

INVITED COMMENTARY

## TEVARs to the North, FEVARs to the South; Here we are, Stuck in the Mid-Term With you ...

Graeme E. McFarland, Adam W. Beck \*

Division of Vascular Surgery, 503 Boshell Building, 1808 7th Avenue South, Birmingham, Alabama 35294, USA

Fenestrated and branched (F/BEVAR) endografts have shown excellent early/mid-term results for degenerative thoraco-abdominal aneurysms (TAAA).<sup>1</sup> Aneurysms secondary to chronic dissection pose unique challenges because of the complex nature of the anatomy, including branch arteries arising from separate lumens, an often narrow true lumen diameter, and the difficult proximal and distal landing zone anatomy, among others. In their article, Oikonomou et al. present the largest mid-term report of F/BEVAR in chronic dissection with TAAA.<sup>2</sup>

The authors should be commended for their high technical success in this challenging population with durable mid-term results, including a mean diameter regression of  $9.2 \pm 8.8$  mm and complete one year false lumen thrombosis in 85.4%. That said, concerns remain over the rate of spinal cord ischaemia (SCI) and the need for adjunctive procedures, such as visceral arterial bypass/re-implantation, highlighting the complexity of these patients. Despite modern SCI prevention methods including CSF drainage, blood pressure augmentation, and staged repair, SCI occurred in 15.5% of patients, with a permanent deficit in 2.8%. Furthermore, the low estimated freedom from re-intervention of only  $52.6 \pm 8.0\%$  at three years, most commonly as a result of type 1b endoleaks at target vessels, continues to be an undeniable concern. This is especially true given the difficulties with appropriate follow up in this patient population. The high re-intervention rate is probably attributable in part to forces applied to the devices over time from remodelling, which may become more important in longer follow up. The authors mention the use of longer bridging stents as a solution to this problem, but the success of this method remains to be seen.

When comparing open and F/BEVAR, the re-intervention rate is perhaps the strongest argument for open repair,

especially given that there are high volume open centres<sup>3</sup> producing excellent results. However, there is no denying the extensive nature and higher morbidity/mortality of open TAAA repair, and F/BEVAR offers tremendous potential benefit if long-term durability can be achieved.

The increasing incidence of dissection,<sup>4</sup> improvements of medical therapy/survival, and late aneurysm formation in up to 40% of medically treated dissections<sup>5</sup> will continue to require further technological advances. While these results are encouraging, questions remain regarding long-term durability, and are particularly important given the frequency of re-intervention, and the younger age typically seen in dissection patients in comparison with degenerative TAAA. We look forward to long-term follow up of these patients in the future.

### REFERENCES

- 1 Eagleton MJ, Follansbee M, Wolski K, Mastracci T, Kuramochi Y. Fenestrated and branched endovascular repair outcomes for type II and III thoracoabdominal aortic aneurysms. *J Vasc Surg* 2016;**63**: 930–42.
- 2 Oikonomou K, Kasprzak P, Katsargyris A, Marques De Marino P, Pfister K, Verhoeven ELG. Mid-term results of fenestrated/branched stentgrafting to treat post-dissection thoraco-abdominal aneurysms. *Eur J Vasc Endovasc Surg* 2019;**57**:102–9.
- 3 Coselli JS, Bozinovski J, LeMaire SA. Open surgical repair of 2286 thoracoabdominal aortic aneurysms. *Ann Thorac Surg* 2007;**83**: S862–4.
- 4 Howard DPJ, Sideso E, Handa A, Rothwell P. Incidence, risk factors, outcome and projected future burden of acute aortic dissection. *Ann Cardiothorac Surg* 2014;**3**:278–84.
- 5 Schwartz SI, Durham C, Clouse WD, Patel VI, Lancaster RT, Cambria RP, et al. Predictors of late aortic intervention in patients with medically treated type B aortic dissection. *J Vasc Surg* 2018;**67**:78–84.

DOI of original article: <https://doi.org/10.1016/j.ejvs.2018.07.032>

\* Corresponding author.

E-mail address: [awbeck@uabmc.edu](mailto:awbeck@uabmc.edu) (Adam W. Beck).

1078-5884/© 2018 European Society for Vascular Surgery. Published by Elsevier B.V. All rights reserved.

<https://doi.org/10.1016/j.ejvs.2018.08.051>