

AN UNCONVENTIONAL USE OF AIRWAY ULTRASOUND IN A DIFFICULT AND TRAUMATIC OBSTETRIC AIRWAY: **BACKGROUND**

- The Obstetric Airway
 - Physiological & anatomical changes
 - Hormonal changes and increased blood volume causing congestion in swelling in upper airway tissues
 - Increased airway resistance, vascularity, and edema
 - Mallampati score increases
 - Higher risk of obstruction and aspiration, relaxation of lower esophageal sphincter
 - Decreased functional residual capacity due to uterus expansion and diaphragm elevation
 - Increased oxygen consumption
 - <https://www.intechopen.com/chapters/75356>

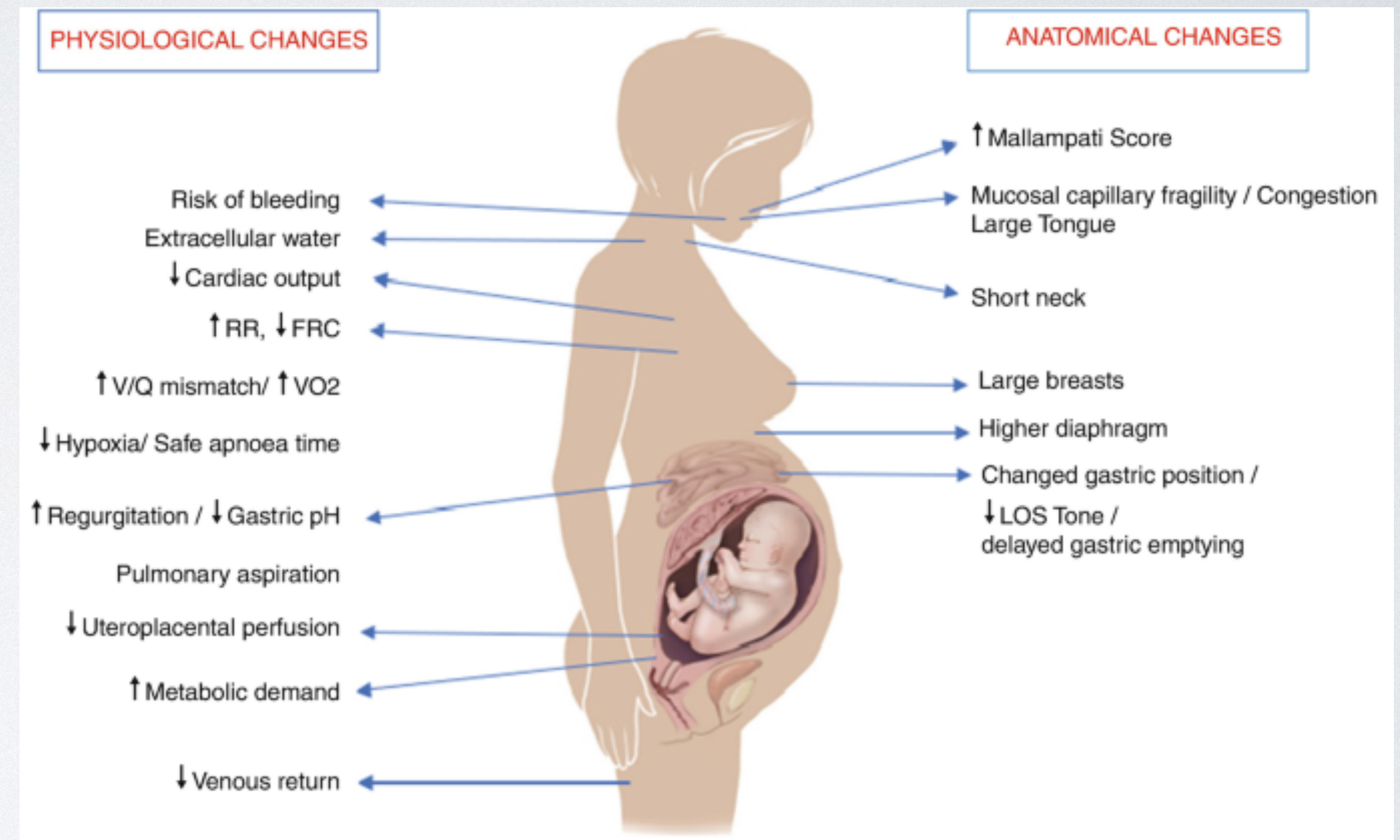


Figure 1: Anatomical & Physiological Changes Affecting Obstetric Airway Management

- https://link.springer.com/chapter/10.1007/978-981-19-4747-6_28

AN UNCONVENTIONAL USE OF AIRWAY ULTRASOUND IN A DIFFICULT AND TRAUMATIC OBSTETRIC AIRWAY: **THE CASE**

- 21yoF G2P0010 at 38w5d with PMHx BMI 62, LGA, and carcinoid tumor, presented for induction for Pre-E w/ SF
- Uneventful epidural placement with a T10 sensory level
- Unsuccessful IOL w/ category II tracings
- Epidural dosed for C/S
- Patient unable to tolerate procedure and decision made to convert to GA
- Preoxygenation and RSI with glidescope
- Airway proved to be difficult, with resulting airway trauma
- Airway ultrasound performed to confirm ETT placement and evaluate extent of soft tissue injury
- Given evidence of soft tissue edema and fluid collection, ENT urgently consulted
- ETT exchanged under VL and defect repaired by ENT
- Patient later denied sore throat or pain and reported satisfaction with her care

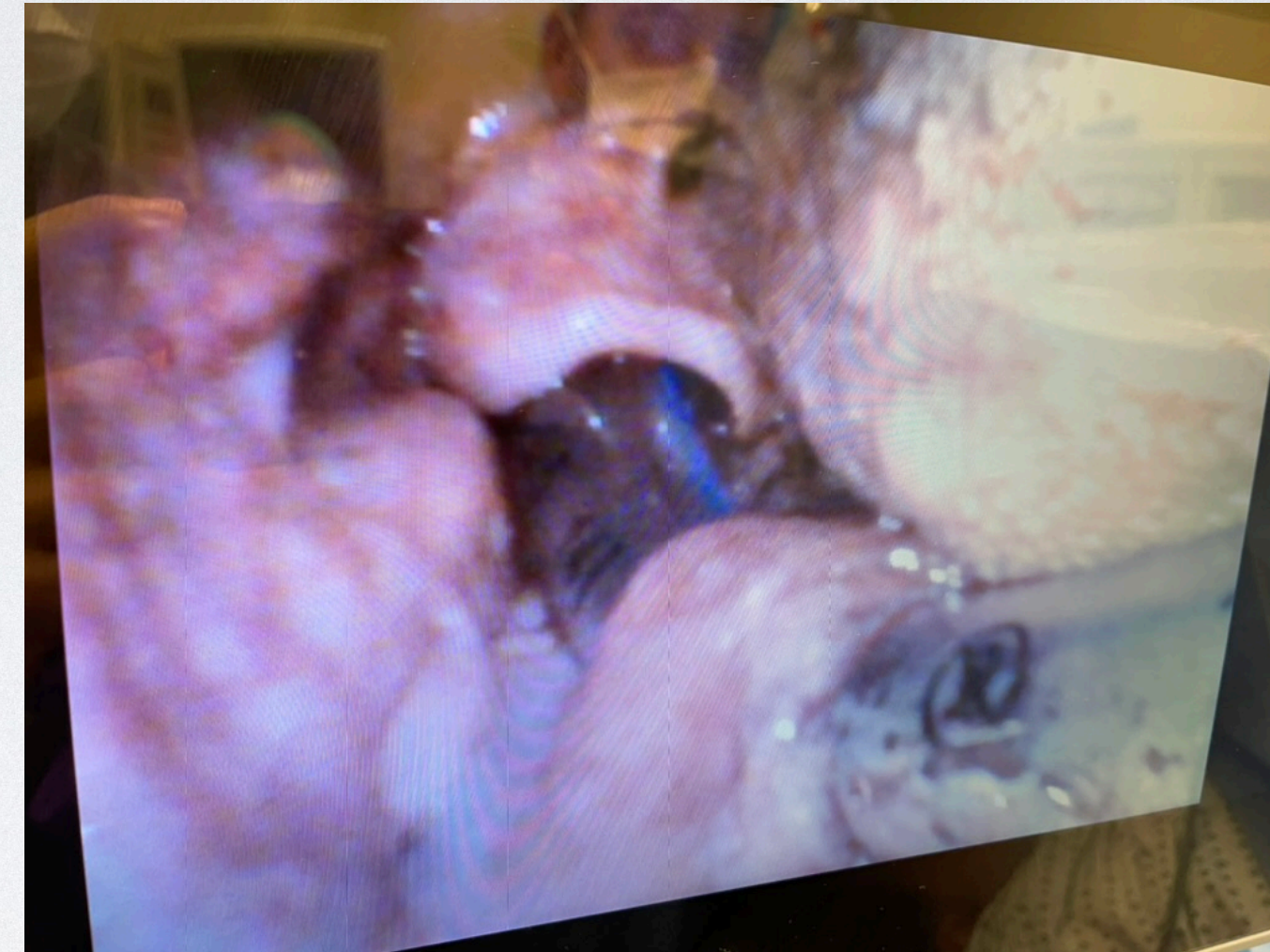


Figure 2a: Airway Trauma



Figure 2b: Airway Trauma

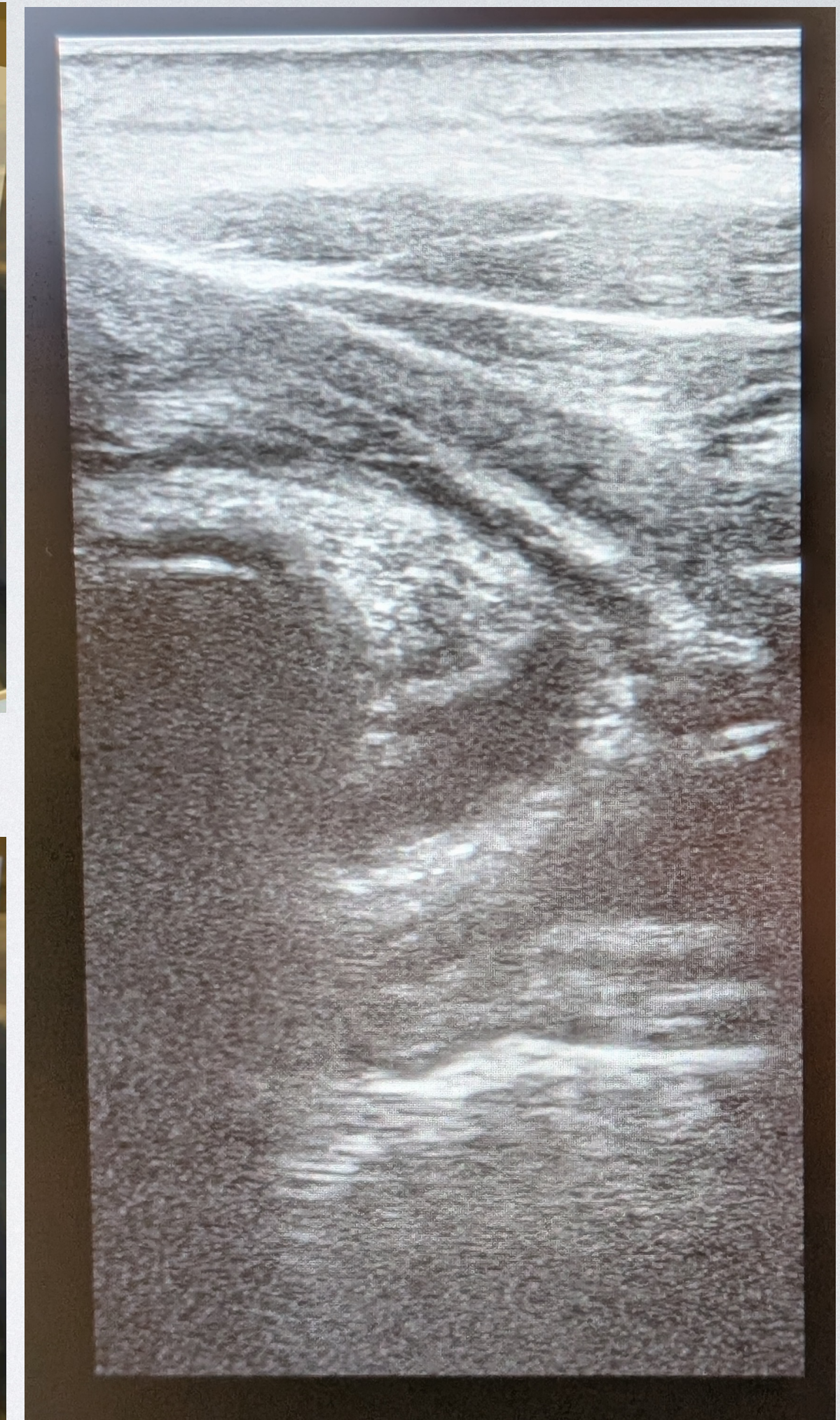
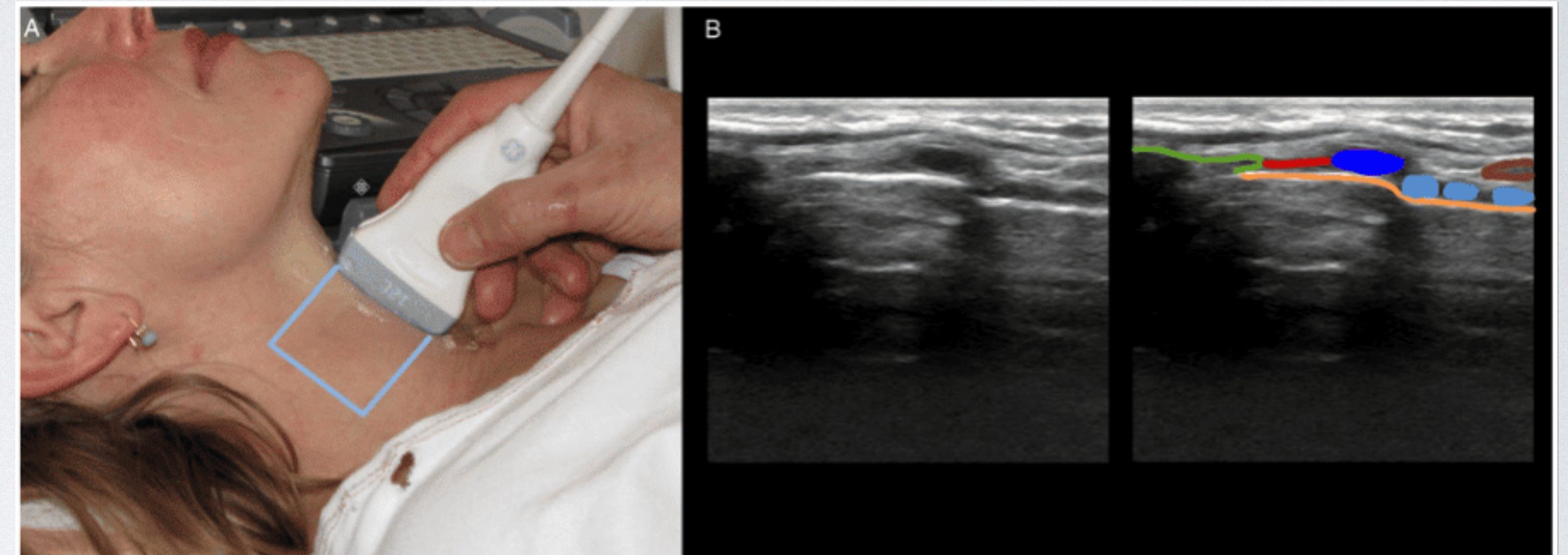


Figure 3: Airway Ultrasound

AN UNCONVENTIONAL USE OF AIRWAY ULTRASOUND IN A DIFFICULT AND TRAUMATIC OBSTETRIC AIRWAY: **TEACHING POINTS**

- Airway ultrasound is a noninvasive tool which can provide valuable information regarding anatomy, measurements, ETT placement, identification of the cricothyroid membrane for cricothyrotomy, and assessment of a difficult airway
- In obstetric airway management, and in the morbidly obese population, it can prove to be invaluable
- The availability of an ENT colleague who can provide a second opinion and assist with laceration repairs is a tremendous resource



A) The linear high frequency transducer placed in the midsagittal plane, the scanning area is marked with light blue. (B) The thyroid cartilage (green). The cricoid cartilage (dark blue). Tracheal rings (light blue). The cricothyroid membrane (red). The tissue/air border (orange). The isthmus of the thyroid gland (brown). Below the orange line only artifacts are seen.



Trachea and esophagus. Transverse scan just cranial to the suprasternal notch and to the patient's left side of the trachea. Anterior part of tracheal cartilage (light blue). Esophagus (purple). Carotid artery (red).

Figure 4: Ultrasound of the Airway

• <https://litfl.com/airway-ultrasound/>