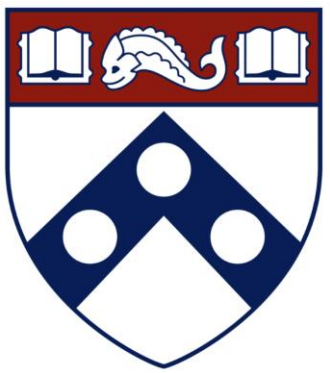


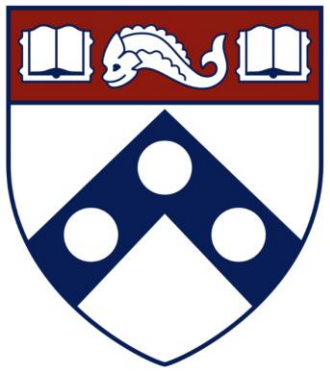
Reoperative Mitral Valve Surgery Utilizing a Robotic Technique: A Safe and Reproducible Approach



Matthew A. Brown¹, Omar Toubat¹, Max Shin¹, Akanksha Girish², John J. Kelly¹, Amit Iyengar¹, Wilson Y. Szeto¹, Michael Acker¹, Michael E. Ibrahim¹

¹University of Pennsylvania, Philadelphia, PA, USA

²Stamford Health, Stamford, CT, USA



Objectives

- Reoperative cardiac surgery is associated with a higher risk of morbidity and mortality compared to first time operations
- To describe institutional experience with reoperative cardiac surgery utilizing a robotic approach

Methods

- Single-institution retrospective case series
- Adult patients with previous mitral valve surgery who underwent reoperative mitral valve surgery utilizing a robotic technique
- March 2022 to October 2024

Demographics:	6 patients, 4 males (75%)
	Mean age 63 ± 8 years
Prior Surgery	Robotic MVr = 2 Mini MVr = 2 Sternotomy MVr = 1 Sternotomy MVR = 1
NYHA Class	Class II = 4 (75%) Class III = 2 (25%)
	Pre-op LVEF 56 ± 5%

Case Series

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Age	69	72	64	73	73	53
Sex	M	F	M	M	F	M
BMI	35	22	29	25	36	25
NYHA Class	III	II	II	II	III	II
Prior Surgery Type	Robotic MVr	Open MVR	Mini MVr	Open MVr	Mini MVr	Robotic MVr
Pre-op Ejection Fraction	55	65	55	60	60	50
Successful Planned Re-Repair	No	N/A	Yes	N/A	N/A	Yes
Planned Replacement	N/A	Yes	N/A	Yes	Yes	N/A
CBP Time (Mins)	225	197	180	201	249	239
Cross-clamp Time (Mins)	169	154	120	119	142	137
ICU LOS (Days)	3	1	1	2	2	3
Hospital LOS	7	5	5	6	5	5
Stroke	0	0	0	0	0	0
MI	0	0	0	0	0	0
Unplanned Reoperation	0	0	0	0	0	0
New hemodialysis	0	0	0	0	0	0
Cardiac Arrest	0	0	0	0	0	0
MR at Follow Up	None	None	Trace/mild	None	None	Trace/Mild
Readmission within 30 days	No	No	No	No	Yes (Pleural effusion)	No

Results

Intraoperative deaths: 0
Successful planned re-repair: 2 (66%)
Planned replacement: 3
Mean cardiopulmonary bypass time: 215 ± 27 minutes
Mean cross-clamp time: 140 ± 19 minutes
ICU length of stay: 2 ± 1 days
Hospital length of stay: 6 ± 1 days
Stroke: 0
MI: 0
Unplanned reoperations: 0
New hemodialysis: 0
Cardiac arrest: 0
All patients had mild or less mitral regurgitation at a mean follow up of 62 days

Conclusions

- A robotic approach is a safe and reproducible approach for patients with previous mitral valve surgery
- Patients requiring redo mitral valve surgery should be evaluated for robotic candidacy



Penn Medicine