


**Technical success is not the same as good patient outcome**

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In the present article, the chimney technology was used for the left subclavian artery (LSA) in order to enlarge the landing zone for thoracic endovascular aortic repair (TEVAR) in 59 cases with thoracic aortic aneurysms (landing zone 2: between the left carotid and the LSA). Xue et al. [1] show the immediate and mid-term outcome data. The authors of the present article need to be acknowledged for presenting their honest data in this challenging patient cohort. As a matter of fact, using the chimney technique, the LSA was patent in most patients during the mid-term follow-up. They conclude that, using this method, it is ‘technically achievable’ to keep the LSA patent.

Besides this technical success, the clinical relevance of this technique needs to be judged with more caution. The immediate and mid-term complication rate of these 59 patients is worrisome: we learned about at least 2 aortic deaths, limb perfusion problem, 2 strokes, a retrograde type A dissection, 9 early plus 8 late endoleaks and 1 spinal cord injury. One more patient died of a non-aortic reason (stroke 19 months after the procedure) and the follow-up comprises all but 3 patients. This outcome seems unfavourable. However, according to the definition of technical success given by the authors, most patients suffering from these complications can be summarized as ‘successfully’ treated. Similar findings on the chimney technique were reported in a summary of the published cases by Hogendoorn et al. [2].

When talking about technically achievable methods, we all know from our daily practice that technical success can differ from patient outcome in the short and long term. As one principle example, ultrasound decalcification of the calcified aortic valve instead of prosthetic valve replacement was performed in several places decades ago. Brown and Davies [3] first reported about excellent immediate results with relief of valvular gradients without causing incompetence. Other surgeons followed, publishing technical success with this technique. Some years later, Craver reported that several initially successfully treated patients needed valve replacement only months or a few years later. Mid-term results in the Mayo Clinic and the Cleveland Clinic were similar [4], and the technique was abandoned for many years. Presently we know that decalcification of the aortic valve should only be done in rare indication and with great caution.

When looking at the chimney technique in TEVAR, it is not advisable to abandon this technique but we should rather identify those patients who might profit from it. Especially, the correlation of the morphology and aneurysm type to the outcome needs more precise data than given in the manuscript.
It is indeed possible that the underlying disease accounts for the high mid-term event rate. The question remains: did the patients pay the price for their severe underlying disease or is the price paid for harmful treatment hunting for ‘technical success’?

Looking at the results of different treatment options for this type of patients, the picture gets clearer. At least three other strategies dealing with this patient cohort are available: (i) coverage of the LSA without revascularization, (ii) surgical revascularization of the LSA and (iii) complete open surgical repair.

(i) Overstenting the LSA with or without its interventional occlusion is a purely endovascular approach and comparable results to the present study can be achieved (but without the Achilles heel of a chimney stent in the LSA). The coverage is associated with good functional long-term status of the left arm [5], but might result in a significant stroke rate [6, 7].

(ii) Selective revascularization of the LSA in order to facilitate TEVAR is the preferred strategy in most centres including ours since data on neurological complications from overstenting the LSA became available [6, 7]. A surgical revascularization of the LSA by the use of a carotid–subclavian bypass or direct transposition can be achieved with a low rate of minor local complications [8] and can effectively avoid severe complications like endoleaks and stroke.

(iii) A pure open surgical repair seems to be the least likely solution in times of minimal-invasiveness. However, open repairs in very demanding aneurysm extensions can be achieved with a low short-term complication rate and convincing long-term durability [9].

With the technology and data given, I doubt we can suggest using the chimney technique for the LSA in TEVAR due to the worrisome complication rate and the existing alternatives. New technical approaches are needed to improve patient outcome and we should strongly focus on better outcome rather than achievable technical fascinations when dealing with it.

REFERENCES

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