Commentary: Aortic graft infections—A potpourri of pathology without a panacea

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In this edition of the *Journal*, Nissen and colleagues¹ present a single-center study of patients requiring reoperation for thoracic aortic graft infections. Their results from an experienced tertiary institution are favorable in an extremely difficult patient population with a high expected morbidity and mortality. The current study includes 32 patients treated in the course of 22 years, with 19 patients having undergone ascending or arch repair and 13 patients having undergone descending or thoracoabdominal repair as the index procedure. Other reports have shown success, but there is no current accepted method for the treatment of these patients.²⁻¹⁰

Among the significant challenges in presenting such a population are the low occurrence rate and the heterogeneity of the group across multiple defining features. The differing complexities of ascending versus descending repair are highlighted by Nissen and colleagues.¹ There are similarly complexities created when branch vessels, either in the arch or visceral and renal segments, are involved. The causative organisms and physiologic states of these patients may vary widely. In addition, the therapies for aortic pathologies evolved considerably during the study period. Four patients in the study had undergone endovascular repair as the index procedure. These patients may have presented with greater comorbidities and undergone the minimally invasive approach in an attempt to mitigate risk. The grafts used in these cases may also represent an earlier stage of technology.

The reader searching for guidance in the management of an individual patient must be able to extract the elements of the report that are most directly applicable to the case at hand. So, what can the reader take away from the report? First, as Nissen and colleagues¹ point out, this is a complicated group of patients who are infrequently encountered, even at high-volume, tertiary centers. Many of the patients have received antibiotic therapy for some time in advance of their surgical repair, which highlights the importance of maintaining a high degree of suspicion for infection in patients with previous aortic surgery. These patients are likely to benefit from therapy at centers that have not only a robust surgical experience with aortic surgery but also a multidisciplinary team, including members from infectious disease, plastic surgery, critical care, and others. More than 50% of the patients in this series received lifelong antibiotics, and even so, there was a 25% clinically significant reinfection rate.

Nissen and colleagues¹ used a case-control methodology in an attempt to eliminate the effect of a thoracic reoperation from the analysis. Although they found no statistically significant difference between the cases and controls, the numbers are small, and the survival curves demonstrate a higher 6-month mortality in the group with infection. A takeaway from these curves is that if a patient survives the first 6 months after a repair of a thoracic graft infection, long-term survival should be no different than that of a patient undergoing thoracic aortic repair for progression of disease.

Patients who underwent endovascular repair (all in the descending and thoracoabdominal group) fared worse than those who underwent open repair. Nissen and colleagues¹

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⁷ Copyright © 2019 by The American Association for Thoracic Surgery
⁸ https://doi.org/10.1016/j.jtcvs.2019.11.086
point out that this group of patients likely underwent endovascular repair because of a poor physiologic state and that this alone may account for the poor results. The fact that the onset of infection, 24.8 months in the open group and 24 months in the endovascular group, did not differ suggests a similar mechanism of infection. Reducing the risk of this difficult complication is an important area of ongoing study.11

References