



An Improved Method For The Proximal Anastomosis On The Ascending Aorta During Minimally Invasive Cardiac Surgery Coronary Artery Bypass Grafting

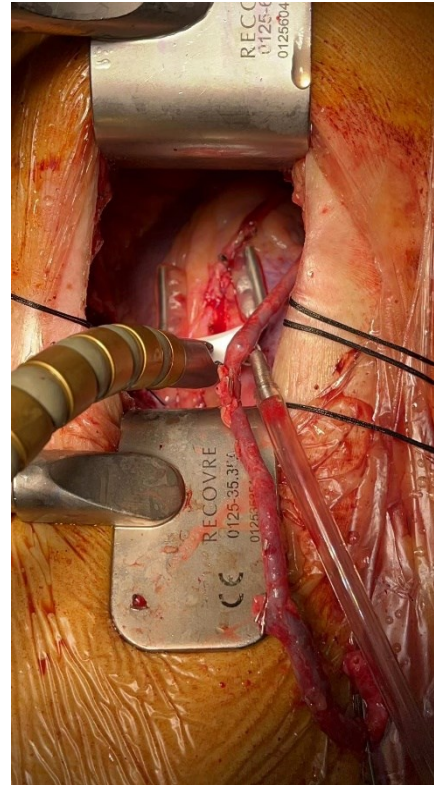
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Background

Off-pump multi-arterial minimally invasive cardiac surgery coronary artery bypass grafting (MICS CABG) via anterolateral mini-thoracotomy has become a feasible and safe procedure, achieving complete anatomical graft similarity with conventional CABG. Performing the proximal anastomosis of the saphenous vein to the ascending aorta is challenging, particularly when dealing with a protruding right ventricular outflow tract or pulmonary artery. Proximal anastomosis on the ascending aorta during MICS CABG has seen advancements to minimize invasiveness and improve outcomes. Here we introduce an improved method for the proximal anastomosis on the ascending aorta during MICS CABG

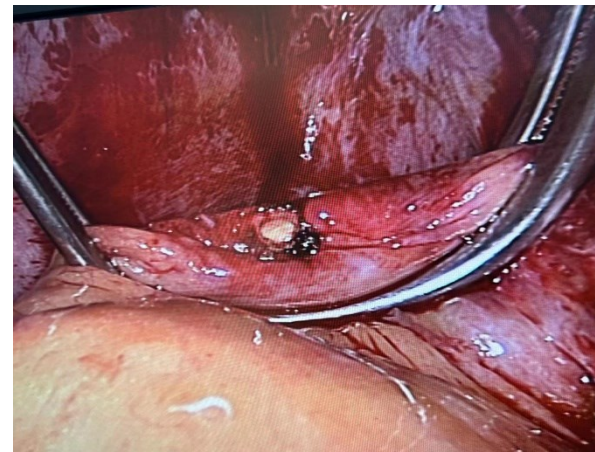
Methods

All myocardial territories are accessed via a 6- to 8-cm left fifth intercostal thoracotomy. A ThoraTrak retractor is utilized to open the thoracotomy and is directed cephalad and rightward toward the ascending aorta. The pericardium is opened from the ascending aorta to the left ventricular apex and to the inferior vena cava. Placements of multilevel pericardial retractions are used to laterally displace the heart. A flexible side-biting clamp is positioned on the ascending aorta through an additional 1-cm incision in the left second intercostal space, allowing for handsewn proximal anastomoses on the ascending aorta



Results

A total of 45 proximal anastomoses were completed with this technique between July 2021 and November 2023. The mean age was 64.6 ± 9.0 years, and median operative time was 4.2 hours. The mean number of grafts was 2.8 ± 0.5 , and there were no conversions to open sternotomy



Conclusion

This technique offers a safe means to overcome the technical challenges of proximal anastomosis during MICS CABG, particularly in cases of challenging aortic access

Table

Table: Perioperative data (partial)

Age (years)	64.6 ± 9.0
number of grafts	2.8 ± 0.5
operative time (hours)	4.2 ± 0.7
Aortic cross-clamp time(hours)	2.8 ± 0.6
Time on ICU (days)	1.5 ± 0.5
In-hospital mortality	0 (0%)