

Concomitant Atrial Fibrillation Procedures During Septal Myectomy: A Society of Thoracic Surgeons Adult Cardiac Surgery Database Analysis

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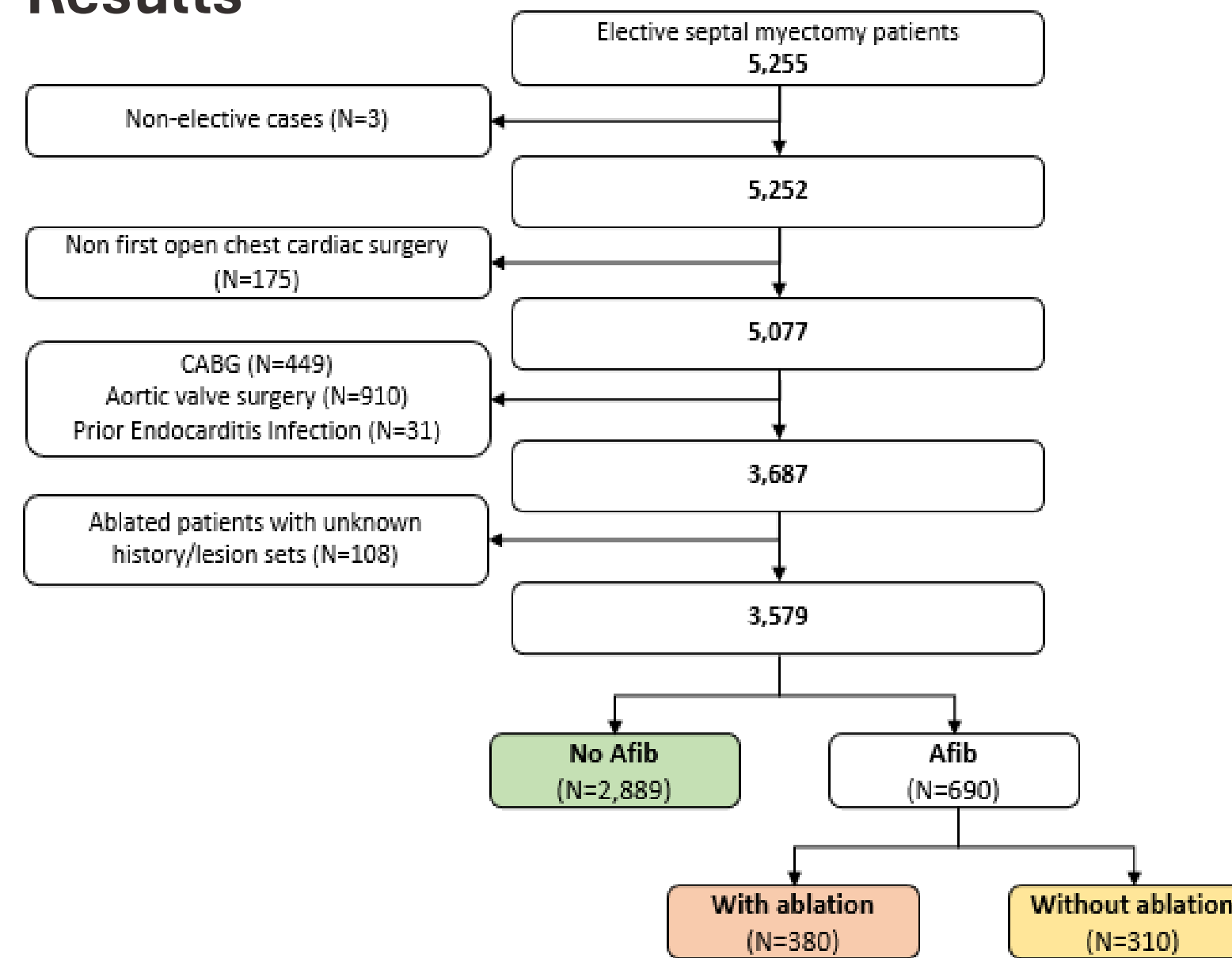
Background/Objectives

- Atrial fibrillation (AF) ablation during septal myectomy (SM) for hypertrophic cardiomyopathy (HCM) has only been evaluated in limited studies
- We examined outcomes and practice patterns for concomitant AF ablation during SM, using the STS Adult Cardiac Database (STS ACSDb)

Methods

- Patients undergoing SM ± mitral valve surgery from 2014 to 2023 in STS ACSDb
- Patients stratified by AF and no AF. AF patients further stratified by surgical ablation (SA) vs no ablation (no-SA)
- Propensity matching utilized to balance baseline difference
- Primary outcome: operative mortality
- Secondary outcomes: Incidence of SA and LAAO, mitral valve surgery, PPM implant, stroke, renal failure, and 30 day readmission

Results



5,255 patients from 302 centers underwent elective SM from 2014 to 2023. After exclusions, 3,579 patients formed the study cohort. 690 patients (19.3%) had AF, and 2,889 had no AF (80.7%). Among AF patients, 380 (55%) underwent concomitant SA, and 310 (45%) were untreated.

Conclusion

AF is infrequently addressed during septal myectomy. In line with recent Class I recommendations, concomitant AF ablation and LAAO should be considered during myectomy, as it confers no increased risk of PPM, renal failure, or stroke.

Table. Characteristics and outcomes of patients undergoing septal myectomy atrial fibrillation status and by treated versus untreated in unmatched and propensity score matched groups.

Variable	Before Matching				After Matching			
	N	No AF (N=2889)	AF (N=690)	P-value	N	No AF (N=672)	AF (N=672)	P-value
Ablation	3579	0 (0.0)	380 (55.1)	<.001	1344	0(0.0)	368(54.8)	<.001
Left Atrial Appendage Closure	3579	148 (5.1)	436 (63.2)	<.001	1344	32(4.8)	422(62.8)	<.001
Mitral Valve Surgery	3579	1040 (36.0)	303 (43.9)	<.001	1344	215(32.0)	298(44.3)	<.001
Cross Clamp Time (min)	3574	50.0 (29.0, 90.0)	69.0 (39.0, 116.0)	<.001	1343	50(27, 92)	69(39, 116)	<.001
New onset Pacemaker ¹	3480	298 (10.5)	73 (11.2)	0.602	1269	51(8.0)	71(11.2)	0.051
Postop Stroke > 24 Hrs	3559	7 (0.2)	2 (0.3)	0.824	1334	3(0.5)	2(0.3)	0.649
New onset Renal failure ¹	3552	40 (1.4)	20 (2.9)	0.006	1338	11(1.6)	20(3.0)	0.104
Readmission within 30 Days	3175	277 (10.8)	84 (13.7)	0.043	1184	68(11.6)	84(14.1)	0.201
Operative Mortality	3578	35 (1.2)	18 (2.6)	0.006	1344	13(1.9)	18(2.7)	0.364

Variable	Before Matching			After Matching				
	N	AF with ablation (N=380)	AF without ablation (N=310)	P-value	N	AF with ablation (N=304)	AF without ablation (N=304)	P-value
Mitral Valve Surgery	690	186 (48.9)	117 (37.7)	0.003	608	145(47.7)	115(37.8)	0.014
Cross Clamp Time (min)	689	95 (57, 147)	48.0 (30, 80)	<.001	607	90(55, 141)	48(30, 81)	<.001
New onset Pacemaker ¹	650	48 (13.3)	25 (8.7)	0.066	574	37(12.7%)	25(8.9%)	0.142
New onset Renal failure ¹	688	15 (3.9)	5 (1.6)	0.071	606	9(3.0%)	5(1.7%)	0.285
Postop Stroke > 24 Hrs	687	1 (0.3%)	1 (0.3%)	0.883	605	1(0.3%)	1(0.3%)	0.998
Readmission within 30 Days	613	53 (15.0%)	31 (11.9%)	0.271	536	39(13.9%)	31(12.2%)	0.555
Operative Mortality	690	13 (3.4%)	5 (1.6%)	0.138	608	10(3.3%)	5(1.6%)	0.191

¹New onset conditions among the patients without pre-operative condition prior to discharge. All listed as n (%) or Median (Q1, Q3)

After propensity matching, AF patients had no difference in postoperative stroke, renal failure, readmission within 30 days or operative mortality following SM. AF patients who underwent SA had higher cross-clamp time and rates of mitral valve surgery, without increased postoperative pacemaker requirement, new onset renal failure, stroke or operative mortality. SA patients had LAAO 97% while no-SA patients had LAAO 21.4%.

Disclosures

D. Johnston: Consultant for Edwards Lifesciences, Liva Nova, Terumo, Artivion, Abbott. B. Cheema: Consultant for Novo Nordisk, Viz.AI, Caption Health, Healthspan. Advisory Board of Zoe Biosciences. Speaker/Honoraria for BMS. J. Cox: Consultant/Ownership Interest for AtriCure, Adagio Medical. Advisory Board for Lucid Diagnostics. Ownership Interest for PAVmed. P. McCarthy: Royalties for AtriCure. Speaker/Honoraria for Edwards Lifesciences. Advisory Board for Abbott, Arthrex. C. Mehta: Consultant and Speaker/Honoraria for Baxter. Consultant for Gore and Terumo.