faced with the challenge of difficult airway management due to limited neck extension as well as inability to position supine due to risk of tissue damage.
- Intubating techniques reported in the literature are often in the lateral position [1,2] or placing the head in a donut hole [3].
- In one case we intubated one patient supine with the encephalocele in the horseshoe gel headrest, a novel technique, never published in the literature.

**CASE ONE**

A 4.1kg baby was born at 38 weeks gestation with large fluctuant pink and purple cystic mass behind the head with no neurological deficit. The mass was 9.5cm x 9.6cm x 13.1cm. A significant proportion of the baby’s weight was attributed to the presence of the encephalocele. Early excision at DOL 3 was undertaken to reduce infection or rupture. We elected to intravenously induce the patient with propofol 230 micrograms/kg/min and titrated doses of 2-4% sevoflurane volatile anesthetic while maintaining spontaneous ventilation in the right lateral position. Having ascertained the ability to mask, the patient was intubated using a Glidescope with blade Size 0 with an ETT size 3.0 cuffed following a Grade 1 view.

**CASE TWO**

A term baby girl born at 2.9kg was prenatally diagnosed with an occipital encephalocele at four months gestation. Imaging following birth revealed that the mass measured 6.8cm x 8.8cm x 9.2cm and contained primarily CSF with the protrusion of cerebellum. The positioning and padding of the mass was novel and suggested by the surgeon. The baby was placed supine with the body up to the neck, supported by the bed. The head was positioned on a horseshoe gel headrest which was wide and deep enough to seat the encephalocele (see image). The patient was induced with 3mg intravenous ketamine and 2% sevoflurane with maintenance of spontaneous ventilation. Initial attempts were unsuccessful with direct laryngoscopy with a Miller blade 0 and then 1. A Glidescope with blade size 0 was then employed. The glottis opening appeared anterior and two attempts with manipulation of the head rest to provide mild head extension were required to permitting intubation with an ETT size 3.0 cuffed.

**DISCUSSION**

The intubation for the second case was more challenging and we hypothesize it was for multiple reasons:
- Positioning. As shown in the picture, the horseshoe headrest fixed the neck and made direct laryngoscopy and intubation difficult.
- Anatomy: Short thick neck, decreased thyromental distance.
- Small head: Cranial growth is known to depend on brain cellular growth/expansion. Since cerebral contents were contained within the encephalocele and not the skull, it perhaps did not expand appropriately.

**CONCLUSIONS**

- Peri-operative management of massive occipital encephalocele can be challenging for the anesthesiologist, it is vital to think beyond routine practice and develop novel ideas.
- We describe intubation of an encephalocele in the horseshoe gel headrest, a novel technique, never published in the literature.
- We also describe the risks/benefits of two positioning methods that allowed preservation of neural tissue and safe airway management.

**REFERENCES**