



Early & Midterm Outcomes Following Upper Hemi-Sternotomy vs Full Sternotomy in Aortic Root Replacement

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Rapid expansion in MICS

- Hemi-Sternotomy
- Mini-Thoracotomy
 - Robotic

↓ Pain

↓ Transfusion

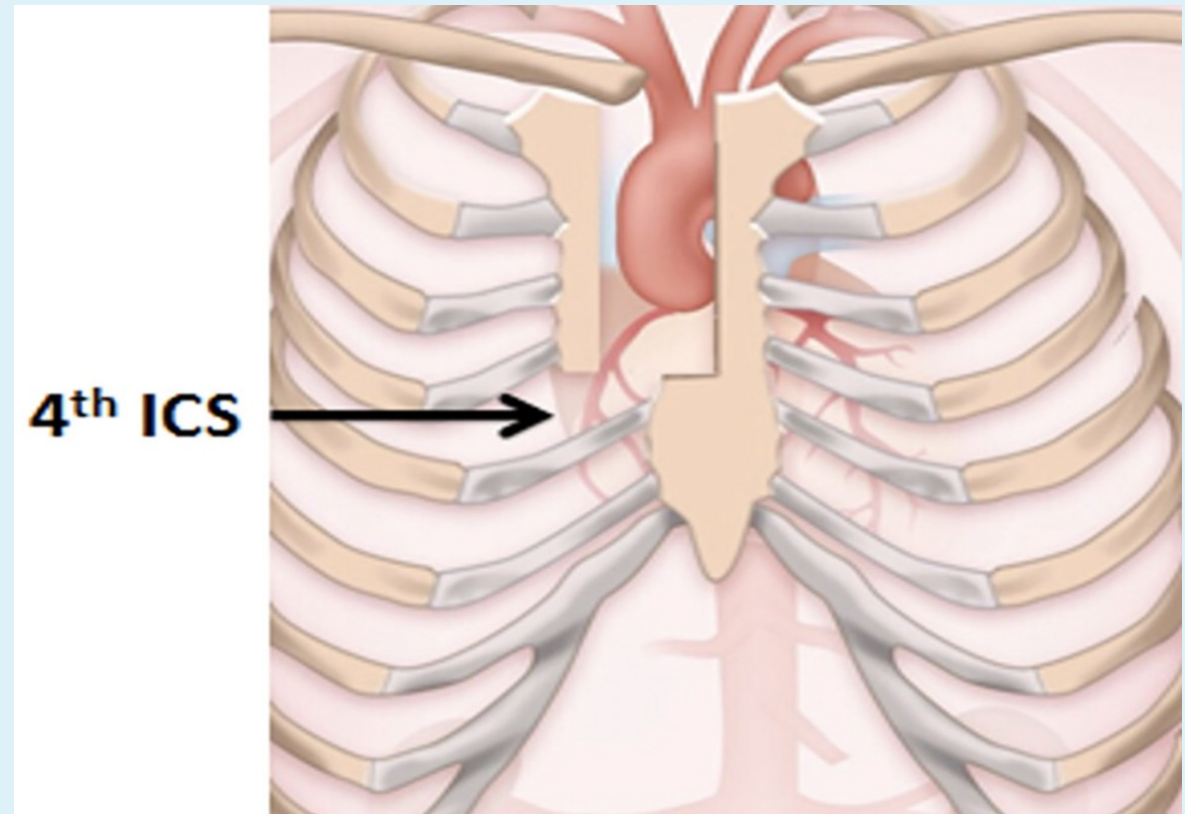
↓ Respiratory Complications

↑ Cosmesis

↑ Recovery

Background

- MICS in ARR
 - Root Dissection
 - Coronary Reimplantation
 - Longer CPB/XC times
- Safe, but comparative data limited
- Institutional preference: **Upper Hemi-Sternotomy**



Technical Considerations

6 cm incision

J-shape into 4th ICS



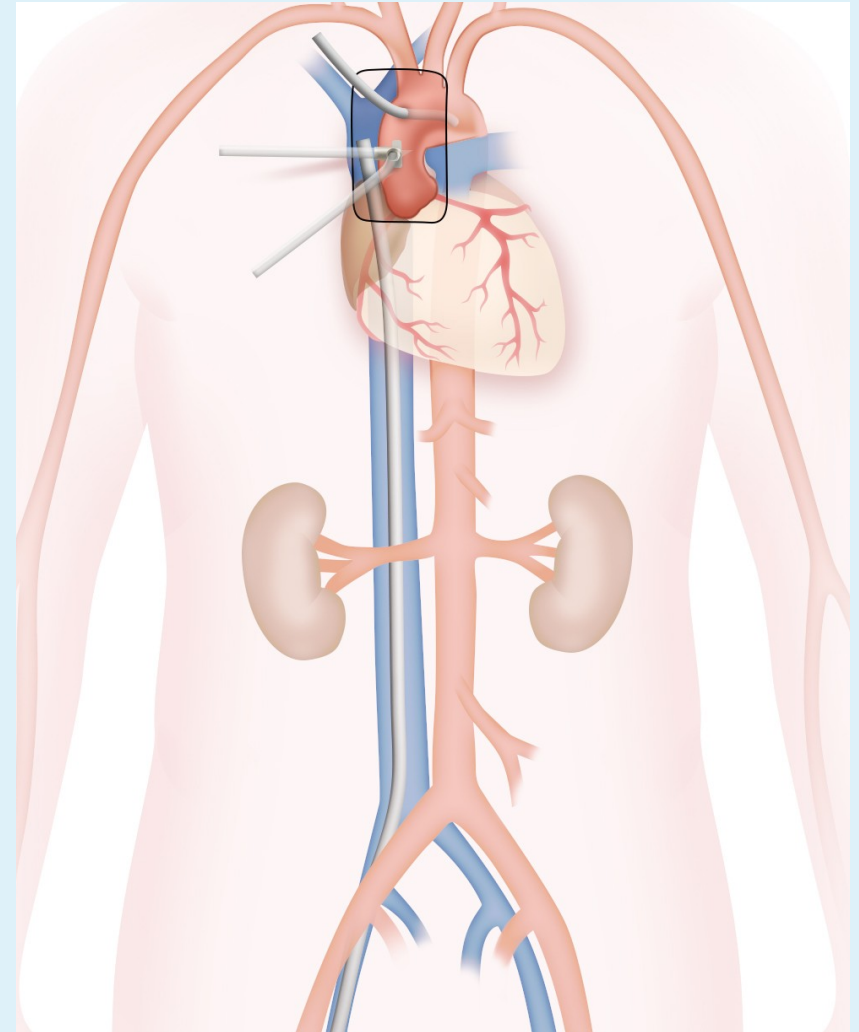
Technical Considerations

Femoral Venous Cannulation, “Y”

PA vent

Del Nido

RAP, Hemofiltration



Methods

Retrospective analysis: **172 consecutive patients** from 2014-2025



Excluding:

Acute dissection




Concomitant cardiac/arch procedures



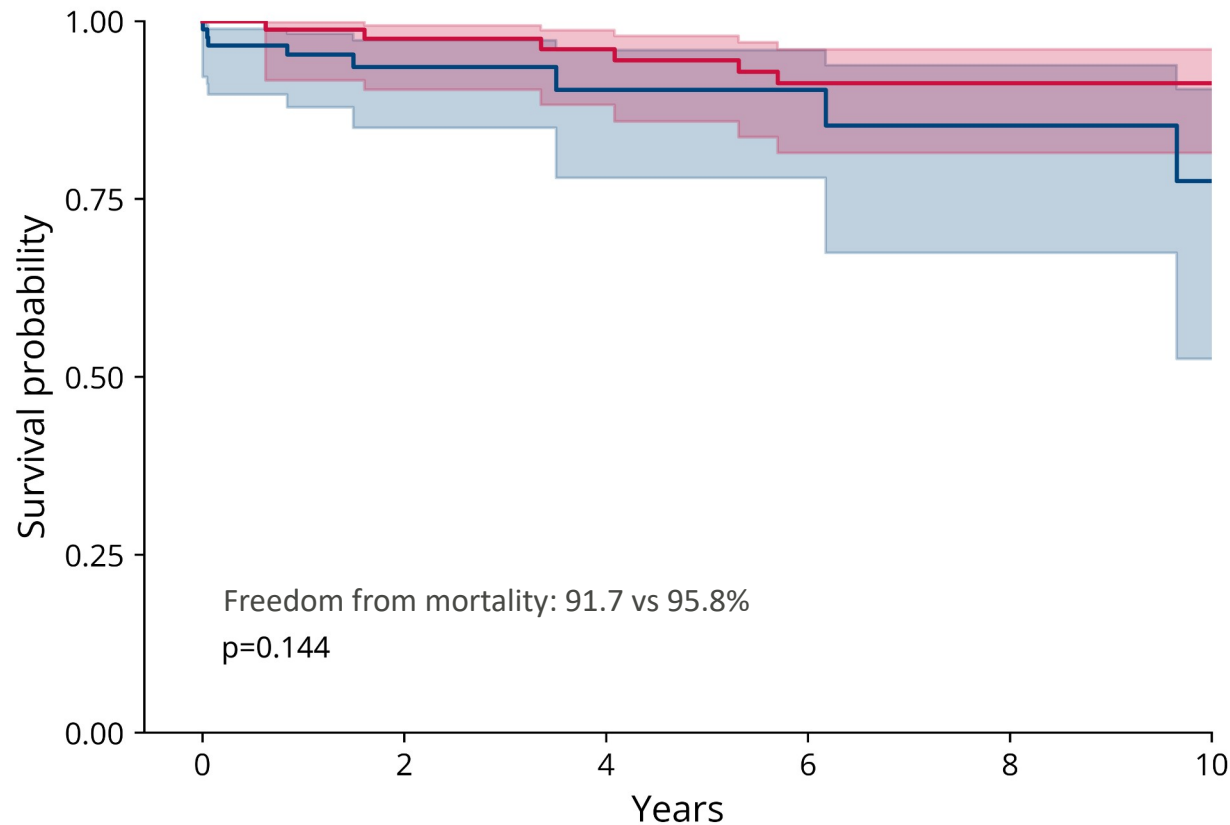
Propensity score matched: **72 pairs**

Largest cohort size to date

Operative Characteristics

	Full N = 72	Partial N = 72	p-value
Composite valve graft, n			
Bioprosthetic	34	51 	0.007
Mechanical	9	7	0.792
Valve sparing root replacement, n	28 	14	0.017
Xenograft, n	1	0	>0.999
CPB time, min	197	174 	0.041
Cross clamp time, min	155	150	0.121

Mid-Term Outcomes



	0	2	4	6	8	10
Full Sternotomy						
At risk	87	46	26	18	14	9
Censored	0	36	55	63	66	70
Events	0	5	6	6	7	8
Partial Sternotomy						
At risk	85	76	62	55	30	9
Censored	0	7	20	24	49	70
Events	0	2	3	6	6	6

Operative: 1.4% vs 0%

1 year: 2.8% vs 0%

5 year: 5.6% vs 2.8%

**Freedom from Reoperation:
97.2% vs 98.6% p>0.999**

EF: 60% vs 60%

Transfusion Requirements

	Full N = 72	Partial N = 72	p-value
Blood products, units			
PRBC	0	0	0.695
FFP	1	0	0.543
Cryoprecipitate	0	0	0.259
Platelets	1	1	0.057

No Difference

	Full Sternotomy N = 72	Partial Sternotomy N = 72	p- value
Ventilator time, days [IQR]	1 [1—1.8]	1 [1—1]	0.003
ICU length of stay, days	4	3	<0.001
Hospital length of stay, days	7.5	6	0.003

Results

	Full Sternotomy N = 72	Partial Sternotomy N = 72	p- value
Postoperative complications, n			
Prolonged ventilation	5	6	>0.999
Re-intubation	2	0	0.497
Bleeding	2	1	>0.999

No Difference



Conclusions



UHS safe, feasible



↓ LOS

↓ Mechanical Ventilation

Potentially: ↓ Cost



No differences midterm survival, transfusions, complications

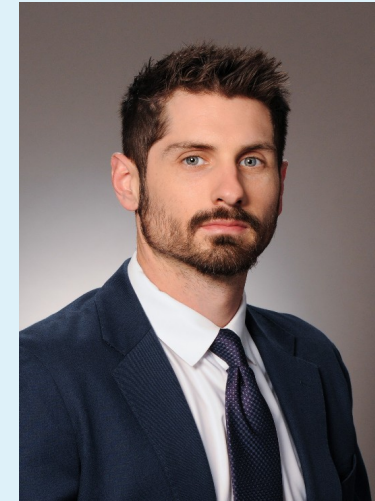
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