



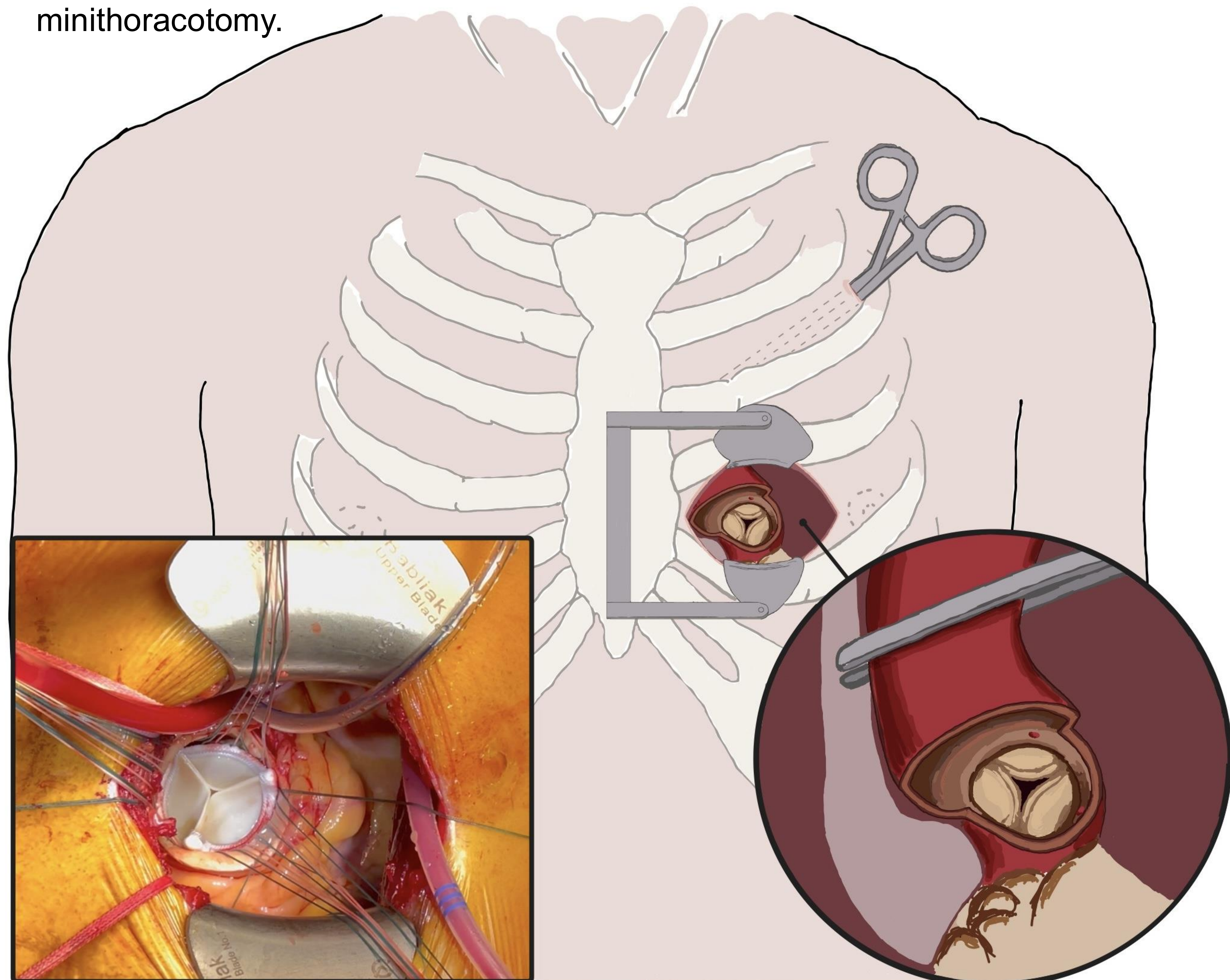
Aortic Valve Replacement Through the Left Anterior miniThoracotomy

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BACKGROUND

Aortic valve replacement (AVR) is traditionally performed via full sternotomy, especially when combined with coronary artery bypass grafting (CABG). However, selected patients may benefit from a less invasive approach. We demonstrate a combined AVR and LAD grafting through a single left anterior minithoracotomy.

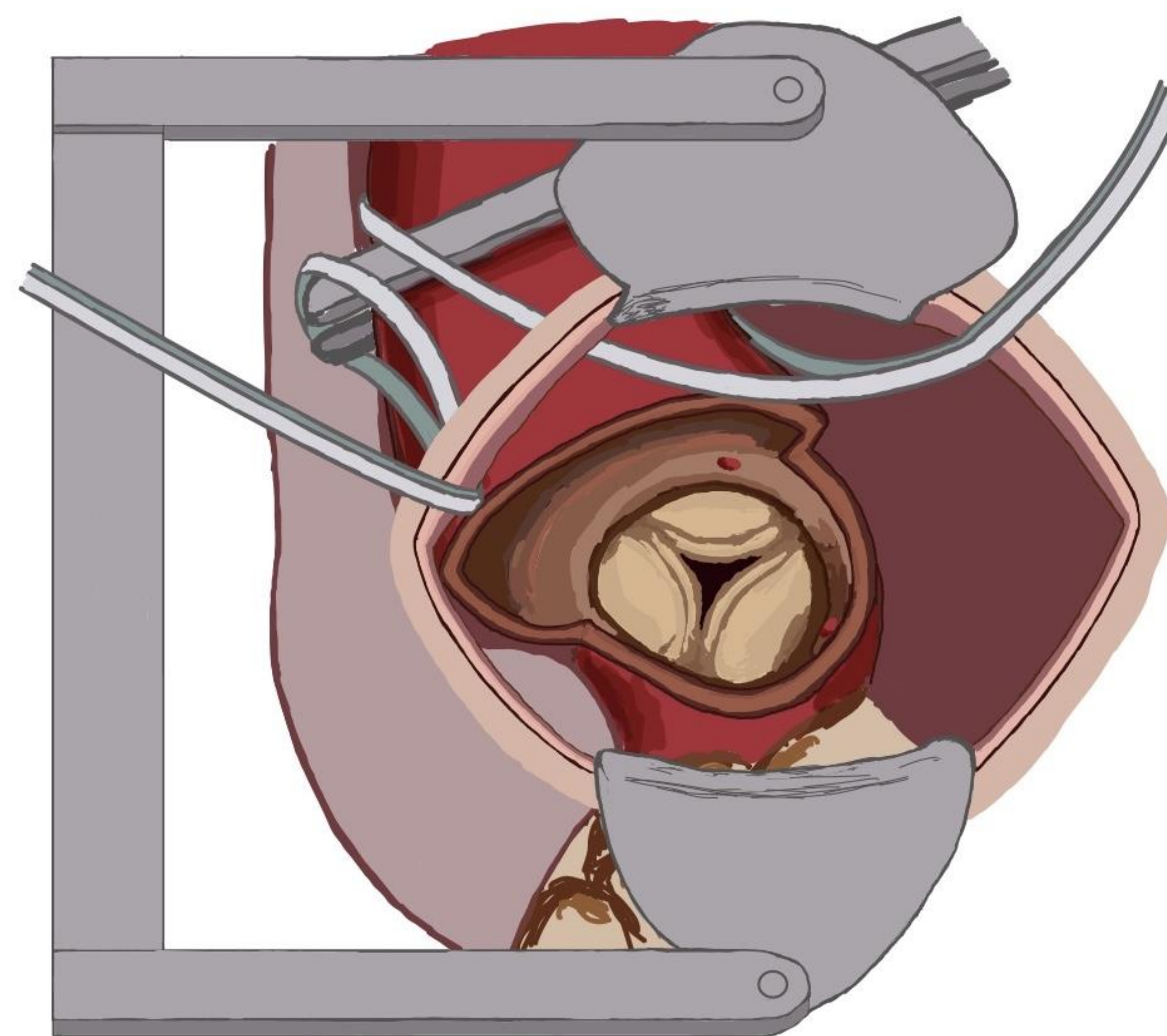


METHODS

Between 11 April 2023 and 31 March 2025, 17 patients underwent AVR via a 4th or 3rd intercostal space LAMT.

Surgical technique included:

- Peripheral cardiopulmonary bypass
- Transthoracic aortic cross-clamping
- Cold blood cardioplegia
- AVR with mechanical or biological valve
- LIMA-to-LAD or additional vein or radial artery grafting as needed



Tapes for aortic valve exposure via LAT

Variable	N = 17
Age, years	71,5 ± 5,1 (64;81)
Men, n	10 (58,8%)
Diabetes, n	11 (64,7%)
LVEF, %	45,5 ± 15,6 (20;60)
BMI	30 ± 6,32 (22,7; 44,1)
EuroSCORE II, %	3,18 ± 2,1 (1,31; 6,29)

RESULTS

Variable	Mean ± SD (min;max)
Distal coronary anastomoses per patient	2,12 ± 0,86 (1;4)
Total operation time, min	340 ± 60,6 (220;440)
Cardiopulmonary bypass time, min	255,9 ± 56 (193;386)
Cross-clamp time, min	210,1 ± 60,5 (128;339)
ICU stay, days	1,67 ± 0,5 (1;2)
Total hospital stay, days	7,63 ± 1,1 (6;9)

No conversions to sternotomy were required. There were no intraoperative deaths or major complications. All patients were discharged with improved clinical status.

CONCLUSIONS

Left anterior minithoracotomy is a safe and feasible approach for AVR combining with CABG. It offers excellent exposure, allows full procedural control, and results in fast recovery with low complication rates, even in high-risk and obese patients.