

# INTRACRANIAL ANEURISM CLIPPING

## ANESTHETIC CONSIDERATIONS AND SURGEON PREFERENCES

Updated April 2011

### 1. Lines and Monitoring

- A-line and two quality peripheral IVs, or central line as indicated by patient situation.
- Aspect 5-lead EEG monitoring placed to monitor burst suppression.

### 2. Induction

- Avoid hypertension at all cost
- Fentanyl 4 to 5 minutes prior to induction can significantly blunt response to intubation.
- Esmolol 30 to 40 mg can be added to induction drugs to help avoid hypertension.

### 3. Brain Relaxation

- **Mannitol:** all patients should receive 50 gm (1/2 of 500 ml bag (contains 20 gm/100 ml) rapidly directly after induction. Confirm with surgeon.
- **Hyperventilation:** EtCO<sub>2</sub> in low 20's should be maintained until surgeon notifies us that hyperventilation may be discontinued.

### 4. Seizure prophylaxis

- Confirm with surgeon choice of anticonvulsant. Patients usually receive either fosphenytoin 1000 mg (give slowly) or keppra 500 mg IV directly after induction.

### 5. Barbiturate Coma

- Surgeon may request "burst suppression" directly before actual clipping of aneurysm.
- Please see protocol on SAPA website for full details. Briefly, give 1-2.5 mg/kg propofol to achieve burst suppression on 5 lead Aspect monitor, then maintain burst suppression with propofol drip. Maintaining burst suppression with propofol should aid in early extubation. Be prepared for hypotension after giving these agents, vasoconstrictors may be needed.

### 6. Intraoperative Course

- Muscle relaxation should be strictly maintained. Any patient movement could be deleterious for this type of surgery. Remember that anti-seizure medications shorten duration of muscle relaxants thus requiring more frequent dosing.

### 7. Emergence

- Surgeons prefer patients to not cough or valsalva at end of procedure.
- Deep extubation is desirable, and appreciated by surgeon unless contraindicated by airway issues. May want to place LMA to maintain airway after extubation.

### 8. Additional suggestions for other neuro cases were made by neurosurgeons:

- **Brain Tumor:** all of the above apply except # 5, barbiturate coma.
- **Subdural Hematoma:** all of the above apply, except # 3 and # 5.
- **Spine, myelopathy (cord compression)** #1 and #2 above important; #3 #4 and #5 don't apply.
- **Spine Surgery (general)** muscle relaxation varies by surgeon and case, confirm with surgeon.

### 9. Please note

The above items are only the basics for these procedures. Aneurysms are relatively uncommon and we can help with the surgical stress by playing an active role and providing standardized anesthesia.