

Physician - Aortic (Thoracic) Pathologies and Surgery/Endovascular Interventions

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Novel "DR MÇ" Technique for the Distal Anastomosis of Hemiarc Replacement Surgery for Acute Type A Aortic Dissection

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Objective: This study aimed to define a novel technique to ensure the safety of distal anastomosis in acute type A aortic dissection, a condition with many possible complications.

Methods: The "DR MÇ" technique consisted of two components: reinforcing the wall of the dissected aorta and aorta-graft diameter matching. The first technique was applied in our clinic, but the second method had not yet been tested. First, a Teflon band was sutured around the outer wall of the aorta, leaving 5 mm of the aorta at the open end to later contribute to hemostasis during anastomosis. Afterward, the graft was sutured to the aorta; however, the sutures were closer to the anastomosis than to the fixing sutures of the Teflon band. This prevented the tearing of the aorta by distributing the axial forces on the aorta and the anastomosis. The adjustment of graft diameter for the aorta was done accordingly; the graft was cut in an oblique pattern, and an extra elliptical piece was sutured to one side of the graft. This method ensured durability (narrowing of the dissected aorta could cause tearing), and the remaining parts of the graft at the outer side of the anastomosis provided extra hemostatic support.

Results: Mortality was often caused by bleeding from the suture points covered by the Teflon. In our center, this method was applied in an attempt to provide better results; however, the sample size was insufficient to provide statistically significant results.

Conclusion: In acute type A aortic dissection, the endurance of aortic tissues is impaired, and therefore, conventional anastomosis may not be enough for hemostasis. This technique is a safer approach for aortic tissue endurance.

Keywords: Anastomosis, aortic dissection, ascending aorta, thoracic aorta.

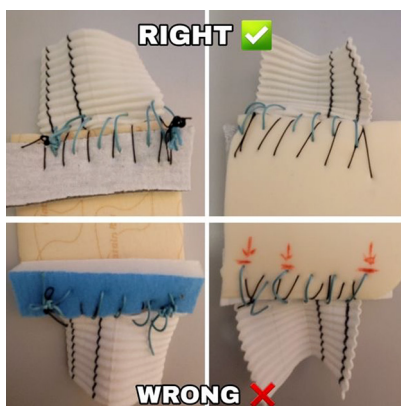


Figure 1. The black suture is the fixing sutures for the Teflon band to the outer wall of the aorta, the green sutures are the anastomosis. Note that the green sutures are more distal to the black sutures to evenly distribute the suture's axial forces, preventing the tearing of the aorta. The red arrows are the places expected to tear with the wrong technique.

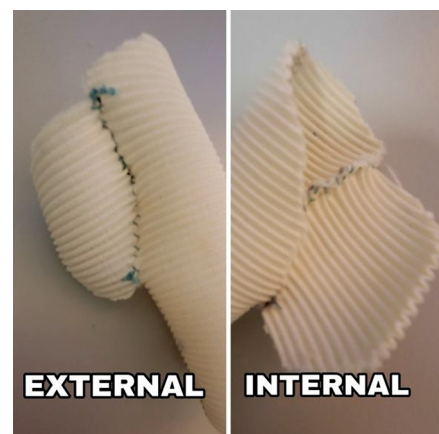


Figure 2. The extra piece of elliptical graft sutured to the oblique cut graft used to prevent the narrowing of the dissected aorta. Note that the curves of the edge are smooth because any narrow angled corner will pose a risk of bleeding.