

Endovascular repair of a symptomatic aortic dissection with a preloaded t-Branch stent graft

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The aneurysmal degeneration of chronic aortic dissections remains a challenging clinical entity. We present the endovascular treatment of a symptomatic residual type A dissection, which was initially treated 6 years prior with an ascending aortic repair, thoracic endovascular aneurysm repair, and stenting of her left renal artery, infra-renal aorta, and bilateral common iliac arteries. Patient consent was obtained for publication of this clinical case and corresponding imaging.

Upon presentation with severe back pain, a computed tomography angiogram demonstrated aneurysmal degeneration of her chronic dissection, measuring 85 mm in the distal arch and 64 mm in the visceral aorta. All visceral vessels originated from the false lumen, with a single large entry tear at the level of the celiac artery. Due to the symptomatic nature of this aneurysmal degeneration, the decision was made to repair the larger proximal segment of the aorta using a Thoraflex Hybrid device (Terumo Aortic, Sunrise, FL), and subsequently, the remainder of the aorta was treated via an endovascular approach using a pre-loaded t-Branch stent graft (Cook Medical, Bloomington, IN).

The key challenges to an endovascular approach in this patient included: (1) previous bare metal stenting of the infra-renal aorta, left renal, and bilateral common iliac arteries; (2) all four visceral vessels originating from the false lumen; and (3) a single re-entry tear at the level of the celiac artery. To facilitate cannulation of the visceral vessels, the t-Branch device was placed in the false lumen at the visceral level by creating a second re-entry tear distal to the Thoraflex device. After successful completion of this procedure, she has had follow-up computed tomography imaging at 1 and 3 months, demonstrating patency of all bridging stents, no endoleak, and a reduction of the aortic diameter from 85 to 67 mm in the thoracic segment and 64 to 50 mm in the visceral segment.

In conclusion, we present the successful endovascular treatment of a complicated chronic aortic dissection with a significant reduction in residual sac diameter at 3 months. The endovascular treatment of chronic aortic dissections needs to be carefully tailored to the individual patient anatomy; however, given appropriate preoperative planning it can provide an effective result.

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The [Supplementary Video](http://www.jvscit.org) for this article may be found online at www.jvscit.org.

Author conflict of interest: SH has been a paid consultant for Cook Medical, GE Healthcare, and Bentley.

Additional material for this article may be found online at www.jvascsurg.org.

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