

# Prone Spine Surgery

## Setup Checklist

- Bite blocks, esoph temp probe, Tegaderm
- ETT elbow extender
- Sedline (processed EEG monitor)
- Foam face plate (thoracic/lumbar sx)
  
- 2<sup>nd</sup> IV setup
- +/- art-line setup
  
- Carrier IVF
- Propofol gtt
- Sufentanil vs remifentanil vs bolus opioids
- +/- ketamine gtt
- TXA bolus and gtt
- Phenylephrine gtt

### Pre-Op

Neurologic exam  
 Airway exam (neck ROM)  
 T/S +/- crossmatch  
 TXA candidate?

### Access

2<sup>nd</sup> IV  
 +/- arterial line  
*(for high blood loss)*

### Monitors

*EKG monitors on back*  
 +/- Neuromonitoring

### Induction

*Minimize paralytic for neuromonitoring*

### Position

Prone:  

- Tegadarm over eyes
- Bilateral bite blocks
- Esophageal temp probe
- +/- Sedline
- ETT elbow extender

### Maintenance

*For neuromonitoring:*  

- Propofol TIVA
- +/- ketamine gtt
- Avoid precedex

### Analgesia

Sufentanil gtt  
 vs  
 Remifentanil gtt  
 vs  
 IV opioid boluses

### Extubation

Assess for airway edema (cuff leak)

## Special Considerations

- \* Maintain BP near baseline
- \* Pre-incision TXA bolus and infusion for high EBL cases
- \* Attenuate post-op visual loss risk

## Neuromonitoring

Goal: Identify nerve injury early to prevent permanent damage

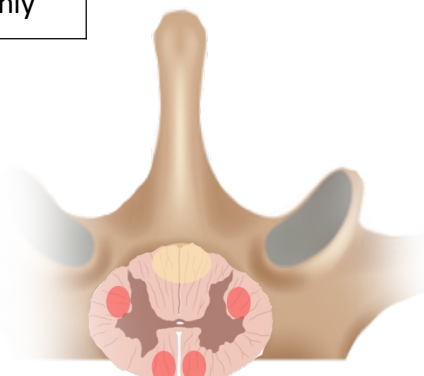
Modality	Paralytic	Inhaled Anesthetic
EMG	⊘	OK
Motor Evoked Potentials	⊘	⊘
Somatosensory Evoked Potentials	OK	½ MAC only

\*Ketamine gtt ↑ MEP's/SSEP's

\*Precedex gtt ↓ MEP's

### Neuromonitoring Change Ddx:

- Spinal cord/nerve root injury
- Positioning injury
- Change in anesthetic plane
- Change in O2 delivery
- 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

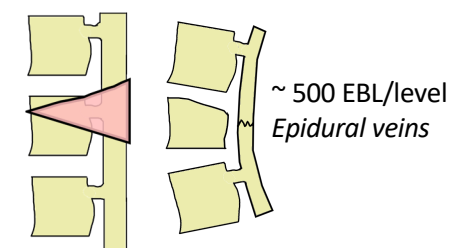
## Post-Op Visual Loss

*Ischemic optic neuropathy*

- Risk factors: male, obesity, anesthesia > 4h, high EBL
- Prevention (non-evidence based):
  - BP at baseline
  - Head NOT below heart
  - Maintain DO<sub>2</sub>
  - Colloid for large resuscitation

## Specific Surgical Techniques

### Pedicle Subtraction Osteotomy (PSO)



### Smith-Peterson Osteotomy (SPO)

