MedStar Georgetown University Hospital

Department of Anesthesia

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Minimizing Risk of Perioperative Visual Loss in Major Spine Surgery	9108A
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POLICY:
Perioperative visual loss (POVL) is an uncommon but devastating complication of surgery and anesthesia. POVL is most often associated with head and neck surgery, open heart surgery and surgery in the prone position, especially that involving the spine. A POVL registry (excluding ophthalmic surgery) is maintained by the American Society of Anesthesiologists (ASA) Closed Claims Task Force. Emerging data from this registry and other sources is increasing our understanding of POVL. The ASA has issued a practice advisory based on this data. The policy below will bring our practice into compliance with the ASA advisory.

The practice advisory, entitled *Practice Advisory for Perioperative Visual Loss Associated with Spine Surgery* , can be viewed on the ASA website (www.asahq.org).

POVL associated with spine surgery occurs primarily in adults; therefore, the guidelines below refer only to patients older than 12 years of age

PROCEDURES

1. Risk: The risk of perioperative ischemic optic neuropathy (ION) may be increased in patients who undergo prolonged procedures, have substantial blood loss, or both. Such cases are considered "high-risk."

2. Blood pressure: Systemic blood pressure should be continually monitored in high-risk patients. This implies that an arterial catheter will be used during these procedures. The risk of deliberate hypotension is not known; therefore, use of deliberate hypertension should be determined on a case-by-case basis and agreed upon by both the attending surgeon and the attending anesthesiologist. When deliberate hypotension is not used, prolonged periods of hypotension (MAP < 80% of baseline) should be avoided.

3. Fluid management: A Foley catheter must be used in all high-risk cases (provided that the patient is not anuric). Central venous pressure monitoring should be considered in high-risk cases. Large-volume crystalloid infusions may increase the risk of POVL. Therefore, colloid should be used along with crystalloid to maintain intravascular volume in patients who have substantial blood loss.

4. Anemia: Hemoglobin or hematocrit levels should be periodically monitored during surgery in high-risk patients who experience substantial blood loss. Although severe anemia is associated with POVL, a transfusion threshold that would eliminate the risk of POVL has not been established.

5. Positioning: Direct pressure on the eyes should be avoided. (Direct pressure on the globe is a risk factor for central retinal artery occlusion but not for ION.) The head should be level with or higher than the heart when possible. The neck should be in neutral position for all spine surgery cases (when possible).

6. Staging: Although no studies have examined the impact of staging surgical procedures on POVL, retrospective data establishes a link between POVL and long surgical duration. Therefore, consideration may be given to the use of staged spine procedures in high-risk patients as a means of decreasing the risk of POVL.

7. Postoperative: After a high-risk case, the patient's vision should be assessed when the patient becomes alert (e.g. in the recovery room). If POVL is suspected, urgent ophthalmologic consultation should be obtained. Severe decreases in oxygen delivery (due to anemia, hypoxia or hypotension) should be ruled out. Current evidence does not support the use of antiplatelet agents, steroids or intraocular pressure lowering agents in the treatment of perioperative ION.

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