

A dissection ... of the Dacron?



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Video clip is available online.

Treatment for ascending aneurysm is replacement with a Dacron graft to reduce lifetime risk of acute aortic syndrome. While pseudoaneurysms may develop at graft suture lines, typically the replaced segment of aorta is spared from future dissection. We recently encountered a case that demonstrated this may not always be true.

A 64-year-old female patient was referred for Bicuspid Aortic Valve syndrome including a 7.1-cm ascending aortic/proximal arch aneurysm and severe aortic insufficiency with dilated cardiomyopathy. The subject provided informed written consent for the publication of their study data; institutional review board approval was not required. She underwent bioprosthetic aortic valve replacement and ascending aorta/hemiarch replacement using a 30-mm Gelweave Dacron graft (Vascutek). She was started on routine aspirin monotherapy from the first postoperative day. She had an unremarkable recovery and was seen back for routine surveillance imaging 9 months postoperatively, at which time an apparent dissection flap was seen in her Dacron graft. As the patient was asymptomatic and the flap limited to the Dacron-replaced segment with no involvement of native aorta, we thought the finding might represent motion artifact on the nongated computed tomography angiography study. A gated computed tomography angiography was therefore ordered but not



Aorta at 9 and 13 months postoperatively showing pseudo-intimal Dacron graft dissection.

CENTRAL MESSAGE

Dacron grafts develop a pseudo-intima as endothelial cells repopulate the wall of the graft. This can be undermined and elevated in a similar manner to native intima, appearing like a dissection flap.

obtained until 4 months later due to pandemic-related delay. The repeat study demonstrated an identical finding (Figures 1-3 and Video 1), thereby ruling out motion artifact. The flap measured 62 mm in length, 30 mm in width, and 2 mm in thickness.

How did this happen? Dacron grafts develop a pseudo-intima as endothelial cells repopulate the wall of the graft.¹ Review of the literature revealed several previously reported cases of this pseudo-intima being undermined and elevated by the blood column in a similar manner to native intima. Although not present in the current case, the pseudo-intimal flap may cause obstruction, which has been previously described in replaced segments of descending/abdominal aorta.²⁻⁴ The interval between surgery and diagnosis in these previously reported cases ranged from 2 to 25 years. To our knowledge, pseudo-intimal dissection has not been described in Dacron-replaced ascending aorta until now. In addition to confusing imaging findings, pseudo-intimal dissection has been implicated as the cause of embolic events.⁵ Our patient remains asymptomatic and clinically well now 3 years postoperatively, continuing on aspirin monotherapy.



FIGURE 1. Coronal reconstruction computed tomography angiography images of the aorta at 9 (left panel) and 13 (right panel) months postoperatively demonstrating pseudointimal Dacron graft dissection. Note that the pseudointimal flap is limited to the Dacron-replaced segment of aorta.

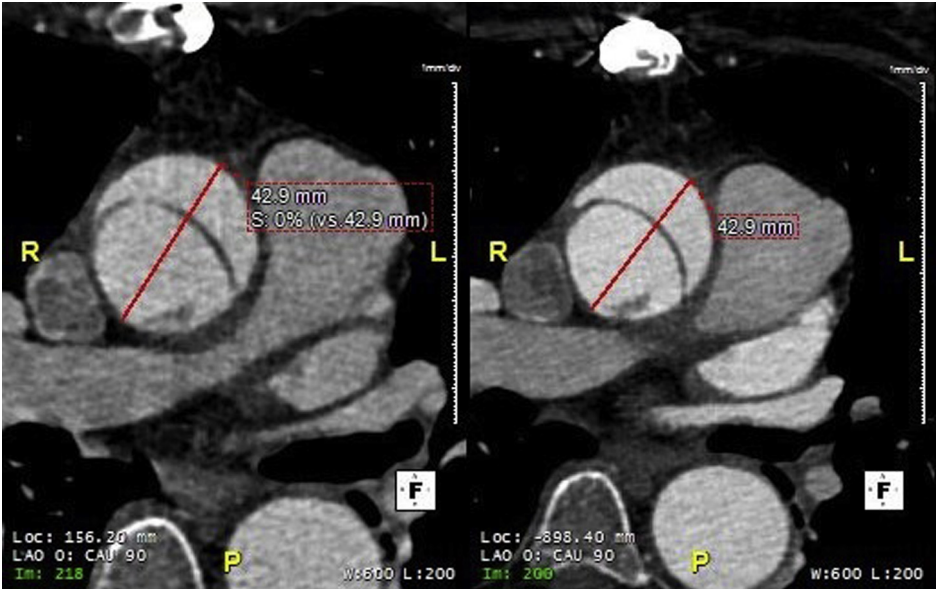


FIGURE 2. Axial computed tomography angiography images of the aorta at 9 (left panel) and 13 (right panel) months post-operatively demonstrating stable pseudointimal Dacron graft dissection.



FIGURE 3. Postoperative 3-dimensional computed tomography angiography reconstruction of the aorta with pseudointimal flap in Dacron-replaced segment indicated (arrow).

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VIDEO 1. Postoperative 3-dimensional computed tomography angiography reconstruction of the aorta with pseudointimal flap. Video available at: [https://www.jtcvs.org/article/S2666-2507\(22\)00241-3/fulltext](https://www.jtcvs.org/article/S2666-2507(22)00241-3/fulltext).

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