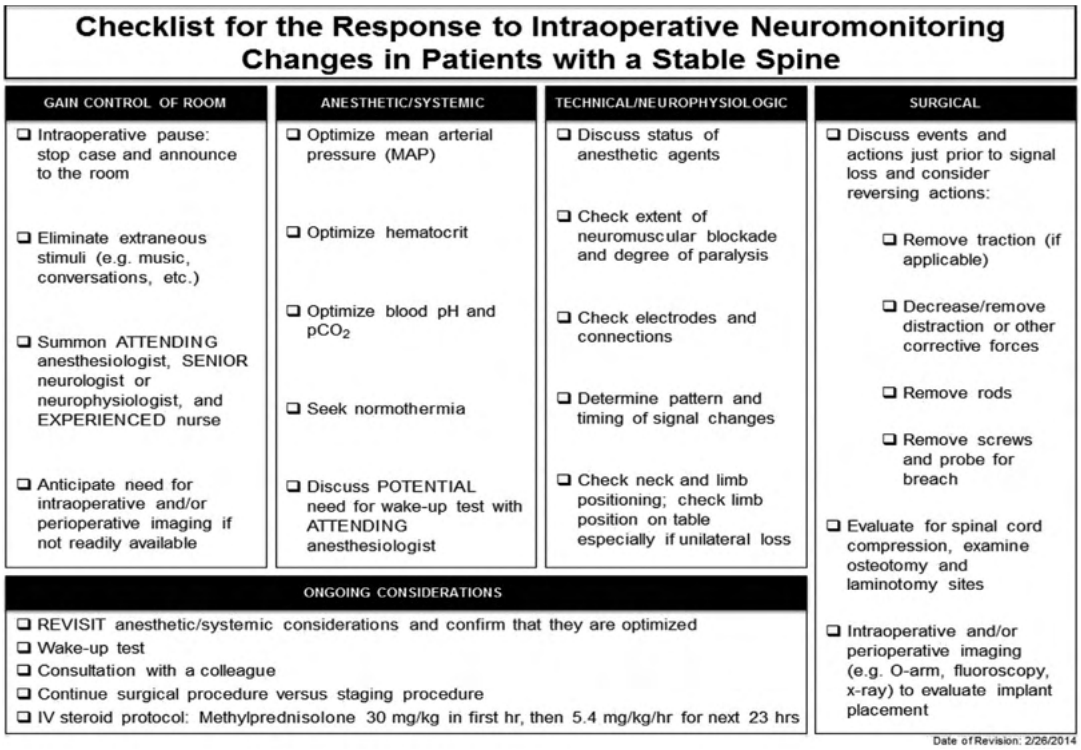
ANESTHESIA SCOLIOSIS PERIOPERATIVE RECOMMENDATIONS

1. PAC: discuss wake up test and awareness under anesthesia. Believe that all scoliosis patients should be referred to Preanesthesia Clinic. If neuromuscular, not idiopathic, consider preop ECHO.
2. ******No premed benzodiazepine ******
3. Premed Tylenol 20 mg/kg PO
4. Pause at the beginning of the case to review with whole surgical team – check list including involving APMS to come into the room to discuss pain protocol (they can join at anytime during the day)
5. Intrathecal morphine when appropriate [dosing at discretion of anesthesia] to be given at the beginning of the case – recommended dosing 5 mcg/kg to a maximum of 250 mcg.
6. No volatile anesthetic use nor nitrous oxide for maintenance of anesthesia until neuromonitoring is completed.
7. Sedline for assessing depth of anesthesia. This has recently been approved for children $\geq$ 5 year of age.
8. Avoidance of bolus dosing medication [steady state anesthesia should be the goal]
9. **TIVA for all cases**. Maintenance with Propofol. Narcotics as per discretion of anesthetist. Ketamine infusion at discretion of anesthesia (no bolus dosing) recommended. Anesthetic gases can be used when neuromonitoring is discontinued. Dexmedetomidine can decrease MEP amplitude and should be avoided and discussed on a case to case basis and considered after neuromonitoring cessation if indicated.
10. TXA bolus and infusion [30mg/kg bolus and 10mg/kg/hr]. Multiple dosing regimens are in the literature. Anywhere between 10-30 mg/kg loading dose and infusion 5-10 mg/kg/hr.
11. Cefazolin 30mg/kg IV q 4 hr.
12. Staff in room for mid-surgical pause:
    a. Post prone positioning
    b. Screw testing
    c. Spinal reduction/distraction
13. MAP elevated to 65 mmHg (juvenile patients) or MAP of 80mmHg in adolescent patients (1,2)
14. Neurologic alert pathway [Spine Deformity 2 (2014) 333-339]. Dr. Borschneck performs his own neuromonitoring.
15. **NSAIDS can be given day of surgery, including ketorolac at end of case**
16. **POST OPERATIVE PAIN CONTROL – OPIOID PCA-IV, Continuous Infusions and NCA-IV on ENTRY POINT. Oral Opioids and co-analgesics will be posted soon.**
    a. Complete Entry point order set for postoperative PCA-IV – no continuous infusion if intrathecal epimorph administered. Consider basal morpine if no epimorph + PCA-IV. Plan to D/C basal opioid POD#1 and D/C PCA-IV POD#2 and start PO Opioids. Avoid SQ in pediatrics
    b. Tylenol x 48 hrs
    c. NSAID x 48 hrs
    d. Baclofen or diazepam PRN for muscle spasm x 3 – 5 days

17. POSTOPERATIVE PRURITUS
    a. Naloxone Infusion
    b. Ondansetron
    c. Benadryl
18. POSTOPERATIVE PAIN CONTROL



Checklist for the Response to Intraoperative Neuromonitoring Changes in Patients with a Stable Spine

GAIN CONTROL OF ROOM	ANESTHETIC/SYSTEMIC	TECHNICAL/NEUROPHYSIOLOGIC	SURGICAL
❑ Intraoperative pause: stop case and announce to the room	❑ Optimize mean arterial pressure (MAP)	❑ Discuss status of anesthetic agents	❑ Discuss events and actions just prior to signal loss and consider reversing actions:
❑ Eliminate extraneous stimuli (e.g. music, conversations, etc.)	❑ Optimize hematocrit	❑ Check extent of neuromuscular blockade and degree of paralysis	❑ Remove traction (if applicable)
❑ Summon ATTENDING anesthesiologist, SENIOR neurologist or neurophysiologist, and EXPERIENCED nurse	❑ Optimize blood pH and pCO_2	❑ Check electrodes and connections	❑ Decrease/remove distraction or other corrective forces
❑ Anticipate need for intraoperative and/or perioperative imaging if not readily available	❑ Seek normothermia	❑ Determine pattern and timing of signal changes	❑ Remove rods
	❑ Discuss POTENTIAL need for wake-up test with ATTENDING anesthesiologist	❑ Check neck and limb positioning; check limb position on table especially if unilateral loss	❑ Remove screws and probe for breach
			❑ Evaluate for spinal cord compression, examine osteotomy and laminotomy sites
			❑ Intraoperative and/or perioperative imaging (e.g. O-arm, fluoroscopy, x-ray) to evaluate implant placement

ONGOING CONSIDERATIONS

- ❑ REVISIT anesthetic/systemic considerations and confirm that they are optimized
- ❑ Wake-up test
- ❑ Consultation with a colleague
- ❑ Continue surgical procedure versus staging procedure
- ❑ IV steroid protocol: Methylprednisolone 30 mg/kg in first hr, then 5.4 mg/kg/hr for next 23 hrs

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(2) Neurosurg Focus 43(4):E8, 2017
(3) Department of Anesthesiology and Pain Medicine at CHEO