

Paving the Right Road?



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Masada et al. describe an interesting approach to the management of transverse arch and proximal descending thoracic aortic aneurysm resulting from chronic aortic dissection after repaired type A aortic dissection.¹ Their Marfan patient had undergone type A dissection repair with ascending replacement (13 years prior); followed by redo aortic root replacement using a mechanical valved conduit (5 years prior); and, finally, a distal descending open thoracic aneurysm repair (3 years prior). By their description, the patient was high risk for a fourth open aortic intervention as she was very frail (weight of only 35 kg) and disabled (wheelchair dependent). As the anatomy was suitable: (1) a single, large fenestration located in the distal ascending aorta, beyond the prior synthetic graft; (2) the great vessels arising from only the true lumen; and (3) a distal landing zone comprising of Dacron graft; the authors settled on an endovascular approach. They paved the false lumen using thoracic endovascular stent graft, from the transverse arch to the prior descending thoracic Dacron graft, and then placed a second stent graft distally in the true lumen to prevent true lumen collapse by the paved false channel. This created their “double-barreled” endovascular technique.

With good intentions, the authors are to be commended for describing their approach. However, a few important concerns must be noted. The use of endovascular stent grafts may be employed in patients with Marfan syndrome—but only when the landing zones are in prosthetic graft.² In this case, the descending thoracic Dacron graft provided a stable distal landing zone, but the proximal portion of the stent graft was deployed at the opening of the fenestration in the distal ascending aorta, in native aortic tissue. Will this create an adequate seal? Will an endoleak occur? Will the false lumen still be pressurized? Will this lead to compression of the great vessels? Although this may have been appropriate in this selected patient, general application of this approach is not suitable in patients with heritable thoracic aortic disease.

There is little question that few surgeons, if any, would have offered this patient an open transverse arch repair. The same could also be said for endovascular repair. Did this “double-barreled” endovascular intervention improve this patient's survival? The goal of most endovascular interventions for chronic dissection is to exclude the false lumen in order to promote aortic



Image of an explanted stent graft from prior aneurysm repair.

Central Message

The authors should be commended for providing another method for addressing chronic aortic dissection complicated by aneurysm. However, when considering the double-barreled endovascular technique, one should remember the proverb, “The road to hell is paved with good intentions.” Or, maybe, stent grafts.

remodeling. In Figure 2, it appears that the false lumen was already thrombosed, and although the overall thoracic diameter was enlarged, it was not reported whether the aneurysm was enlarging. If it was not enlarging, many would have just observed this patient, appreciating that her long-term survival was limited. So, did paving the false lumen with a stent graft alter the natural history of this patient's aorta? Likely, not.

Despite these critiques, the authors should be commended for providing another method for addressing chronic aortic dissection complicated by aneurysm. As opposed to the generally accepted principle of excluding the false channel in chronic aortic dissection, the authors are promoting flow in the false channel—but in a controlled fashion with the intention of reducing false lumen pressure by paving the “road” with a stent graft. However, when considering the “double-barreled endovascular technique,” one should remember the proverb, “The road to hell is paved with good intentions.” Or, maybe, stent grafts.

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