Fenestrated Endovascular Repair of a Thoracoabdominal Aortic Aneurysm and Splenorenal Bypass in a Patient with Prior Dissection History

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Introduction. Thoracoabdominal aneurysms are rare and highly complex in their pathophysiology. Although surgical open repair was the historical mainstay, no standardized repair approach exists, and treatment requires an individualized strategy.

Methods. We present a 57-year-old male who underwent a staged fenestrated endovascular aortic repair (FEVAR), which included a splenorenal bypass for left kidney salvage. The patient had an extensive cardiovascular procedural history, including coronary artery bypass grafting (CABG), pacemaker implantation, type B thoracic aortic dissection repaired with thoracic endovascular aortic repair (TEVAR) six years prior, and a recent open aortic root and arch reconstruction for type A dissection. A surveillance computed tomography (CT) scan revealed degeneration of the type B dissection into a primarily infrarenal aneurysm and extension into the left common iliac artery. First, a splenorenal bypass was performed between the splenic and left renal arteries. Three months later, a fenestrated endograft was deployed, incorporating a celiac branch and fenestrations for the superior mesenteric artery (SMA) and right renal artery.

Results. Post-operative computed tomography angiography (CTA) revealed a type II endoleak from a lumbar artery and a nonflow-limiting dissection distal to the celiac artery stent graft. Follow-up imaging confirmed a patent repair with no significant aneurysm progression or left common iliac artery changes. The patient remains stable and continues surveillance with six-month CTAs.

Conclusions. This case highlights the complexity of thoracoabdominal aneurysms and the importance of individualized surgical planning. While endovascular techniques continue to evolve, careful patient selection and close postoperative surveillance remain critical to optimizing outcomes.