DELAYED STAGED TEVAR FOR STANFORD TYPE B DISSECTION IN A HEART TRANSPLANT RECIPIENT: A FOUR-YEAR SURVIVAL CASE REPORT

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INTRODUCTION

Stanford type B aortic dissection in heart transplant recipients is exceedingly rare, and optimal timing of intervention remains undefined. We present a unique case of a woman who developed an extensive thoracoabdominal dissection three months after orthotopic heart transplantation (OHT) and was successfully managed with delayed, staged endovascular repair nearly three years later, resulting in long-term survival. This case highlights the feasibility of prolonged medical management followed by complex aortic repair in immunosuppressed patients with hostile anatomy.

A 40-year-old woman underwent OHT and intra-aortic balloon pump removal in October 2020 for non-ischemic cardiomyopathy with a history of valvular disease, chronic kidney disease and prior sternotomy. Three months later, she presented with chest and back pain. CTA revealed a Stanford type B dissection beginning distal to the left subclavian artery, extending through the thoracic and abdominal aorta into the iliac arteries. Celiac, SMA, and renal arteries arose from the true lumen; the IMA and an accessory renal artery arose from the false lumen.

Over 2.5 years, she remained clinically stable with strict impulse control. Serial CTA demonstrated progressive aneurysmal degeneration: proximal descending thoracic aorta enlarged from 36 mm to 82 mm, with increased dilation of the common hepatic artery and persistent false lumen perfusion. Representatives of the pre-intervention CT angiogram can be seen in figures 1 and 2. Given symptomatic progression, a staged approach was pursued.

She underwent left carotid–subclavian transposition to preserve vertebral flow, followed three weeks later by TEVAR with thoracic branch endoprosthesis (TBE). A candy plug and Amplatzer device were deployed to occlude false lumen flow. Arch and descending thoracic aortography confirmed successful exclusion.

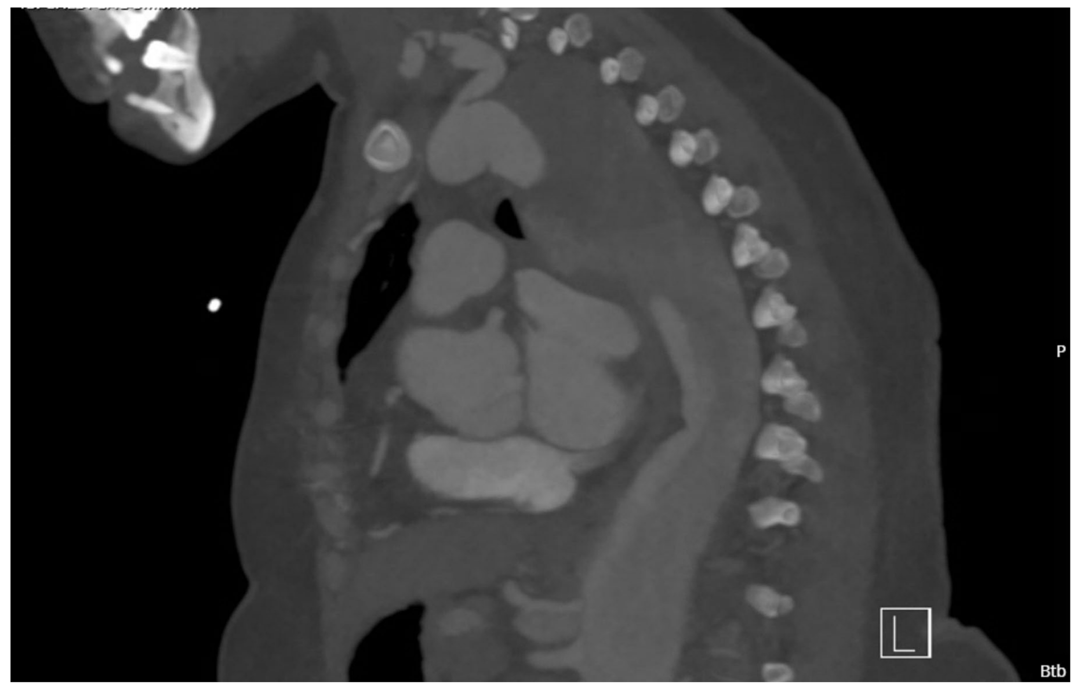

Figure 1. Sagittal image taken from the patients pre intervention CT angiogram demonstrating a Stanford type B aortic dissection with enlarging thoracic aortic aneurysm.

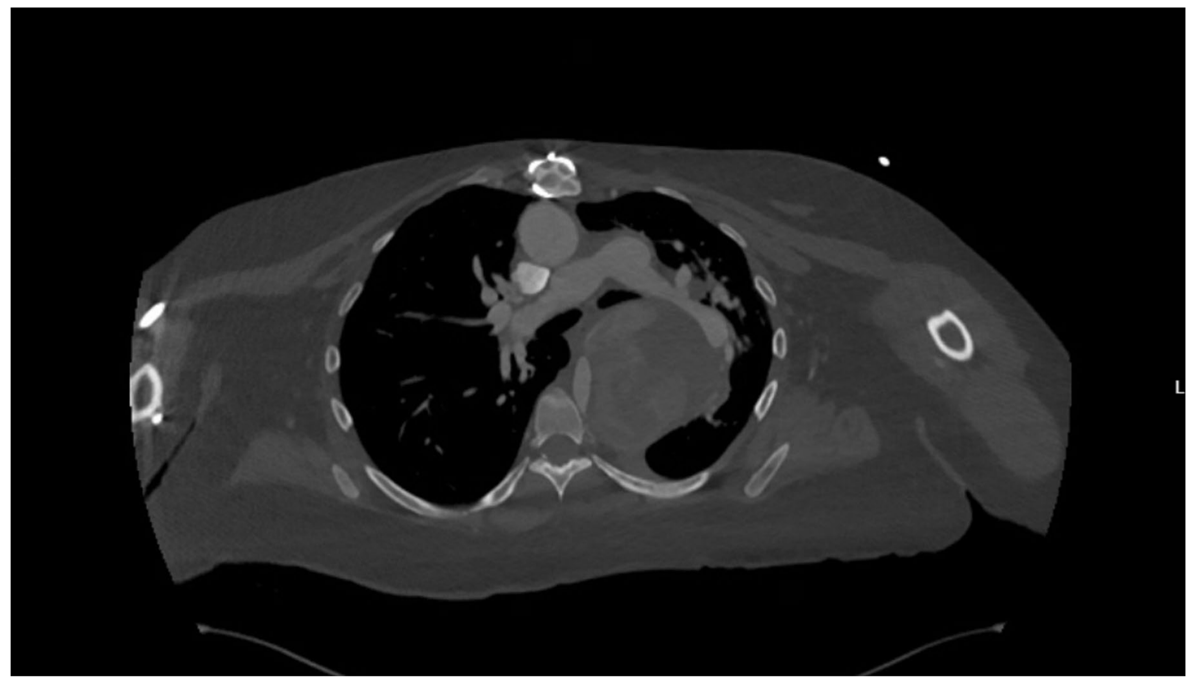

Figure 2. Axial image taken from the patients pre intervention CT angiogram demonstrating a Stanford type B aortic dissection with enlarging thoracic aortic aneurysm.

The procedure was successful without intraoperative complications. Post-TEVAR imaging confirmed patent great vessels, preserved visceral perfusion, and no evidence of significant endoleak (figures 3-6). The false lumen progressively thrombosed, with partial remodeling of the thoracic aorta. Follow-up over 18 months demonstrated stable residual abdominal dissection without propagation. The patient continues to do well more than four years post-transplant without any allograft complications and with stable thoracic aortic imaging.

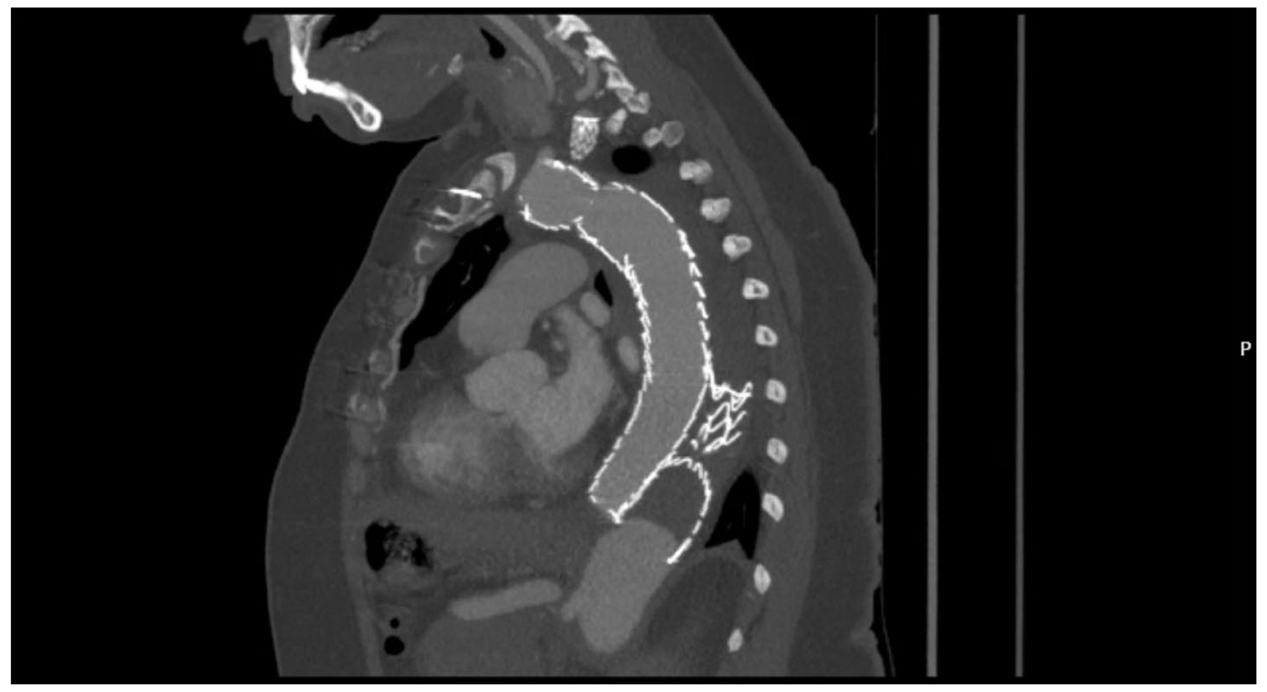

Figure 3. Sagittal image obtained from the CT angiogram completed 18 months following successful TEVAR. There is expansion of the aortic true lumen with thrombosis of the false lumen.

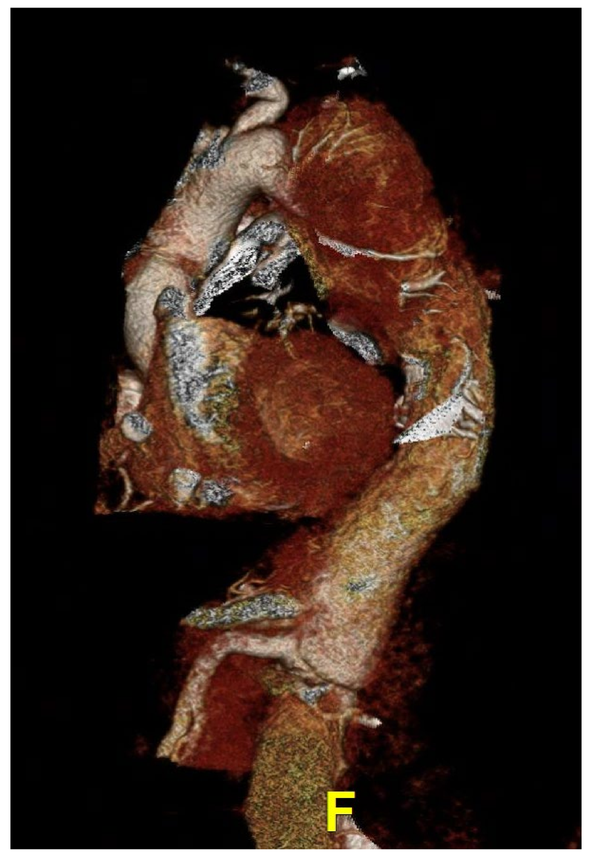

Figure 5. Sagittal 3-D reconstruction of the patient's pre-operative imaging demonstrating a type B aortic dissection with enlarging thoracic aortic aneurysm.

Figure 4. Axial image obtained from the CT angiogram completed 18 months following successful TEVAR. There is expansion of the aortic true lumen with thrombosis of the false lumen.

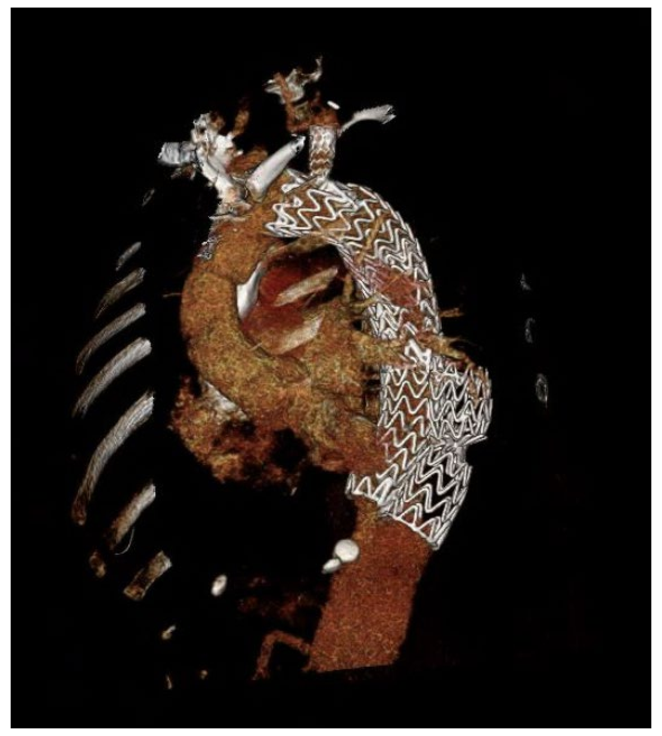

Figure 6. Sagittal 3-D reconstruction of the patient's thoracic aorta following TEVAR.

This case demonstrates delayed staged endovascular repair is a viable and durable option in heart transplant recipients with chronic type B dissection and expanding aneurysm. Careful surveillance, multidisciplinary coordination, and individualized timing of intervention allowed for graft preservation, visceral perfusion, and long-term survival. To our knowledge, this is a rare case of successful thoracic branched endo-grafting in a post-OHT patient with complex dissection anatomy.