Anesthetic management for emergent cesarean in a parturient with skeletal dysplasia, spinal fusion, and history of failed airway, who presented as a level 1 trauma

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Background: Skeletal dysplasia includes >350 distinct congenital disorders with abnormalities in skeletal size, shape and function. Cardiomyopathy, bony fractures, airway anomalies, and spinal instrumentation are common and raise unique challenges for peripartum anesthetic management.

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Case

A 42yo G1P0 presented at 28w for OB anesthesia consultation due to remarkably complex PMHx including: skeletal dysplasia (ht:4’2”), T4-L3 fusion, non-ambulatory, gastric bypass, anemia, DVT s/p IVC filter on therapeutic enoxaparin, chronic opioid therapy for recurrent bony fractures, obesity, and OSA.

Airway history notable for failed intubation requiring aborted surgery, otherwise requiring video laryngoscopy w/bougie. Cesarean was scheduled at 39w for concern of CPD.

At 35w4d, she presented as a level 1 trauma following MVC. GCS was 15; she reported enoxaparin use 4hr prior. Polytraumatic injuries included bony fractures of C1, C7, T1, T4, right femur, several ribs; right vertebral artery blunt vascular injury, and hemorrhage from a large scalp laceration. Her c-spine was immobilized.

FHT revealed recurrent late decelerations, prompting emergent cesarean. With c-collar in place, RSI was performed with fentanyl, propofol, and rocuronium. Video laryngoscopy revealed G1V, 6.5ETT w/stylet was placed. MTP was initiated. Neonatal APGARs were 1,6,9. The patient was transported intubated and sedated to the trauma ICU for further trauma management.

Discussion

For planned cesarean, her history presented challenges to every anesthetic option. SSS in the setting of her extreme short stature presented risk of high/total spinal and uncertain optimal dosage. Epidural placement and block reliability were dubious given her T4-L3 fusion and central canal stenosis. An intrathecal catheter carried increased risk of PDPH with probable inability to place EBP. However, it was felt an intrathecal catheter would be more reliable than an LEA and more easily titrated than SSS, and was the neuraxial technique of choice. Her history of pre-gravid failed intubation, gravid uterus, obesity, OSA, and gastric bypass, rendered GETA particularly undesirable; reliable neuraxial technique was critically important. Her presentation as a Level 1 trauma with recent enoxaparin made GETA the only safe option. Airway exam suggested that asleep intubation was likely to be successful. Therefore, awake fiberoptic was avoided due to increased aspiration risk in a gravid trauma patient with history of gastric bypass. Video rather than direct laryngoscopy was chosen due to cervical spine injuries. Fiberoptic scope and LMA were bedside at induction. Rocuronium was favored over succinycholine for RSI given her immobility; sugammadex was available in the event of inability to intubate/ventilate.

References: Melekoglu R, Celik E, Eraslan S. Successful obstetric and anaesthetic management of a pregnant woman with achondroplasia. BMJ Case Rep. 2017 Oct 25;2017:bcr2017221238. doi: 10.1136/bcr-2017-221238. PMID: 29070618; PMCID: PMC5665186.

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