

## INVITED COMMENTARY

## Open repair for chronic type B dissection

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Endovascular intervention has revolutionised the treatment of complicated type B aortic dissection. In the acute setting, rupture, malperfusion, and refractory hypertension indicate complicated dissection requiring intervention, which is performed with thoracic endovascular aortic repair (TEVAR). The evidence for TEVAR is based on retrospective studies showing lower morbidity and mortality rates when compared with open surgical treatment for acute complicated dissections. However, most of acute type B dissections are uncomplicated and treated medically with strict control of blood pressure and heart rate. Approximately half of these patients will, with time, develop aneurysmal degeneration of the aorta.

Chronic type B dissection aneurysms are often surgically challenging. The disease affects the descending thoracic aorta or thoraco-abdominal aorta, requiring extensive surgery if open repair is attempted, with significant risk of paraplegia and death. Although TEVAR is increasingly used in the treatment of chronic type B dissection, its applicability in this setting is debated owing to chronicity of the dissection flap and the existence of multiple re-entries affecting aortic remodelling.<sup>1</sup> Recently, use of fenestrated and branched stent grafts for the treatment of chronic type B dissection aneurysms has been reported.<sup>2,3</sup>

In the paper by Fujikawa et al.,<sup>4</sup> the results of open surgical correction of chronic type B dissection aneurysms is reported in a modern Japanese cohort. In this high volume aortic centre, 234 patients with descending thoracic or thoraco-abdominal reconstruction for chronic type B dissection were operated on over a period of 5.5 years. Peri-operative mortality was 3.9% after descending aortic repair (1.7% in elective cases), and 10.2% after thoraco-abdominal repair (8.2% in elective cases). There was no paraplegia after descending repair, while 4.7% of the thoraco-abdominal repairs resulted in paraplegia. No correlation was found between false lumen status and time elapsing from dissection to operation. Re-interventions after open repair were rare.

The mortality and morbidity outcome of this case series is in line with other modern reports of open surgical repair for

chronic dissection aneurysms.<sup>5</sup> These results are to be compared with the outcome of TEVAR for chronic dissection: a systematic review reported a 30 day mortality rate of 3.2% and a paraplegia rate of 0.4%.<sup>1</sup> However, TEVAR is associated with re-interventions in up to one-third of the patients over time.

It can be questioned whether the results of the current report are transferrable to other centres. Most importantly, Fujikawa et al. report that an aortic dilatation of > 50 mm was regarded as an indication for treatment, which is in contrast to the 55 mm diameter threshold commonly used.<sup>4,6</sup> In addition, 16% of the patients treated in this series were operated on despite complete false lumen thrombosis, and the authors state that no patients were turned down for surgery. This is surprising when the treatment is associated with a peri-operative mortality risk of up to 10%.

The current paper adds to the literature regarding modern outcomes of open surgical repair of chronic dissection aneurysms. It also underlines the complexity of this disease, and the variations in practice and management across centres. Chronic dissection aneurysms continue to require challenging surgical treatment, whether performed with open, endovascular, or hybrid repair.

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