See Article page 16.

Commentary: Success lies in attention to details when performing open repair of thoracoabdominal aneurysms

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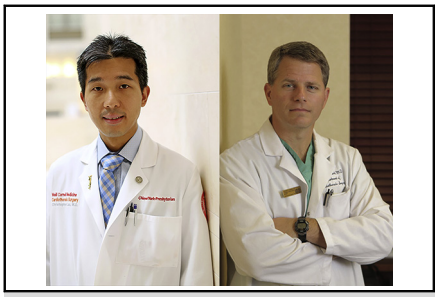

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CENTRAL MESSAGE

Successful repair of thoracoabdominal aortic aneurysms requires meticulous attention to all aspects of the operative procedure and perioperative care.

Chronic thoracoabdominal aortic aneurysm (TAAA) with dissection presents an interesting and complex challenge for surgeons owing to the high degree of variability in the anatomy of the dissected aorta and its branch vessels. Although some success has been made with endovascular interventions in a subset of highly selected patients, the applicability of endovascular solutions remains limited by anatomy. The locations of branch vessels, the primary tear, downstream fenestrations, and landing zones all need to be considered carefully. Even with successful initial repair, the need for reintervention exceeds 30%,[1,2] due in part to the significantly more limited aortic remodeling seen in chronic dissection compared with acute dissection cases, owing to the relatively stiff intimal flap.[3] As such, open repair has remained the gold standard, the most durable surgical approach to chronic thoracoabdominal dissecting aneurysms. In this issue of the *Journal*, Hong and Coselli[4] present their operative and perioperative techniques for achieving optimal outcomes with open repair.

As seen in many areas of subspecialty surgery, the use of the appropriate surgical technique may achieve good results, but meticulous attention to the minute details of the procedure and perioperative care is how one achieves excellent outcomes. This is truer for an extent II TAAA repair than for any other procedure, owing to its profound effect on the circulation and the need to maintain excellent hemodynamics and blood flow to prevent devastating complications, such as spinal cord injury and end-organ ischemia. In addition, although any individual management decision may contribute a fractionally small amount to improving outcomes, the additive effect of these small decisions is measurably improved outcomes.

As Hong and Coselli describe in detail, the process begins with preoperative preparation by carefully assessing the imaging data, which allows for many decisions to be made before arrival to the operating room. Since this is an operation in which speed is important, decreasing the number of intraoperative decisions will be beneficial. In the operating room, the importance of the interactions of management decisions becomes more apparent; for example, our group and the authors do not monitor motor-evoked potentials. In addition, the authors describe their spinal drain management, but ours uses slightly more aggressive drainage of up to 20 mL/h to keep the cerebrospinal fluid pressure below 12 mm Hg. Moreover, the authors use left heart bypass with cold renal and blood visceral perfusion for extent II TAAA, but other groups may use different perfusion techniques, such as circulatory arrest. Finally, the order of progression in the repair procedure is designed to preserve as much vital blood flow as possible at each step of the case: initiation of left heart bypass, cross-clamp application, proximal anastomosis, left heart bypass discontinuation, renal/visceral perfusion, intercostal reimplantation, distal anastomosis, and finally visceral reimplantation.

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Although individual aspects of TAAA repair may differ between groups, what is important is how those individual decisions interact with each other to produce a positive outcome. As evidenced by their complete series,[5] Dr Coselli's group has found a method that works for them. Clearly, every minute detail of the operation has been carefully thought out and perfected over time.

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