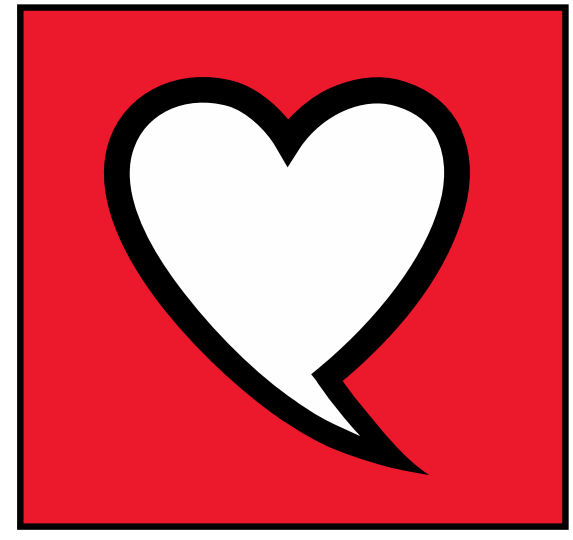




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Minimally Invasive Right Anterior Mini-Thoracotomy for Combined Mitral Valve Surgery and Trans-Aortic Septal Myectomy: Insights from a Single-Center Study

Abdulrahman Aljuayli MD¹, Abdullatif Abo Dan MD¹, Nebil Ajmi MD¹, Denis Bouchard MD, MSc, FRCS¹

¹Department of Cardiac Surgery, Montreal Heart Institute and Université de Montréal, Montreal, Quebec, Canada.

Université
de Montréal

BACKGROUND

Hypertrophic obstructive cardiomyopathy (HOCM) can cause significant LVOT obstruction and can be associated with mitral valve abnormalities such as degenerative disease or SAM-related mitral regurgitation. In these patients, optimal treatment may require both septal myomectomy and mitral valve surgery. This study reviews our center's experience with this combined minimally invasive approach.

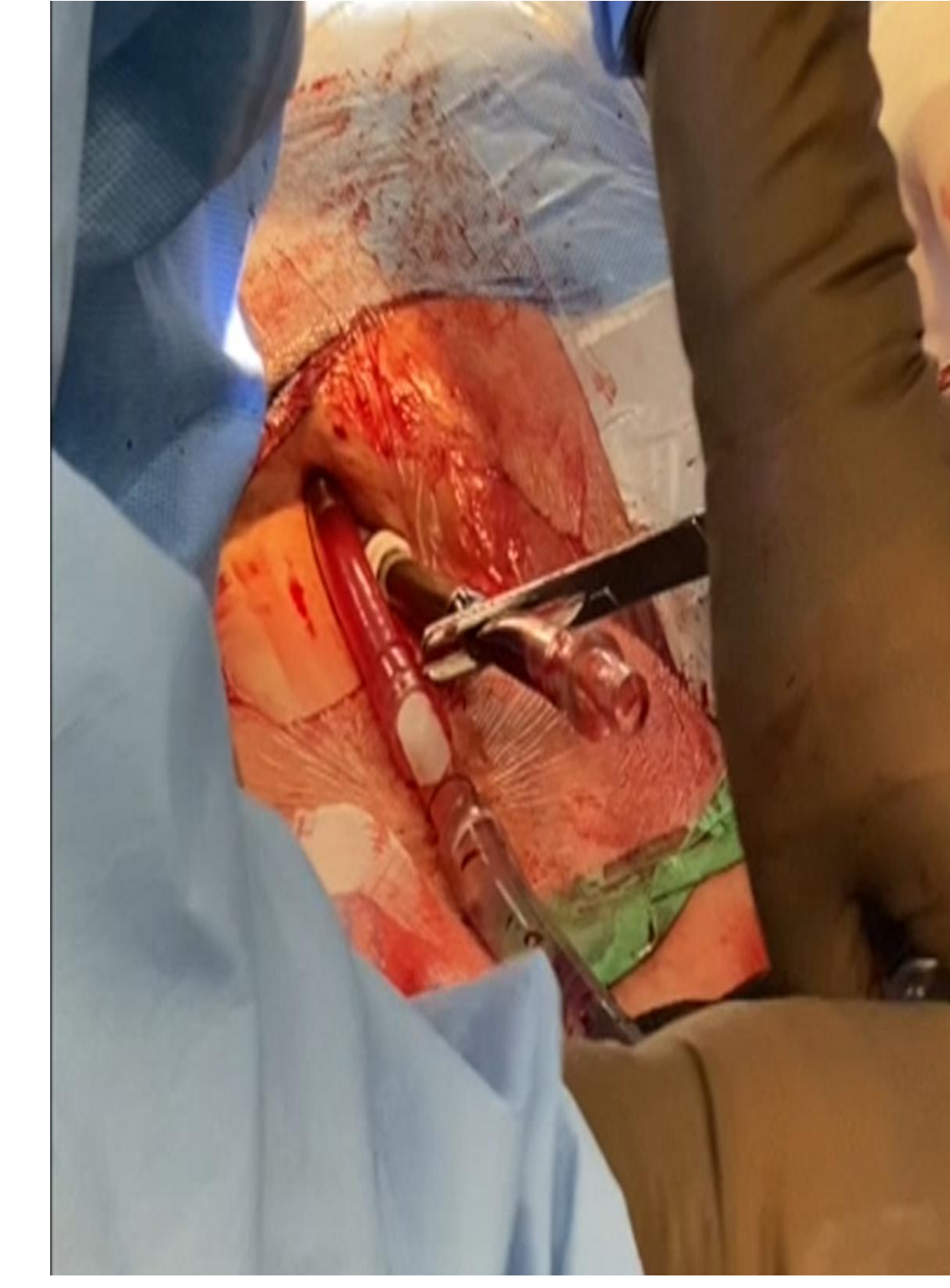
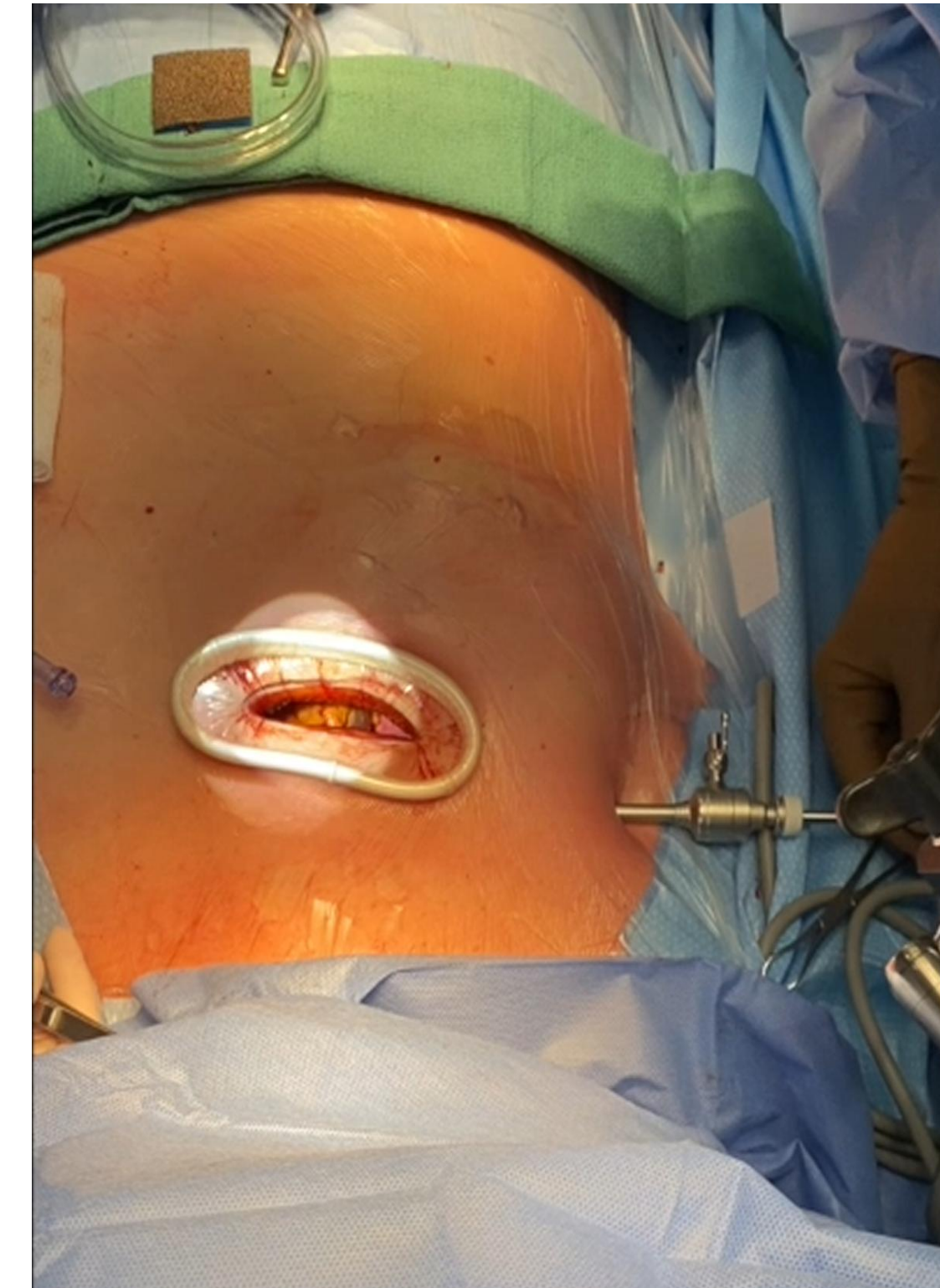
SPECIFIC OBJECTIVES

To evaluate the feasibility, perioperative outcomes, and early hemodynamic results of concomitant mitral valve surgery and trans-aortic septal myectomy via a minimally invasive right anterior mini-thoracotomy.

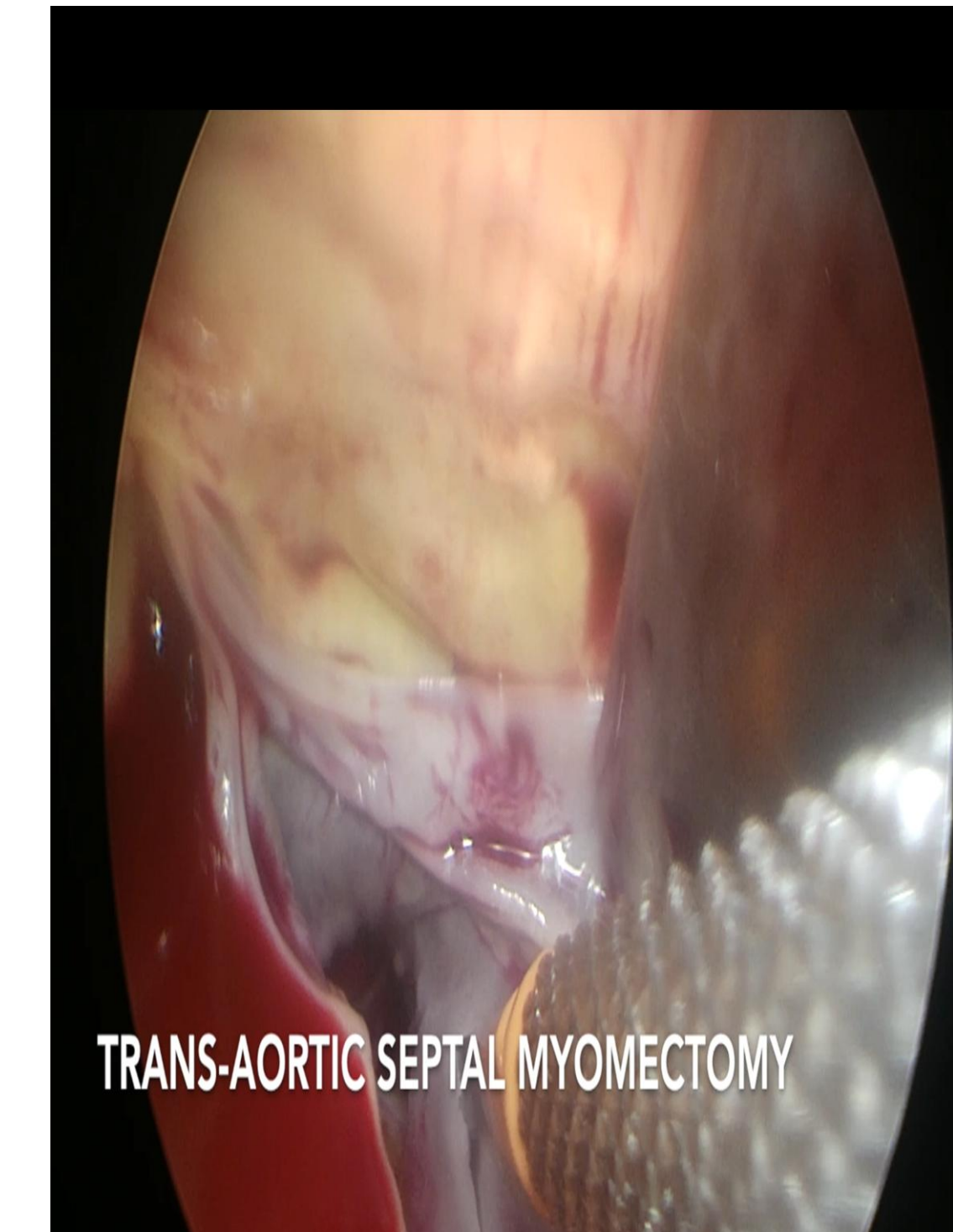
MATERIALS & METHODS

- Retrospective review of **17 patients** (2014–2025) who underwent concomitant mitral valve surgery and trans-aortic septal myectomy via a right anterior mini-thoracotomy.
- Mean age: **64.4 years, 70.6% female**.
- Indications: symptomatic LVOT obstruction (mean **rest gradient 50.4 ± 24.6 mmHg**) plus mitral pathology (degenerative MR, SAM-related MR, rheumatic MS, mixed disease, iatrogenic MR).
- Procedures: **58.8% repairs (n=10), 41.2% replacements (n=7)** — 5 mechanical, 2 bioprosthetic.
- Septal myomectomy and mitral surgery performed through the **same intercostal space**.
- Endpoints: perioperative outcomes, complications, 30-day mortality, postoperative rhythm, hemodynamics.

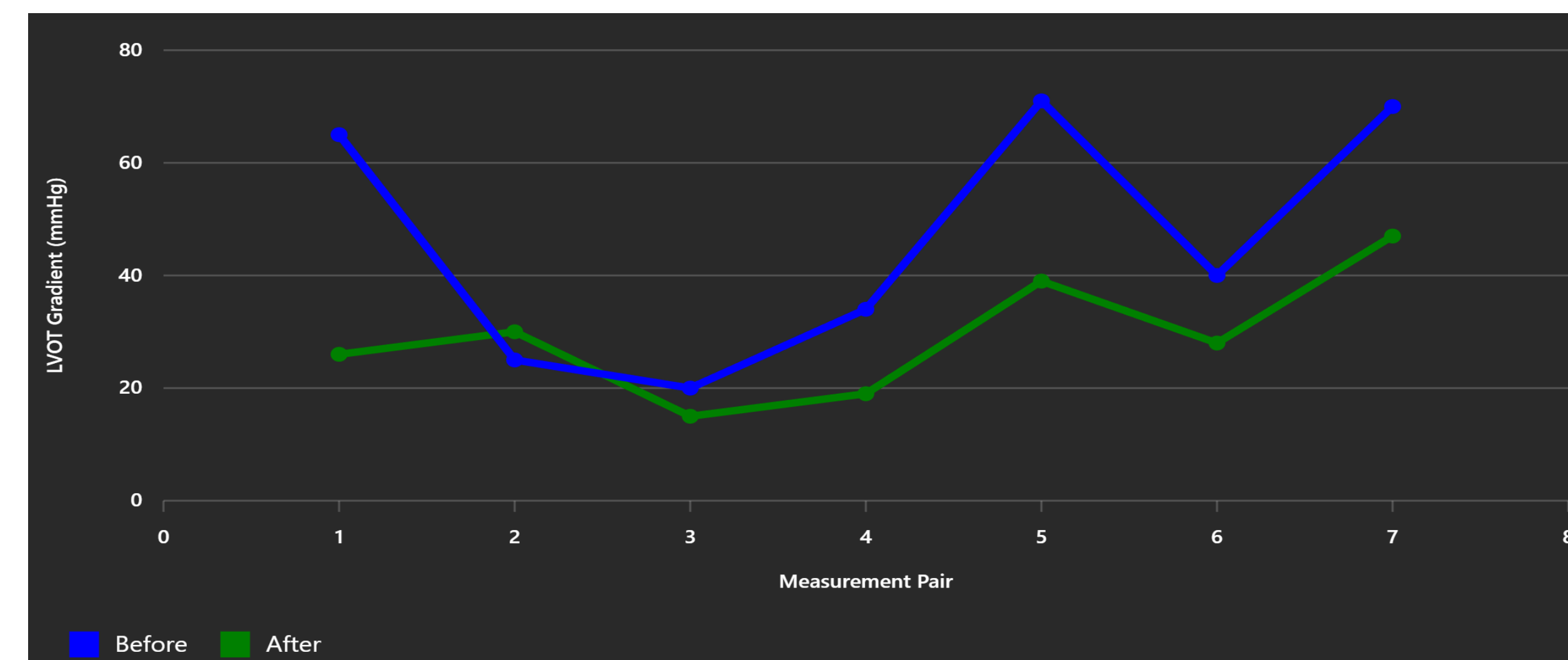
MATERIALS & METHODS(cont.)



TRANSAORTIC ACCESS



TRANS-AORTIC SEPTAL MYOMECTOMY



RESULTS

Operative Outcomes

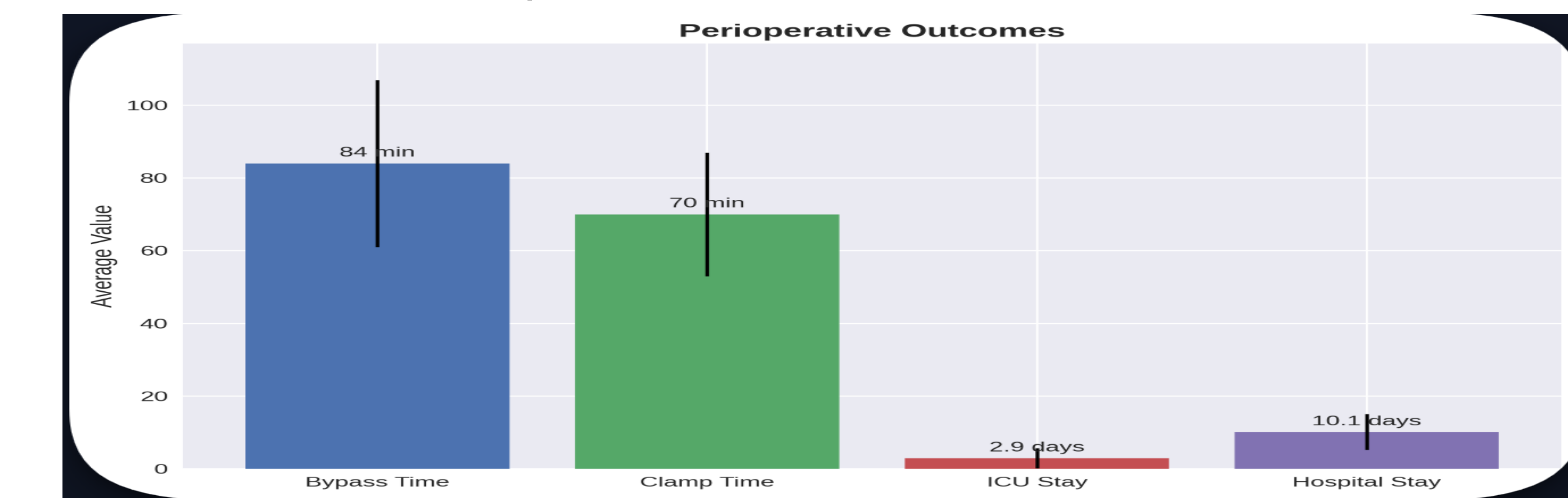
- No 30-day mortality.
- CPB time: **84 ± 23 min**; cross-clamp: **70 ± 17 min**.
- ICU stay: **2.9 ± 2.8 days**; hospital stay: **10.1 ± 4.9 days**.
- Post-repair MV gradient: **4.7 mmHg** (8 none–mild MR, 2 moderate).
- Post-replacement gradient: **4.9 mmHg**; no PVL.

LVOT Gradient Reduction

- Pre-op LVOT rest gradient range: **20–96 mmHg**.
- Post-op: **12 ≤20 mmHg, 4 = 20–40 mmHg, 1 residual SAM** (MitraClip).

Rhythm & Complications

- Sinus rhythm at discharge**: 12/17 (70.6%).
- Pacemaker**: 4/17 (23.5%).
- Transfusions**: 7 patients.
- No infections or reoperations.



Conclusion

Minimally invasive right anterior mini-thoracotomy is a **feasible and safe approach** for combined mitral valve surgery and trans-aortic septal myectomy, demonstrating **acceptable operative times, no early mortality, low morbidity, excellent mitral results, and significant LVOT gradient reduction**. This technique provides a valuable alternative to sternotomy in selected patients requiring concomitant procedures.