Images in Anesthesia

Echocardiography images of endovascular mal-aligned stent grafts

FIGURE 1 Intraoperative transesophageal echocardiography colour flow Doppler of the descending thoracic aorta. This image shows mal-alignment of the stent grafts (A, B) with the presence of an endoleak.

A 64 yr-old male patient presented for endovascular repair of a descending thoracic aortic aneurysm. The preoperative computed tomography scan demonstrated an enlargement of the proximal descending aorta at the tracheal bifurcation level (5.8×6.1 cm). The rest of the descending aorta was also dilated and tortuous. Following induction of anesthesia, a transesophageal

echocardiography (TEE) probe was inserted. Intraoperative TEE identifies the deployment aortic zone, and provides a sensitive means of detecting endoleaks.¹

An initial stent graft was deployed proximal to the left subclavian artery. A second stent graft overlapping the distal end of the first was required to cover the descending aortic thoracic aneurysm. Intraoperative

FIGURE 2 Intraoperative angiogram of the descending thoracic aorta and aortic arch which highlights the overlap junction and the overlap gap (arrow) between the stent grafts (A, B).

TEE detected a mal-alignment of the two stent grafts with an overlapping gap at the posterior wall (Figure 1). Intraoperative angiography demonstrated the mal-alignment (Figure 2). Transesophageal echocardiography colour flow Doppler demonstrated an endoleak at the overlap junction. The presence of a tortuous descending aorta may have contributed to the mal-alignment, and the inadequate seal between endograft components.² Ballooning at the gap junction resulted in a reduction of the endoleak and the mal-alignment. No further intervention was required, and the postoperative course was uneventful.

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