

Airway Management in a Parturient with Subglottic Stenosis

Mallory Hawksworth, MD, Mark Hanak, MD, Peter Szatkowski, MD, PharmD, Brennan McMillan, MD, Adithya Bhat, MD and Muthuraj Kanakaraj, MD

Presentation

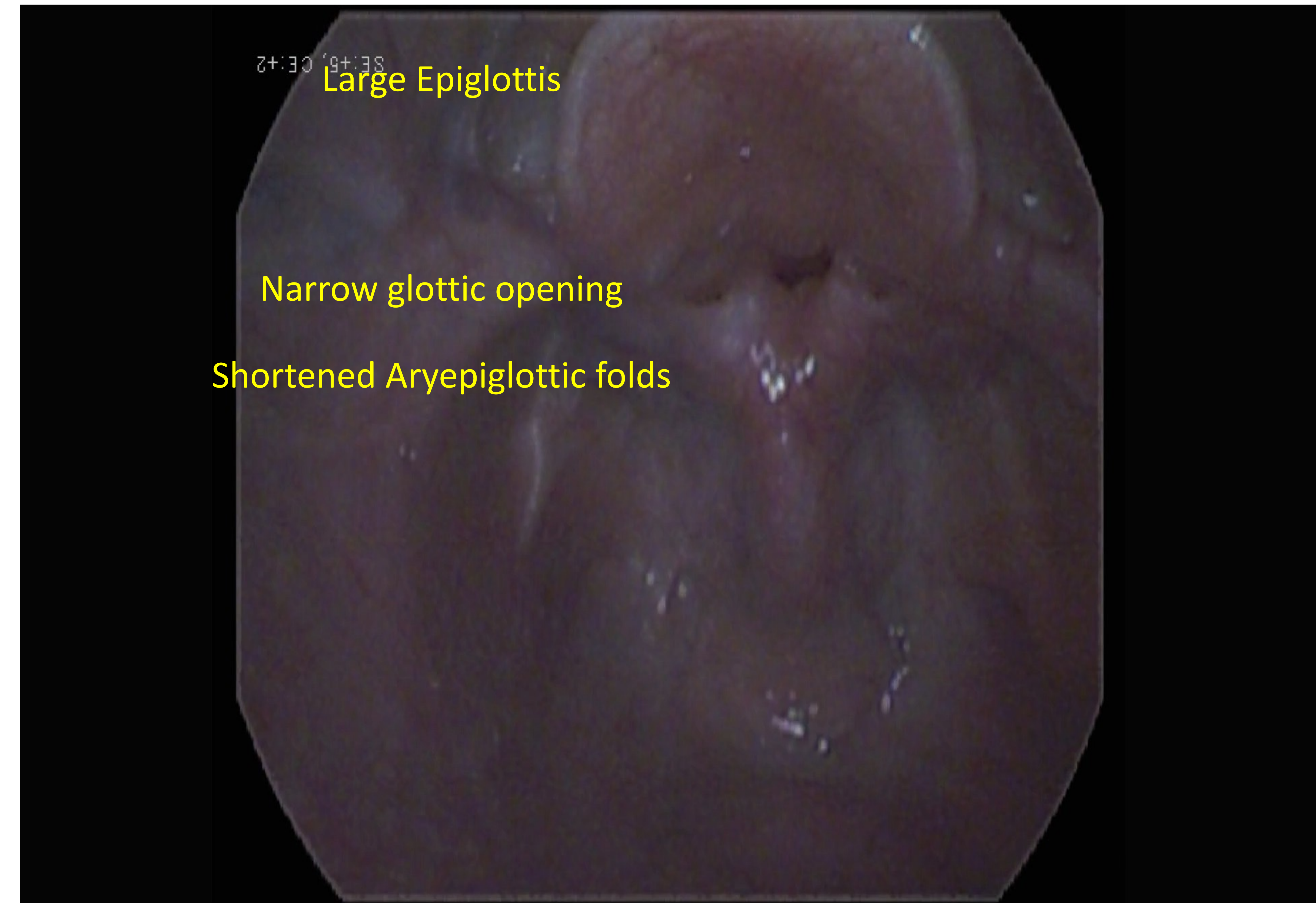
- 35 y/o G2P1001, Induction due to pre-eclampsia
- **PMHx: Asthma, DiGeorge syndrome and congenital laryngeal web requiring tracheostomy as neonate**, subsequent decannulation with anterior cricoid split procedure; however, there was **persistent stenosis**

First Pregnancy

- Cesarean Delivery (CD) complicated by postoperative respiratory decompensation requiring BiPAP

Current pregnancy

- Transferred from outside hospital for challenging airway & PE with severe features
- Interdisciplinary conference between ENT, OB & Anesthesia
- Uneventful CD under CSE with ENT present through delivery

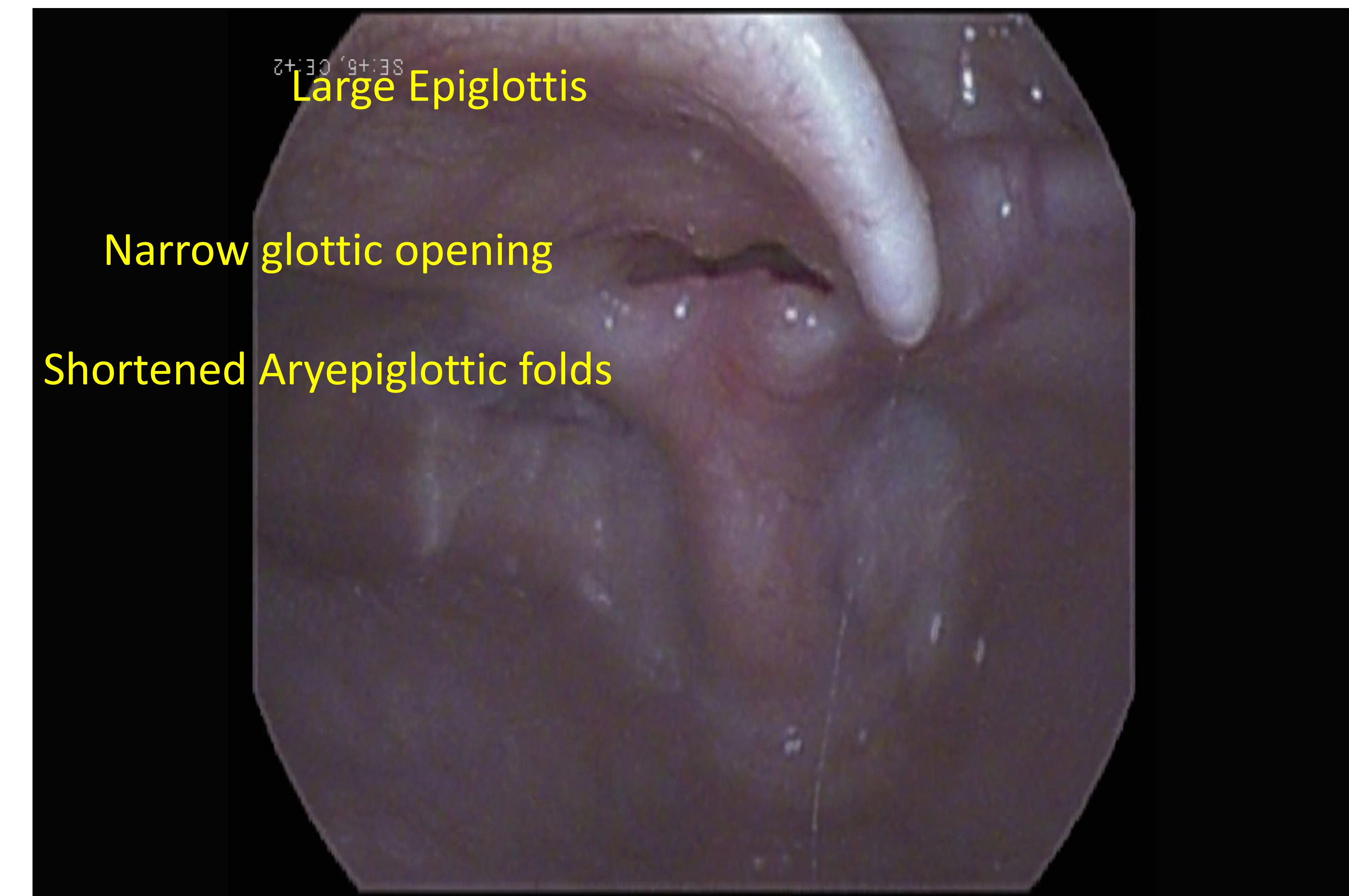


POD-1

- Worsening dyspnea, pulmonary edema, increasing O₂ requirements
- Developed stress induced cardiomyopathy and cardiogenic shock
- Transferred to ICU and started on BiPAP and Heliox
- Anesthesia and ENT called to bedside for emergent airway management

Airway Management

- Induction with IV Ketamine
- Easy mask ventilation
- First attempt: CMAC 3 with 6.0 ETT -> unable to pass through vocal cords
- Second attempt: CMAC 3 with flexible bronchoscope -> unable to position at glottic opening
- **Prior to third attempt, patient was successfully ventilated with I-Gel LMA 3**
- Third attempt: With CMAC 3, flexible tip bougie -> passed through cords, but not 6.0 ETT
- Fourth attempt: With CMAC 3, Cook exchange catheter advanced through vocal cords, but 6.0 ETT unable to be passed. 6.0 ETT removed and 5.0 ETT passed easily through cords over catheter.
- ETT position was confirmed via bronchoscopy
- Patient was **extubated on POD-4 in the OR** with anesthesia and ENT present



Right under the vocal cord, the patient had a tortuous, narrow and stenotic sub-glottis which made it more challenging to pass the 5.0 ETT

Conclusions

- Pre-operative multidisciplinary planning is vital in a patient with known difficult airway, especially in a pregnant mother with a challenging airway anatomy
- Transfer at risk patients to higher level of care without delay

Follow up

- 1 month post-partum: presented for post-partum visit in respiratory distress; taken emergently to OR for intubation
- 4 months post-partum: brought to ED unresponsive due to respiratory distress; multiple intubation attempts; ultimately taken to OR for tracheostomy
- 6 months post-partum: doing well with tracheostomy

Airway challenges in DiGeorge Syndrome

- Most commonly – laryngeal web, airway-malacia, subglottic stenosis

Hankey PB, Ghulmiyyah J, Yeh HW, Tracy M, Arganbright J. Airway anomalies in patients with 22q11.2 deletion syndrome: A scoping review. Int J Pediatric Otorhinolaryngology. 2022 Nov 2;163:111373. doi: 10.1016/j.ijporl.2022.111373. PMID: 36335759.