Thoracic Endograft Explant Images

A rare look at stent healing 2 years after thoracic stent graft implantation.

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Little information is available regarding the healing of thoracic endografts after deployment. Explant analysis of devices is limited and infrequent. We recently encountered a case for which this was possible, and we share the details of the patient's disease and therapeutic course here, as well as images of the explanted graft.

The patient was a 53-year-old man with an acute descending thoracic aortic dissection and visceral ischemia who underwent Valiant thoracic endograft (Medtronic, Inc., Minneapolis, MN) exclusion of the entry tear with restored flow to the visceral vessels and lower extremities. At the time of presentation, the patient had a white blood cell count of 37,000. After the endograft deployment, he underwent colon resection and otherwise had an uneventful recovery. Approximately 8 months after the initial intervention, the patient was found to have continued flow in the distal portion of the dissection above the visceral vessels, and two additional Talent thoracic devices (Medtronic, Inc.) were added to the original Valiant thoracic endograft to cover the remaining portion of the descending thoracic aorta with the open wire of the distal cuff extending over the celiac artery.

Subsequent follow-up of the patient beyond computed tomography 1 day after the second intervention was not possible because the patient declined further assessment. He was reported by family members to have returned to heavy drug use and died 8 months following the second intervention. At postmortem examination, the endografts were intact with thrombosis of the false lumen to the level of the visceral segment with no enlargement of the infrarenal aorta. There was an ascending aortic dissection with hemopericardium as the cause of death. The type I aortic dissection ended approximately 1 to 2 cm distal to the proximal end of the Valiant device with no association between the stent struts of the device and the dissection.

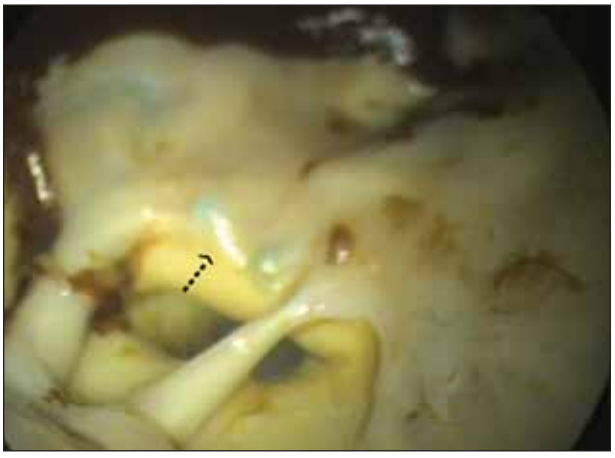

Figure 1. Proximal fabric-covered portion of the Valiant thoracic endograft (arrow) adjacent to the carotid artery orifice with the stent wires crossing the carotid origin.

Figure 2. Distal Talent thoracic cuff fixation with stent wires crossing the celiac artery orifice.

Endoscopic inspection of the specimen demonstrated incorporation of the stents extending over both the common carotid and celiac arteries with apparent endothelization of the stents as they crossed the vessel orifices (Figures 1 and 2).

The figures show the open wire proximal configuration of a Valiant thoracic endograft covering the carotid artery 24 months after implantation and the open wire of a Talent thoracic cuff covering the celiac artery at 8 months postimplant in the same patient. ■

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