Prone Spine Surgery

Setup Checklist

☐ Bite blocks, esoph temp probe, Tegaderm
☐ ETT elbow extender
☐ Sed line (processed EEG monitor)
☐ Foam face plate (thoracic/lumbar sx)

☐ 2nd IV setup
☐ +/- art-line setup

☐ Carrier IVF
☐ Propofol gtt
☐ Sufentanil vs remifentanil vs bolus opioids
☐ +/- ketamine gtt
☐ +/- TXA bolus and gtt
☐ Phenylephrine gtt

Preop	Neurologic exam, assess neck ROM ☐ T/S +/- crossmatch Assess for TXA contraindications
Access	PIV x2, arterial line for high blood loss cases or specific MAP goals
Monitors	*EKG monitors on back*
Induction	Short acting paralytic (or reversed rocuronium) for neuromonitoring
Prone Position Preparation	☐ Tegaderm eyes ☐ bilateral bite blocks ☐ ETT extender ☐ esoph temp probe ☐ +/- Sed line
Anesthesia Maintenance	*For neuromonitoring cases:* propofol TIVA +/- ketamine gtt, avoid precedex gtt
Analgesia	Sufentanil gtt vs remifentanil gtt vs opioid boluses
Intra-Operative Considerations	• Pre-incision TXA bolus followed by infusion • Maintain blood pressure near baseline • Attenuate risk of post-operative visual loss
Extubation	*High volume resuscitation cases:* assess for cuff leak

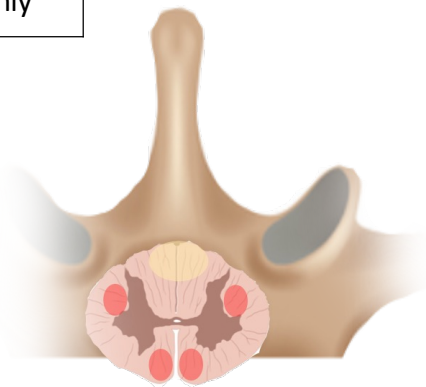
Neuromonitoring

Goal: Identify nerve injury early to prevent permanent damage

Modality	Paralytic	Inhaled Anesthetic
EMG	🚫	OK
Motor Evoked Potentials	🚫	🚫
Somatosensory Evoked Potentials	OK	½ MAC only

*Ketamine gtt ↑ MEP's/SSEP's
*Precedex gtt ↓ MEP's

<u>Neuromonitoring Change Ddx:</u>
- Spinal cord/nerve root injury
- Positioning injury
- Change in anesthetic plane
- Change in DO_2
- Measurement error



Methadone

NDMA antagonism analgesia

- 0.2 mg/kg at case start (max 20 mg)
- Onset 30-60 minutes, duration 6-12 hours
- Prolonged elimination: 15-60 hours
- 1:2 IV:PO conversion

Tranexamic Acid

↓ *EBL, transfusion requirement*

- Bolus dose peri-incision: 10 mg/kg or 1,000 mg
- Intra-op infusion: 1 mg/kg/hr

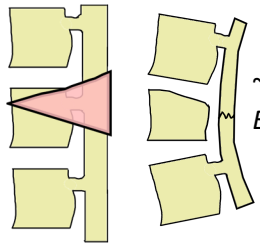
Post-Op Visual Loss

Ischemic optic neuropathy

- Risk factors: male, obesity, anesthesia > 4h, high blood loss
- Prevention (non-evidence based):
  -- BP near baseline
  --Maintain DO_2
  --Colloid for large resuscitation

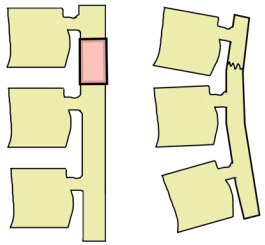
Specific Surgical Techniques

Pedicle Subtraction Osteotomy (PSO)



~ 500 EBL/level
Epidural veins

Smith-Peterson Osteotomy (SPO)



~250 EBL per level