Conclusion: The EXIT procedure, using an algorithm of planned surgical interventions performed by a cohesive team, provides an excellent means of securing the airway during delivery of neonates with prenatally detected airway compromise.

Objective: To review 20 years of experience with the EXIT procedure in order to optimize future patient outcomes.

Methods: Retrospective Chart Review. Results: EXIT procedure was planned in 8 patients. 5 have previously been reported in by Stocks, et al. in Arch Otolaryngol Head Neck Surg. 1997; 123: 641-645. The airway interventions performed while still on maternal circulation included: direct laryngoscopy with intubation, intubation with use of a rigid telescope, rigid bronchoscopy, and emergency tracheostomy.

Case Report: 37 week, 3 day female noted to have an oral mass, identified in utero. (Image 1) During the EXIT procedure, Pediatric Otolaryngology initially achieved the airway with a 3.0 endotracheal tube (ETT) loaded over a 0 degree, 2.7mm Hopkins Rod telescope. The neonate then underwent immediate tracheostomy tube placement. (Image 2)

Results: The airway interventions performed during EXIT included: direct laryngoscopy with intubation (1 patient), intubation with use of a rigid telescope (1), emergent drainage of cystic structure (1), rigid bronchoscopy (1), and emergency tracheostomy (3). 7 patients required surgical intervention to secure airway. 1 patient required intraoperative chest tube for tension pneumothorax. No intraoperative deaths occurred.

Discussion: Use of a cohesive team and a surgical algorithm optimize time and efficiency for obtaining airway during EXIT. From our experience we have developed the following Airway Algorithm (Figure 1) and necessary Instruments (Figure 2). Specialists from Pediatric Otolaryngology, Obstetrics and Gynecology, Anesthesia, Neonatology, and Nursing participated as a cohesive team. The planning and use of airway algorithm for the surgical interventions have been instrumental in optimizing outcomes.

Introduction: In a neonate with a severely compromised airway, survival off of maternal circulation may not be possible and continued use of maternal circulation during obtainment of the airway provides valuable time to succeed. We reviewed our EXIT data to develop an airway algorithm to optimize outcomes.

Image 1. Pre-Natal MRI demonstrating large mass (Red Arrow) protruding from the oral cavity.

Image 2. Neonate with large oral cavity mass with tracheostomy to secure airway after successful EXIT procedure.

Airway Algorithm

1. Direct Laryngoscopy, Intubate
2. If unable, Intubate with Endotracheal Tube (ETT) over Hopkins Rod
3. If unable, Rigid Bronchoscopy with Seldinger Intubation or Tracheostomy
4. If unable, Tracheostomy

Figure 1. Surgical Airway Plan

Figure 2. Airway Instruments

References:
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20 Year Review of Ex-Partum Intrauterine Treatment (EXIT) Procedure Outcomes

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