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Commentary: What does a survey teach us?

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Chung and colleagues¹ present a survey of cardiothoracic/vascular surgeons and intensivists from major Canadian aortic centers regarding spinal cord ischemia prevention and treatment strategies during complex aortic surgery. The authors make a parallel between the findings of their survey and published society guidelines.² There is an overall consensus among the surgeons regarding preoperative assessment of vertebral dominance, left subclavian artery revascularization, spinal drain placement and duration, and deliberate hypertension. Of note, the preferred method of distal aortic perfusion among the respondents is full cardiopulmonary bypass, which may not reflect the practice elsewhere.

The survey demonstrates areas of significant variability in the clinical practice even among the experts in the field. There is a consensus among surgeons (100%) that spinal drains should be used in patients at high risk of spinal cord ischemia; however, only 67% of the intensivists believe this intervention is helpful. The survey is missing a large proportion of the intraoperative care team, because anesthesiologists were not surveyed. The authors make a point that in Canada, there is substantial overlap of intensivists and anesthesiologists, but it is unknown how many of the surveyed intensivists participate in the intraoperative management of these patients. In fact, spinal drain placement has class 1B recommendation for spinal cord protection, and the highest level of evidence among all other interventions.^{2,3}

Surgeons are in agreement about a hemoglobin (Hb) target (>10 g/dL); in contrast, intensivists support conservative transfusion practice (Hb >8 g/dL). Although both values are somewhat arbitrary, the surgeons seem to be more concerned about the detrimental effect of acute

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CENTRAL MESSAGE

Low level of evidence regarding prevention and management of spinal cord ischemia in complex aortic surgery stands behind significant variability in clinical practice.

blood loss anemia on spinal cord perfusion than the intensivists. The authors refer to the TRICS trial,⁴ which concluded that transfusion for Hb less than 7.5 is noninferior than transfusion for Hb less than 9.5 g/dL in adult patients undergoing cardiac surgery. The cited study included mainly patients undergoing coronary bypass or valve surgery and reported a composite outcome, but not spinal cord ischemia. Patients undergoing aortic surgery are a unique fraction of the critical care population, and the authors should use caution when calling for reevaluation of the target hemoglobin, based on studies performed in critically ill patients.

The major contribution of this survey is the “real-world” representation of the current practice as perceived by Canadian aortic experts. It generates more questions than provides answers. The limitation, as in other surveys, is that the responses can be influenced by own experience, recall for negative outcomes, and influence of recent cases.

One undoubted finding of this survey is that the lower the level of existing evidence is, regarding interventions for spinal cord protection, and the higher the degree of clinical practice variability. Best practices regarding optimal arterial pressure, spinal cord perfusion pressure, role of pharmacologic adjuncts and neuromonitoring, amount of spinal fluid drainage, and target cerebrospinal pressure require further investigations.

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Commentary: Spinal cord ischemia following aortic surgery: Survey says?

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On *Family Feud*, a popular North American television game-show, contestants are asked to guess the most common responses to a variety of survey questions. With the famous catch phrase “Survey says...?” the host reveals the most common responses, rewarding contestants for matching answers. Chung and colleagues¹ surveyed surgeons and intensivists across Canada to characterize current practices for the prevention and management of spinal cord ischemia (SCI) in the setting of aortic surgery. Unlike the gameshow, Chung and colleagues¹ found significant variability and lack of consensus in key management areas among the physicians surveyed.

The authors highlight that SCI can be a devastating complication after aortic surgery, yet guidelines for prevention and management are based on limited data, often levels B and C supportive evidence. Currently available guidelines are broad and lack the granularity needed for detailed protocols.²⁻⁴ This has led to individualized institutional algorithms and a void of best practice recommendations. Recognizing this, the authors collaborated with national experts in the field to develop detailed surveys addressing key areas to

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CENTRAL MESSAGE

Prevention and management strategies addressing spinal cord ischemia after aortic surgery are variable. Highly defined guidelines are lacking and based on limited evidence. A survey of clinical practice highlights areas of controversy and points to the need for improved research.

prevent and manage SCI. The comprehensive questionnaires nicely addressed key decision points that arise in the daily management of this patient population, and importantly provide data on real-world clinical practice across a multitude of centers and specialties with survey response rates of more than 90%. The study was not meant to analyze outcomes or provide evidence for best practices; rather, the major influence of this study is in demonstrating the wide variability in managing SCI in these patients. The authors demonstrate a lack of consensus in multiple areas, including transfusion thresholds, staged operations, perioperative management of antihypertension medications, temperature management, and even the effectiveness of lumbar drains—only two-thirds of intensive care unit consultants

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