The Successful Use of Epidural Anesthesia in a Parturient with Klippel-Feil Syndrome Undergoing Repeat Cesarean Section

Presenting Author: Adrienne P Ray MD
Presenting Author's Institution: University of North Carolina, Chapel Hill - Chapel Hill, North Carolina
Co-Authors: Kathleen A Smith MD - University of North Carolina, Chapel Hill - Chapel Hill, North Carolina

Introduction: Klippel-Feil syndrome (KFS) consists of a triad of short neck, low posterior hair line and limited head movement. These patients may have spinal fusion, kyphoscoliosis, atlanto-occipital instability, cardiac and renal abnormalities. They pose many challenges for the anesthesiologist, particularly regarding airway management. Reports of successful use of neuraxial anesthesia are imperative to help establish a record of safety in these patients whom airway manipulation is best avoided.

Case Description: A 23 year-old female, G4P2012 at 38 weeks gestation, with KFS presented for repeat cesarean section and bilateral tubal ligation. The patient was morbidly obese (BMI 51.5), with a history of scoliosis, very limited neck extension and small mouth opening. She had 2 prior cesarean sections under general anesthesia (GA), but strongly desired to avoid GA if possible. After lengthy discussion regarding the risks and benefits of regional versus general anesthesia, the decision was made to attempt a continuous epidural catheter technique. With the patient upright the L 1-2 interspace was identified using ultrasound. A 17 gauge Tuohy was advanced using loss of resistance (LOR) technique. LOR to saline was achieved at 9cm and the catheter threaded easily to 13cm and was secured. Following negative aspiration and test dose, the catheter was dosed with a total of 18ml of 2% Lidocaine with epinephrine. A T4 level was achieved bilaterally. The patient was comfortable during the surgery. The block resolved appropriately. She was followed by telephone through postoperative day 11, and was found to have no evidence neurologic sequela as a result of her anesthetic.

Discussion: Patients with KFS are known to have challenging airways due to various abnormalities related to the syndrome. A combination of short neck, severely limited range of motion and a potentially unstable cervical spine make airway management difficult. As a result, most of these patients undergo awake fiberoptic intubation. Women undergoing cesarean section have a unique goal of remaining alert during their surgery. Such was the case with our patient. Neuraxial anesthesia offers this benefit as well as potentially avoiding a difficult airway and neurologic damage from airway manipulation. Regional anesthesia does present its own set of risks. In the event of a high spinal, the airway may require emergent intubation. Given this risk, we chose to perform an epidural and dose slowly monitoring for signs of subarachnoid or intravascular catheter placement. Given the potential for poor spread of local anesthetic, we frequently assessed block height to ensure it was rising bilaterally.

To our knowledge this is the first case report describing the use of an epidural catheter for cesarean section in a patient with KFS. This case report demonstrates that regional anesthesia may be performed safely in this patient population.