Don't worry, I've got it covered

Joshua B. Goldberg, MD, Steven Lansman, MD, PhD, and David Spielvogel, MD

From the Division of Cardiothoracic Surgery, Department of Surgery, Westchester Medical Center, New York Medical College, Valhalla, NY.

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Address for reprints: David Spielvogel, MD, Cardiothoracic Surgery, 100 Woods Rd, Macy Pavilion 114W, Valhalla, NY 10595 (E-mail: David.Spielvogel@wmchealth.org).

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Piffaretti and colleagues¹ deserve praise for compiling an innovative series that may extend the use of simple endografts for the treatment of a subset of thoracoabdominal aneurysms. Their article in this issue of the *Journal* describes the intentional coverage and occlusion of the celiac artery to gain landing zone length in the treatment of type I and V thoracoabdominal aneurysms. Among 17 patients studied, a mean gain of 18 mm in seal zone length was achieved. Except for a 6% (1/17) permanent spinal cord injury (SCI) rate, their outcomes were promising, with no type I or type II endoleaks, no visceral ischemia requiring intervention, and no in-hospital deaths. After a mean follow-up of 36 months, the cumulative freedom from aorta-related mortality was 94%. Importantly, Piffaretti and colleagues¹ outlined their rigorous selection criteria and intraoperative and postoperative management strategies.

Two major concerns with this technique deserve mention. The first is the increased risk of visceral ischemia. Although no cases of visceral ischemia required operative intervention in this series, other studies have reported mesenteric ischemia rates ranging from 6% to 20% with intentional celiac artery coverage.²⁻⁴ Undoubtedly, the careful preoperative assessment and perioperative management regimen used by Piffaretti and colleagues¹ contributed to their promising outcomes; this is a small series, however, and, given the devastating mortality and morbidity ensuing from mesenteric ischemia, 1 or 2 such complications in the next group of patients or in the hands of other teams might color the appeal of this technique.

Second, extending thoracic endovascular aortic repair coverage to the visceral segment increases the risk of SCI by 2 mechanisms. The first is that increasing the number of occluded intercostal segments increases the risk of SCI as a result of limiting inflow to the spinal collateral network.⁵ For the same reason, the risk of SCI is compounded if the extent of coverage includes the subclavian artery, reinforcing the need to maintain subclavian perfusion. The second mechanism, as demonstrated clearly in animal studies, is that the risk of SCI is significantly increased

Left to right: Joshua B. Goldberg, MD, Steven Lansman, MD, PhD, and David Spielvogel, MD.

Central Message

Intentional occlusion and coverage of the celiac artery during endovascular aneurysm repair increases the risk of visceral and spinal ischemia.

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by visceral ischemia.^{6,7} Attributed to an inflammatory effect on the spinal cord vasculature, any visceral malperfusion, even if “minor,” may adversely affect spinal cord perfusion, and even short-term visceral ischemia has been shown to affect the spinal cord permanently.

Teams seeking to adopt this technique should adhere strictly to Piffaretti and colleagues’ rigorous selection criteria and management strategies to mitigate risk. In addition, surgeons should remember that in the modern era open, thoracoabdominal aneurysm repair has low mortality and complication rates, even in patients at high risk.⁸

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