

# Holistic Approach to Type B Dissections: A Unique New Method

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*Peter J. Mossop, MD, Melbourne, Australia*

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Endovascular management of acute and chronic aortic dissection was pioneered early last decade,<sup>1,2</sup> with reported survival rates as high as 100%,<sup>3</sup> and is fast becoming an established treatment modality for complicated aortic dissection. The conventional endovascular approach involves the closure of the primary entry tear by endograft with induction of false lumen thrombosis and subsequent aortic remodeling. Early and midterm results suggest this technique provides protection from aneurysm formation and rupture and in the acute phase improves the downstream branch vessel perfusion. Although this is an elegant approach to a complex pathology, it results in an incomplete repair. False lumen patency usually persists in the lower thoracic and abdominal aorta owing to reentry tears or intimal fenestrations related to branch vessels with the potential for adverse remodeling outcomes in these segments with possible aneurysmal change or rupture.<sup>4</sup>

To address these problems, an alternative more holistic approach to aortic reconstruction has been developed that combines a variety of endovascular techniques in a staged reconstruction of the aorta and branch vessels.<sup>5</sup> In principle, this involves the initial placement of a thoracic endograft (Cook, TX2 or Fenestrated Thoracic Graft) over the primary entry tear in the conventional fashion. Subsequently, dependent upon the extent of residual compression of the downstream true lumen, bare stenting of the thoracic and abdominal true lumen may be performed using a modified Gianturco Z stent (Cook, TXD Thoracic Endovascular Stent). Secondary reentry tears are subsequently identified on follow-up imaging, and dependent upon the site of the reentry, additional aortic true lumen endografts or branch vessel covered stents are deployed to further reduce false lumen inflow and precipitate thrombosis. Aortic endografts for reentry tear closure include thoracic body extension (TBE) grafts and customized fenestrated tube grafts. Suprathoracic and mesenteric branch vessel reentry tears are treated with balloon expandable or self-expanding covered stents (V12, Symbiot), whereas iliac reentry tears are closed using standard Zenith iliac limb extension pieces or iliac bifurcated device.

Although experience is early, the safety and feasibility of the technique is suggested by low morbidity and high success rates achieved in a series of selected patients. Hence, although the conventional endovascular approach to aortic dissection has demonstrated advantages over medical and surgical treatments alone, more holistic total aortic and branch reconstruction is possible and is illustrative of a potential evolution of endovascular therapy for aortic dissection.

## References

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