CASE PRIMERS

Pediatric Anesthesia Fellowship Program

Tufts Medical Center
Department of Anesthesiology
Division of Pediatric Anesthesia
800 Washington Street, Box 298
Boston, Massachusetts, 02111

CASE:	**Posterior Spinal Fusion and Instrumentation**
	Last Edited: May 13th, 2016 by KALRA
SHORT DESCRIPTION:	***Scoliosis*** is a LATERAL and ROTATIONAL deformity of the thoracolumbar spine as seen in the coronal plane Major goals of posterior spinal fusion surgery include: • Reduction of the abnormal curvature • Prevention of curve progression
SURGICAL TIME	6-8 hours
OR TABLE AND POSITION	Jackson Table Centered in the room
EQUIPMENT SETUP	**Left IV Pole:** Sigma Smart Pumps x 2 (Propofol and Phenylephrine) Medfusion Syringe Pumps x 2 (Amicar and Fentanyl) Hotline Setup with Adult Transfusion Set. Attach stopcock and 30 inch IV extension tubing to end. Standard Adult IV setup (LR/Plasmalyte preferable) **Right IV Pole:** Double Transducer (A- Line and CVP) Carrier 500 cc on micro drip. Added gang of six stopcocks and 30 inch IV extension tubing to end **Baer Hugger Machine** with large adult underbody blanket. This has to affixed with wide tape to the undersurface of the Jackson table once the patient is positioned prone May use a second lower body blanket to cover thighs and legs after patient in prone position. (You will need and extra Baer Hugger machine) **Airway:** Standard airway set up based on age and weight

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	Nerve Stimulator
PATIENT POSITION	Supine on Stretcher – Then Prone after induction, intubation, and line placement
EXPECTED EBL	1/3 to 3/4 Blood Volume
ANTIBIOTICS / REDOSING	Cefazolin for Idiopathic Spines. Triple Coverage (Cefazolin, Metronidazole, Gentamycin) for Neuromuscular Spines
ANESTHETIC TECHNIQUE	**Induction:** IV vs. Inhalation Induction. Secure ETT properly. (Pink/White/Cloth with or without Mastisol Adhesive – Check with Attending for his/her preference) Secure Bite Block with separate piece of tape. Insert OGT and Esophageal Temp Probe. Lube and Tegaderm Eyes securely **Maintenance**: 0.5 MAC Volatile + 100 -150 mcg/kg/min Propofol Fentanyl infusion ?Ketamine infusion
ADJUNCT MEDICATIONS	• Amicar Infusion: Slow initial bolus – 100 mg/kg (Max 5gm). Followed by maintenance infusion during the case – 33mg/kg/hr (Max 1gm/hr) • Phenylephrine Infusion
MONITORING	ASA + A-Line +- CVP
PERIPHERAL AND CENTRAL ACCESS	2 Large bore PIVs + Double /Triple Lumen. In case unable to get large bore PIVs, consider 6 or 7 Fr Cordis introducer/ 8.5Fr Arrow MAC in older patients.

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	Remember, a 7 Fr Double/ Triple Lumen Catheter is not an effective volume line. Hagen–Poiseuille law. Shorter large bore IVs are the best volume lines.
FLUID AND BLOOD REQUIREMENTS	2-4 Units PRBC in the Room. 500 – 1000cc 5% Albumin Crystalloids LR/NS. Consider Plasmalyte to avoid Hypernatremia and Hyperchloremia Midway through case if bleeding is excessive, draw Coags and consider FFP / Platelets
PITFALS	**Hypothermia:** The key is to not let the temperature fall **Hypovolemia and Hypotension:** Stay ahead. It's hard to play catch-up **Hypovolemic Shock:** Avoid going there **Nerve/Pressure Injury/ Eye Injury:** Pad all contact points with gel foam / foam arm rests and ABD Pads. Ensure proper padding and sizing for "Prone View" mirrored head rest
ADDITIONAL NOTES:	**SSEP / MEP Monitoring** by Neurophysiologist **Cell Saver System managed** by Blood Bank Tech
DISPOSITION	PICU For patients with idiopathic scoliosis, who are otherwise healthy, aim to extubate if patient is hemodynamically stable, and blood loss was mild to moderate. Most neuromuscular scoliosis patients are sicker, bleed more, and usually require post op ventilatory support for some time.
ATTENDING PREFERENCES	Check with Attending