



INTRODUCTION

- Surgical resection remains the standard treatment for left atrial myxomas due to the risks of embolization, obstruction, and sudden death¹
- Robotically assisted excision offers a minimally invasive alternative to sternotomy, with data supporting its safety and expedited recovery, yet patient selection criteria and long-term durability of robotic resection remain poorly defined²⁻⁴

OBJECTIVE

- Evaluate the clinical presentation, safety, and freedom from tumor recurrence following robotic left atrial myxoma resection

METHODS

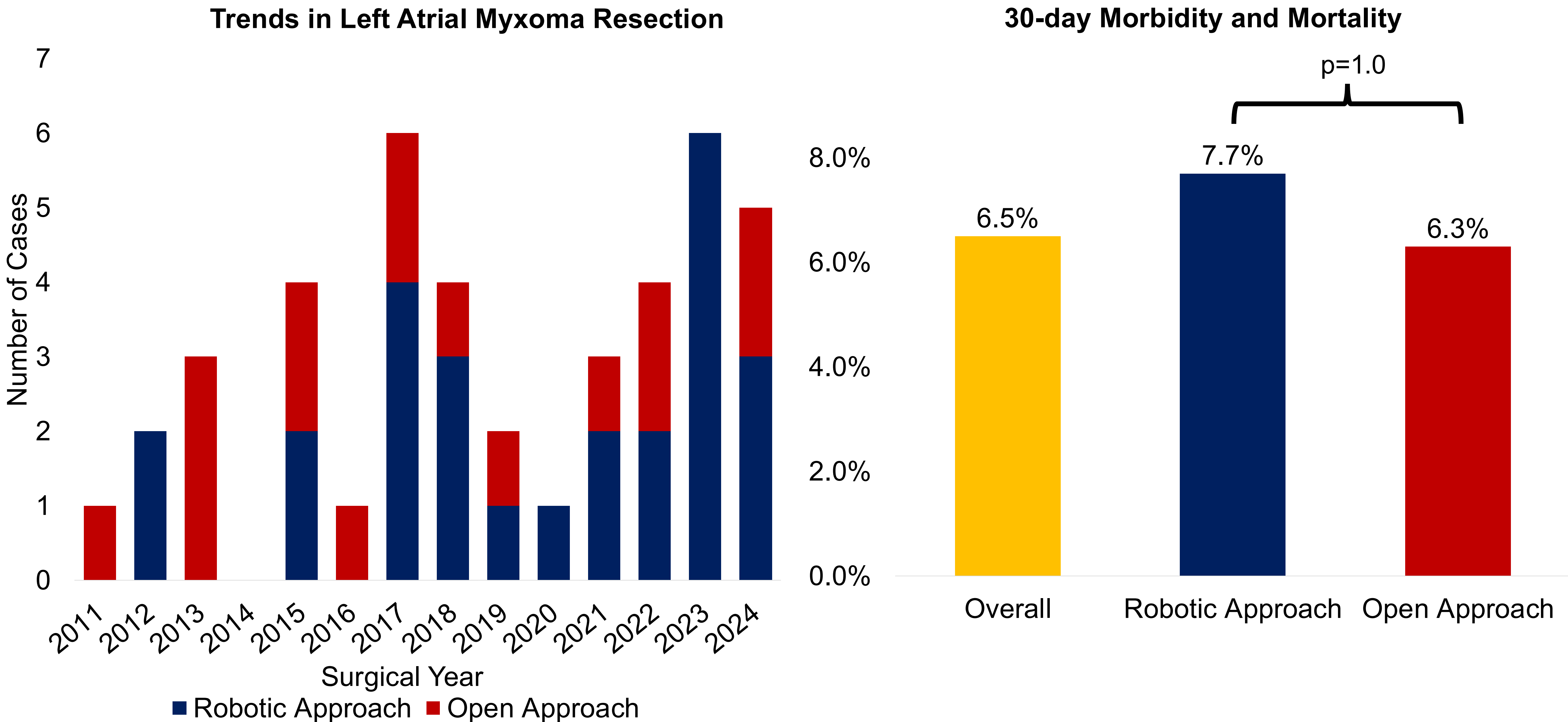
- We identified 42 patients undergoing surgical left atrial myxoma resection from 2011 to 2024 using a prospective institutional registry
- Patients with history of prior cardiac surgery, need for concomitant procedures, or tumor outside of the left atrium were excluded
- Patients were stratified into robotic (n=26; mini-thoracotomy) and open (n=16; sternotomy or thoracotomy) resection groups
- Primary endpoint was the Society of Thoracic Surgeons risk-adjusted 30-day morbidity (stroke, renal failure, cardiac reoperation, reintubation, or prolonged ventilation) and mortality
- Secondary endpoints included tumor recurrence at a median follow-up of 2 years (IQR, 0.1–4 years) and in-hospital outcomes
- Outcomes were compared using Chi-square and Wilcoxon rank-sum tests

Baseline Characteristics

	Robotic Approach (n=26)	Open Approach (n=16)	P-value
Age, years (IQR)	63.0 (52.0, 72.0)	67.0 (57.5, 71.0)	0.59
Female	5 (19.2%)	1 (6.3%)	0.38
Diabetes	6 (23.1%)	2 (12.5%)	0.69
Atrial fibrillation	2 (7.7%)	2 (12.5%)	0.63
Congestive heart failure	0 (0.0%)	1 (6.3%)	0.38
Stroke	2 (7.7%)	3 (18.8%)	0.35
Left Ventricular Ejection Fraction, % (IQR)	62.5 (60.0, 67.0)	63.0 (60.0, 67.0)	0.84

Operative Characteristics

Maximum tumor size dimension, cm (IQR)	2.0 (1.5, 3.0)	3.0 (2.2, 3.6)	0.07
Cardiopulmonary bypass time, min (IQR)	77.5 (72.0, 88.0)	64.5 (53.0, 90.0)	0.17
Aortic cross clamp time, min (IQR)	41.5 (35.0, 50.0)	43.0 (37.0, 55.0)	0.39
Atrial septal defect repair	7 (26.9%)	10 (62.5%)	0.02



RESULTS

	Robotic Approach (n=26)	Open Approach (n=16)	P-value
In-hospital			
Ventilator time, hours (IQR)	4.3 (3.8, 5.4)	5.0 (4.6, 5.2)	0.11
Atrial fibrillation	9 (34.6%)	5 (31.3%)	1.00
Blood transfusion	2 (7.7%)	6 (37.5%)	0.04
Length of stay, days (IQR)	5.0 (4.0, 6.0)	6.5 (4.0, 8.0)	0.11
Tumor recurrence	0 (0.0%)	0 (0.0%)	1.00

CONCLUSIONS

- Compared to open surgery, robotic resection was performed in patients with similar tumor size and achieved equivalent 30-day morbidity, mortality, and tumor recurrence, with reduced need for perioperative blood transfusion and atrial septal defect repair
- Robotic-assisted left atrial myxoma resection may be safely performed without compromising late durability compared to open resection

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