

Commentary: Like most shortcuts, it could be an ill-chosen route



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Central Message

Sometimes, in very expert hands, selecting the right patients for surgery is still the high road to take rather than pursuing less invasiveness at all costs.

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Thoracic endovascular aortic repair (TEVAR) is a treatment modality that has been rapidly embraced for treating thoracic aortic disease due to its less invasiveness, its availability, and its relative easiness of application, but in some cases this can be just a shortcut to follow, and as Washington Irving wrote in the story “The Devil and Tom Walker,”¹ “Like most shortcuts, it was an ill-chosen route.” The present paper, by Tanaka and colleagues,² is clear evidence that sometimes, in very expert hands, selecting the right patients for surgery is still the high road to take rather than pursuing less invasiveness at all costs.

The endovascular approach in chronic aortic type B dissection is still burdened by serious complications, such as endoleak, distal true lumen collapse, retrograde dissection, stroke, stent graft migration, or incorrect deployment.³ In a recent meta-analysis including 8969 patients treated by TEVAR,⁴ the rate of retrograde aortic dissection was 2.5% but with an associated mortality of up to 37%. The incidence of endoleak rose to 8% in case of landing zone 0. There are many issues in treating chronic thoracic aortic dissection, either de novo or residual after type A aortic dissection surgical repair; we cannot be sure that all the branches arise from the true rather than the false lumen, and this can be at the basis of organ ischemia after TEVAR. In case of multiple re-entry tears, TEVAR could be not effective to cover all of them. As already reported in this paper, roughly 70% of patients undergoing TEVAR for chronic distal aortic dissection had aortic diameters that failed to regress.⁵

In some cases, additional branch vessel stenting may be necessary to resolve malperfusion related to static obstruction, and this makes TEVAR not so easy to perform.⁶ In a recent meta-analysis by Gambardella and colleagues,⁷ aortic dissection was the main cause leading to a secondary open aortic procedure (51.2%, 95% confidence interval, 44.4-57.9), with chronic dissection showing a rate of

31.2% (95% CI, 24.5-38.8). This finding confirms as the presence of a thick indurated intimal flap often does not allow full stent expansion, resulting not effective to exclude of the false lumen. Finally, extending the stented aortic segment into the abdominal aorta for persisting malperfusion after TEVAR by implantation of additional uncovered stents distally (the PETTICOAT concept) requires further data collection and evaluation.⁸

The strength of this cohort study² is not only that the authors report outstanding early and late results of open surgery but also that they've identified some subgroups of patients more suitable for surgery. Multivariable analysis found that low estimated glomerular filtration rate, history of thoracic or thoracoabdominal repair, and chronic pulmonary disease were risk factors for greater early mortality; in fact, in those patients without these risk factors, 30-day mortality was very low (2.6%). Even long-term results show the effectiveness of the open surgery approach, with a good survival rate of 67.9% at 5 years, 53.1% at 10 years, and 41.5% at 15 years. Finally, the durability of this surgical procedure is very high, since freedom from reintervention to the treated segment was 98% at 5 years and 97% at 10 years.

However, it is also necessary to stress how these results are not available to everyone, only to dedicated centers with high volumes in the field of thoracic and thoracoabdominal aortic surgery. Recently, a multicenter study⁹ has indeed shown how 30-day mortality strongly correlated with annual case volume, with greater-volume centers having the lowest risk. Hence, these results underscore the need

to identify greater-volume centers because of their improved ability to rescue patients experiencing complications associated with postoperative mortality.

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