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Commentary: Is the time for aortic arch redo-surgery running out?

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Despite the fact that open surgical repair still represents the gold standard treatment for complete aortic arch replacement, it continues to be burdened by high mortality and neurologic complications (5%-23% and 5%-18%, respectively), especially for patients who require redo surgery.¹⁻⁴ Therefore, in the era of endovascular surgery, it is not surprising that hybrid operating rooms, new technologies, approaches, and methods are challenging open surgery, trying to replace it. Less-invasive endovascular procedures, used to treat aortic arch diseases, have clear and undoubted advantages over open surgery, especially in redo cases: (1) re-sternotomy is not required; (2) there is no need for cardiopulmonary bypass; and (3) there is no need for hypothermic circulatory arrest and cerebral protection.

There is no doubt that a patient already treated for acute type A aortic dissection (TAAD) continues to have considerable risk for future aortic reintervention and that re-sternotomy is associated with increased risk for short- and long-term mortality after proximal aortic repair.^{5,6} In the light of these advantages, it is clear how selected high-risk patients with chronic residual TAAD

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CENTRAL MESSAGE

Is the time for aortic arch redo-surgery running out?

could benefit from the endovascular approach, as they often require reoperations to exclude the aortic arch entry tears with consequent enlargement of the pressurized false lumen.

Budtz-Lilly and colleagues⁷ report the current data regarding eligibility for endovascular treatment of dissected aortic arch using an arch inner-branched stent graft, creating the anatomical conditions for a potential further endovascular treatment of the aortic arch and identifying those factors playing a key role in this process. The authors carefully reviewed the angio-computed tomography scans of the patients operated on for acute TAAD, drawing a picture of eligible candidates for future endovascular arch repair as an alternative to open surgery. Beyond this, the strengths of this study are the very large cohort of patients enrolled, with longer follow-up and the exclusion of those patients with well-known ineligibility factors such as the presence of a mechanical aortic valve. Another important key point of the study is the different eligibility between those patients in whom distal aortic clamping was used and those in whom

it was not. In fact, as rightly pointed out by the authors, an open distal anastomosis with hypothermic circulatory arrest may lead to a longer and technically suitable proximal landing zone for future endovascular options for arch repair.

The study shows another factor that could potentially limit a possible endovascular option, the presence of proximal anastomoses, in case of coronary revascularization, can reduce the part of the ascending aorta useful for a proximal landing zone. The authors also show that older age is not associated with noneligibility for a further aortic arch endovascular repair. Finally, this study also confirms that the vast majority of patients requiring further aortic arch repair after surgery for acute TAAD are technically eligible for a further endovascular arch approach. With this awareness, we believe this question is legitimate: is the time for aortic arch redo-surgery running out?

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