

# Updates in Cardiovascular Surgery - Hybrid Procedures in Acute Debakey Type I Aortic Dissection

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Acute type A aortic dissection remains a great challenge for the cardiac surgeon, with alarmingly high mortality and morbidity rate. The ‘standardized’ surgical management for the Debakey I dissection used to be replacement of the ascending portion the aorta which leaves the patient with a residual ‘type III’ dissection beyond the aortic arch, that can cause disease progression, operative bleeding, aneurysmal degeneration and rupture (1).

In recent years, the emergent hybrid procedures addressed the matter of acute aortic dissection and the postoperative residual false lumen in the descending aorta with its potential life-threatening complications. The hybrid two stage “Lupiae technique” (ascending-arch repair with multibranching + descending aortic stenting) provided the patient with a non-invasive second stage endovascular descending aorta treatment of residual type III dissection (2). The limitations of this technique were the relative extraanatomical position of the epiaortic vessels and the fact that the landing site for the second stage endovascular descending aorta stenting rendered the procedure to mismatch and endoleaks.

Intensive research in this matter progressed toward designing newer ascendant-arch aortic prostheses, allowing a more anatomical repair of the epiaortic vessels, and a simultaneous stented graft implantation into the descending aorta, thus delivering a one stage hybrid approach on Debakey type I acute aortic dissection treatment. This new technique provides early thrombosis of the patent false lumen in the descending aorta and in doing so, prevents late thoraco-abdominal aneurysm formation and potential fatal complications (bleeding, progression of the false lumen, aortic rupture) that can occur between the two stages of the Lupian technique. Although this innovative approach offers numerous benefits, introducing a stented graft into an acutely dissected aorta may be cumbersome and may carry the risk of kinking or wrinkling of the graft, aortic disruption, peripheral embolization, paraplegia and malperfusion syndrome (3).

Hybrid procedures offer a fresh and innovative perspective on acute aortic dissection management. Further insights and ongoing clinical trial data are needed in order to establish if the apparent benefits in surgical management are supported and long standing.

## REFERENCES

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