Anesthetic Considerations For a Parturient with Subglottic Stenosis and Multiple Sclerosis: A Case Report

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Introduction

- Subglottic stenosis (SGS) can be a complication of repeated intubation or may be idiopathic
- Multiple sclerosis (MS) is an autoimmune disease with three-quarters of patients being women of childbearing age [1]
- The combination of these two comorbidities requires careful planning in the obstetrics population

Case Presentation

- 41yo G2P0010
- **PMH**
  - Idiopathic SGS s/p multiple tracheal balloon dilations
    - Initial SGS symptoms included exertional dyspnea after an URI and inspiratory stridor with her first pregnancy
    - Laryngoscopy during her initial pregnancy revealed a 50-60% SGS, and dilation resulted in a 7.5 regular ETT passing through the SGS after tracheal balloon dilation

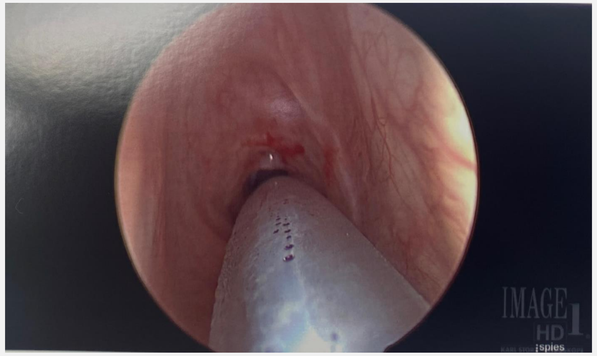

Fig. 1 Laryngoscopy view of a 7.5 regular ETT fitting snugly after successful dilation with size 14 and 16 balloons

Case Presentation

- **PMH (cont'd)**
  - Relapse-remitting MS
    - Initial MS symptoms included left arm numbness and left eye blindness
- She had no pulmonary or neurologic complaints upon arrival
- **Labor Course**
  - IOL at 38w1d gestation and received early epidural placement with a continuous infusion for labor analgesia
- OR set up
  - Multiple ETT ranging from size 6.0-7.5, video laryngoscope, fiberoptic bronchoscope, percutaneous trach kits, and cricothyrotomy kits were made available in the OR in the event of a crash c-section
- After NSVD, she lost about 1800cc of blood from PPH and was given misoprostol while multiple passes to remove retained placenta were made
- The delivery ultimately resulted in a healthy male infant with APGAR scores 9/9 and mother with no exacerbations of her SGS or MS

References

1. Houtchens MK, Edwards NC, Schneider G, et al. (2018) Neurology. 91:e1559-e1569.
2. Vukusic S, Hutchinson M, Hours M, et al. (2004) Brain. 127:1353-60.
3. Martucci G, Di Lorenzo A, Polito F, Acampa L. (2011) Eur Rev Med Pharmacol Sci. 15:458-60.

Discussion

- Physiological changes during pregnancy
  - Airway edema
    - Predisposes SGS patients to the cannot intubate, cannot ventilate situation
- Neuraxial anesthesia
  - There is evidence that MS relapse rates decrease during pregnancy, increase slightly during the first three months postpartum, and finally regress to pre-pregnancy rates thereafter [2]
  - There is a hypothetical risk that injecting LA in the intrathecal space, which is continuous with potentially demyelinated white matter, may be associated with MS exacerbations
    - LA concentration, and thus neurotoxic effects, would be higher if injected as a spinal versus epidural
  - However, no data has supported this theoretical complication [3]

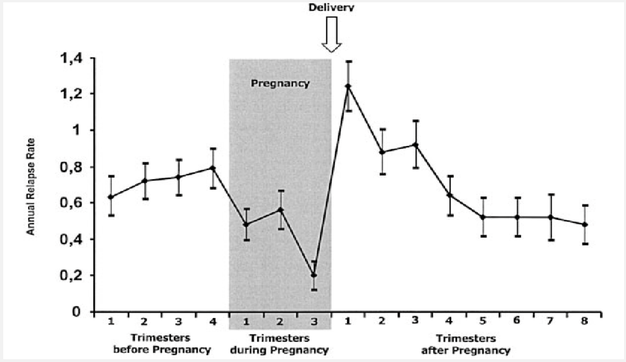

Fig. 2 Annualized relapse rate in the year before pregnancy, during pregnancy, and two years after delivery (PRIMS study) [2]