Update on Extensive Flap Disruption (Fenestration) to Treat TBADs. Why it Works by Equalizing Pressure in the 2 Lumens

Ramon Berguer MD, PhD, Ann Arbor, Michigan
Juan Parodi MD, Buenos Aires, Argentina

In 2007 IRAD reported that patients with chronic aortic dissection died from aneurysmal rupture 2.5 X more frequently when their FL was partially thrombosed than if the FL was fully thrombosed or fully patent.

The wall that remains after endarterectomy of the aorta has the same thickness as the false lumen outer wall of a dissection. But no aneurysms have been reported after thousands of aortic endarterectomies.

A tear in the septum larger than 250 mm$^2$ prevents any difference in pressure between FL and TL and hence avoids extra tension on the FL wall.

28 patients had a surgical fenestration (septectomy) for complicated AD (and no graft): None developed an aneurysm after 12-year follow-up.
Our catheter glides over 2 guide wires that have been placed in the false and true lumena. The guidewires diverge as the catheter approaches the septum and the flexible lips of the catheter open exposing the septum to the cutting element.

Septotomy in a perfusion model of aortic dissection. The flap is mimicked with chicken skin.

Transfemoral aortic septectomy (animation)

FDA has placed the development of this device in the “breakthrough” category. Expect Human trials to begin in the spring 2020 at the U. of Texas, Houston. PI is Dr Kristofer Charlton-Ouw.