Ex-utero Intrapartum Therapy

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Cervical Teratoma
K.M.

- 25 years old
- G1 P0
- Referred at 24 weeks GA
EXIT Principles

- Secure neonatal airway at delivery due to anatomy or pathophysiology concerns

- Maintain uteroplacental circulation by preserving uterine hypotonia
Open tracheal occlusion
Multidisciplinary team

- Maternal-fetal specialist
- Pediatric surgeon
- Obstetric anesthesiologist
- Pediatric anesthesiologist
- Sonographer
- Neonatologist
- Neonatal transport nursing
- Obstetric surgical team
- Pediatric surgical team
- Respiratory therapist
Prenatal workup

- Team counseling
- Fetal ultrasonography
- Fetal echocardiography
- Fetal MRI
- Karyotype analysis
- Lung maturity
Fetal MRI

- 35 weeks GA
- 8.6 x 4.7 maxillary mass
- Extends to upper chest
- Left nare/oropharynx obstruction
- Compression left parapharyngeal space
- Patent trachea and thoracic inlet
EXIT to airway

- Reversal of tracheal occlusion balloon
- Fetal neck masses
  - Cervical teratoma
  - Hemangioma
  - Lymphangioma
  - Neuroblastoma
  - Goiter
- CHAOS
  - Laryngeal atresia
  - Tracheal atresia
  - Micrognathia
EXIT procedure

- Uterine relaxation
  - Inhalation agents
  - Tocolytic agents
- Maintain intra-uterine volume
  - Partial delivery of fetus
  - Amnio-infusion
- Fetal monitoring
  - Fetal echocardiography
  - Pulseoximetry
- Maternal monitoring
  - ECG
  - Arterial line
  - End-tidal CO₂
EXIT to resection

- Lung masses
  - Congenital pulmonary airway malformations (CPAM)
  - Bronchopulmonary sequestration
- Mediastinal masses
  - Teratoma
  - Lymphangioma
EXIT to ECMO

- Congenital diaphragmatic hernia
  - LHR < 1.0
  - Liver up
- Congenital heart disease
  - Hypoplastic left heart syndrome with restrictive/intact atrial septum
  - Aortic stenosis with restrictive/intact atrial septum
EXIT to separation

- Conjoined twins
Equipment

- Direct laryngoscopy
  - Miller 0
  - Miller 00
- Direct bronchoscopy
  - 2.5
  - 3.0
- Feeding tubes
  - 2.5 Fr
  - 3.0 Fr

- 2.5 mm
  - < 28 weeks GA
  - < 1kg
- 3.0 mm
  - 28 – 34 weeks GA
  - 1-2 kg
- 3.5 mm
  - > 34 weeks GA
  - 2 -3 kg
Ex-utero Intra-partum Treatment (EXIT procedure)
Gavin M.
Questions?