### Going with Flow: High Flow Nasal Cannula in a Super Morbidly Obese Patient During Unscheduled Cesarean Delivery Under Neuraxial Anesthesia

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### **Background:**

- Obstetric risk of difficult intubation (1:49) and failed intubation (1:808)<sup>1</sup>
  - Risk Factors: Increased BMI, Mallampati score III or IV
- High-flow nasal cannula (HFNC) benefits:
  - Delivers warmed, humidified O2 (up to 70 L/min, FiO2 21-100%)
  - PEEP, improves alveolar recruitment, and reduces dead space



- Pre-oxygenation w/HFNC in low risk obstetric pts for elective cesarean delivery (CD) non-inferior to Face Mask (FM) <sup>(2-3)</sup>
  - − Tan et al: First  $et0_2 \rightarrow 71\%$  HFNC vs 44% FM (p=0.002)
- Limited data exists on HFNC use during CD in high risk patients under neuraxial anesthesia for an unscheduled cesarean delivery (CD)

### We present a case of HFNC use in super morbidly obese patient during an unscheduled Cesarean Delivery under neuraxial anesthesia

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## 35 yo G1P0 at 38w2d, BMI 58 kg/m<sup>2</sup>, OSA on CPAP, chronic hypertension, asthma presented to L&D for induction of labor

- Dural puncture epidural (DPE) placed for induction of labor (IOL)
- PE: MP IV, TMD >3 FB, short neck
- Unscheduled primary CD: labor dystocia, latent phase arrest (<6cm) with moderate/strong contractions for >12hrs without cervical change
- Unscheduled CD performed under in-situ epidural catheter
- Following optimization of sniffing position and respiratory mechanics, HFNC was initiated at 40 L/min with an FiO<sub>2</sub> of 50% to enhance ventilatory support
- Patient was comfortable through the CD with no perioperative respiratory discomfort





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#### **Learning points:**

- Obstetric patients at high risk for difficult/failed intubation
  - Exacerbated to extremes of BMI
- HFNC benefits in obstetric patients:
  - Non-invasive tool for pre-oxygenation optimization
  - Non-inferior to FM for pre-oxygenation
  - May reduce morbidity in setting of general anesthesia/difficult airway for CD
- Further exploration needed:
  - High BMI
  - Unscheduled CD
  - Not readily available/easy to set up
  - Aspiration risk?

# This case highlights the potential role of HFNC in providing respiratory support for high-risk obstetric patients undergoing unscheduled cesarean delivery under neuraxial anesthesia

- 1. Reale SC, et al. Anesthesiology. 2022;136(5):697-708
- 2. Tan PCF, et al. Int J Obstet Anesth. 2025 Mar 14:104333



<sup>3.</sup> Reale SC, et al. Int J Obstet Anesth. 2025 Feb;61