INVITED COMMENTARY

How to Best Manage an Aortic Graft Infection is a Never-Ending Story

Anne Lejay [a,*], **Holger Diener** [b], **Nabil Chakfe** [a]

[a] Department of Vascular Surgery and Kidney Transplantation, University Hospital of Strasbourg, France
[b] Department of Vascular Medicine, University Heart Center, Hamburg, Germany

In their systematic review and meta-analysis on the management of open abdominal aortic graft infections, Post et al. highlighted that overall 30-day mortality and 1-year survival were 13.5% and 73.6%, respectively, underlining that open aortic graft infections still remain challenging, life-threatening conditions in current vascular surgery practice.[1] The authors showed that extra-anatomic repair, historically considered to be the gold standard, had the highest 30-day mortality and lowest 1-year survival rates, whereas *in situ* reconstructions with prosthetic material were related to the best results in terms of survival and patency.[1]

However, these results should be interpreted with caution, because selection bias might have played an important role in the outcome. The variable outcome might be attributable to patient, graft, or even peri-procedural factors. Patient factors may include differences in the underlying cause of infection, coexisting comorbidities, and the virulence of infective microorganisms. Graft factors may include graft material and integrity, cryopreservation status, intraoperative graft manipulation, as well as graft infectivity.[2] Procedural factors may include optimal timing of surgery, emergency settings, completeness of infected tissue or material removal, aortic reconstruction technique, variety and duration of antimicrobial regime, as well as shift in operative techniques over time. They also include the experience of the overall workflow of the team associating vascular and general surgeons, infection specialists, radiologists, and anesthesiologists. Indeed, studies included in this systematic review were heterogeneous and poorly reported the severity of infection, operative factors, the type of prosthetic grafts used, or even relevant patient characteristics.[1] One might therefore speculate that *in situ* reconstructions with a new prosthetic material could have been preferably performed in patients with limited infections and less contaminated areas, while extra-anatomic repair would have been offered to frail and older patients, explaining the favorable outcome observed with *in situ* reconstructions.

Another important point is that the authors focused on short-term outcome such as 30-day mortality and 1-year survival, limb salvage, primary patency, or recurrence of infection.[1] However, long-term outcomes such as graft degeneration, limb thrombosis, or later recurrence of infection are very important. It has thus been shown that estimated incidence of para-anastomotic aneurysm formation (either true aneurysm or false aneurysm caused by disruption of the anastomosis from recurrence of infection) and limb occlusion during 10-year follow-up were 12% and 5%, respectively.[3] Heterogeneity of the studies included in this systematic study and the several factors involved make it extremely difficult to get reliable data about long-term outcome, which is of utmost importance.[1] Consequently, findings should be interpreted with care.

In conclusion, how to best manage an aortic graft infection is a never-ending story. Well-designed, high-quality randomized controlled studies should be optimal to provide strong conclusions and high-grade recommendations, but are difficult to set up. We hope the European Society for Vascular Surgery will contribute very soon to help in decision making.

REFERENCES

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* Corresponding author. Department of Vascular Surgery and Kidney Transplantation, Nouvel Hôpital Civil, 1 Place de l'hôpital, 67091 Strasbourg Cedex, France.
E-mail address: anne.lejay@chru-strasbourg.fr (Anne Lejay).

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