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3-Vessel Fenestrated Repair of 6cm Thoracoabdominal Aortic Aneurysm Repair after a Chronic Type B Dissection

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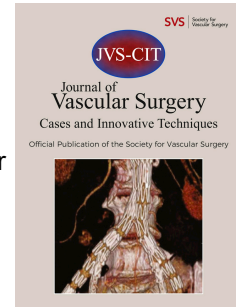
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21 MA, Sept 2020

1 Experience with fenestrated endovascular aortic endograft (FEVAR) in the treatment of post
2 dissection aneurysms remains challenging. A 49-year-old male with a history of type A
3 dissection repair (ascending tube graft) presented with a residual 6-cm expanding extent III
4 thoracoabdominal aortic aneurysm (TAAA). Our objective was to perform a 3-vessel FEVAR
5 with a custom-made endograft with preloaded wires for each fenestration. Serial deployment
6 technique was utilized. This technique allowed us to cannulate each target artery from above
7 while keeping the rest of the fenestrated endograft below each fenestration still in the sheath. by
8 keeping the endograft constrained, creates space outside of the endograft which is key to
9 facilitate catheter/wire mobility and subsequent target artery cannulation.

10 A custom-made fenestrated endovascular aortic endograft was designed on the basis of
11 measurements obtained from high-resolution CTA images on a three-dimensional workstation
12 using standard centerline flow orthogonal techniques (TeraRecon, Foster City, Calif). The graft
13 design included fenestrations to the celiac artery, SMA, and right renal artery (RRA). The main
14 body fenestrated graft was designed with a modified preloaded delivery system with a single
15 diameter reduction tie. Intraoperative 3D-3D fusion imaging was performed. We utilized IVUS
16 to confirm true lumen presence. Proximal and distal seal were obtained in non-dissected vessels
17 proximal and distal to the dissection. Main body fenestrated graft was delivered via groin using
18 serial deployment technique. Cannulation of all target arteries was performed without use of any
19 reentry device or needle puncture of the septum. Balloon-expandable bridging stent grafts were
20 deployed through the fenestrations to the celiac, SMA and RRA. Completion angiography
21 showed expansion of true lumen and patent visceral branches. The 1-month surveillance imaging
22 demonstrated excellent stent graft architecture, no evidence of endoleak and favorable aortic
23 remodeling.

1 FEVAR is feasible option for patients with chronic type B aortic dissections with
2 TAAAs. Serial deployment, by keeping the endograft constrained, creates space outside of the
3 endograft which facilitates target artery cannulation in narrowed true lumen.

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6 publish.

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8 images in our video from the book Endovascular Aortic Repair.