LAC NEURO SURGERY: Anesthesia Management

CRANIOTOMY

Brain Tumor, Aneurysm

- Lasix 40 mg IV (.3mg/kg, check BP 1st)
- Dexamethasone 10 mg IV q 2 hrs
- Mannitol 0.5 - 1 gm/kg IV (start right away, not w.o. d/t CHF risk)
- Dilantin (+/-) *per surgeon*
- Pepcid 20 mg IV
- NS
- Antibiotic *per surgeon*
- Hyperventilate to keep $PaCO_2$ ~ 29

SPINE

Cervical, lumbar fusion, laminectomy, etc.

- Solumedrol 30 mg/kg load over 15 minutes, then 5.4mg/kg/hr (2gm/ 250cc NS)
- Pepcid 20 mg IV
- Antibiotic *per surgeon*
- LR is okay

NON-CRANIOTOMY

Transphenoidal approach, Cranioplasty

- Mannitol usually not necessary, but check with surgeons
- Hyperventilation usually not necessary
- Anticipate initial HTN with Transphenoidal (control with Nicardipine/Labetolol)

<u>ALL CASES</u>

- Arterial line
- pIV x2
- Desflurane (per Dr. Zelman) or Isoflurane
- Sufentanil (250 mcg/250 cc NS) IV gtt 0.5 - 1.5 mcg/kg/**hr** (+/- if no SSEP)

  or

  Remifentanil (2 mg/.250 cc NS) IV gtt 0.2-0.4 mcg/kg/min (+/- if no SSEP)
- Propofol IV gtt 50 - 200 mcg/kg/min (+/- if no SSEP)
- Give Albumin early - after the first 500-1000 cc of NS (per Dr. Zelman)

BURST-SUPPRESSION

- Propofol boluses with supplemental Neosynephrine
- Etomidate

  or
- Propofol 200mg/Ketamine 75 mg in 250 cc NS (run w.o. --> Burst-Suppression)

**no propofol use during STUDY case*

Cerebral Vasospasm

Signs & Symptoms

1. Worsening Headache
2. **Hypertension**
3. Confusion

Treatment **(with neurological deficits)**

HHH Therapy

- **H**ypervolemia
  - aggressive IV infusion with crystalloid/ colloid to keep CVP>10 or PCWP 12-20
- **H**emodilution
  - target hct of 33%
- **H**ypertensive therapy
  - **dopa**, dobut, or neo to keep sys BP b/w 160-200

Calcium Channel Blocker

- Nimodipine
- **Nicardipine**
  - 25 mg/250 cc (0.1mg/cc)
  - ~ 50 cc/hr (change Q 5-15” for slow - fast dec in BP)
  - 10mg/10cc - bolus 0.5-1cc for inc BP/ **dec** HR

- Labetolol for inc BP/**inc** HR

Longnecker, Tinker, and Morgan, Principles and Practice of Anesthesiology, 1998, p. 253

Venous Air Embolism

Signs & Symptoms

1. Mill Wheel Murmur (late sign)
2. Pulmonary Gas Changes
   - decreased ETCO2
   - decreased PaO2
   - decreased SaO2
   - **increased** PaCO2
3. Detection of ET Nitrogen
4. Dysrythmias
5. Hypotension
6. Sudden agressive spontaneous ventilations, despite mechanical ventilation.

Treatment

1. Notify surgeon:
   - flood field with NS
   - packs
   - bone wax to boney edges
2. d/c N2O (if being used)
3. 100% O2
4. Aspirate entrained air via CVP catheter
5. Increase IV fluids (to inc venous pressure)
6. Vasopressors to correct hypotension
7. Temporarily compress R/L jugular veins
8. Place pt. in horizontal/LLD position if possible

Morgan & Mikhail, Clinical Anesthesiology, 1996, p. 496
Barash, Clincal Anesthesia, 1997 pp. 722-723
Stoelting & Miller, Basics of Anesthesia, 1994 p. 336