Can Pre-operative Comorbidities Predict the Development of Atrial Fibrillation After Transhiatal Esophagectomy?

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INTRODUCTION

- Incidence of Atrial Fibrillation (A-Fib) after esophagectomy of approximately 12-37%.
- Risk factors for development of Atrial Fibrillation after esophagectomy have not been established
- We sought to identify if pre-operative comorbidities or method of surgery correlated with development of post-operative atrial fibrillation.

METHODS

- A retrospective chart review between 2012-20 was conducted
- Included patients who underwent transhiatal esophagectomy. Demographics and perioperative data collected
- Patients stratified into those who developed a-fib and those who did not.
- X^2 test was performed to compare characteristics between the two groups, $p < 0.05$ deemed significant

Characteristics of Patients (n = 130)			
	No A-Fib (n = 101)	A-fib present (n=29)	
Variables			
Gender			
Female	13 (12.87%)	6 (20.69%)	p = 0.293
Male	88 (87.13%)	23 (79.31%)	
Age (mean)	62.6	68.8	
Hypertension			
Absent	38 (37.62%)	10 (34.48%)	p = 0.757
Present	63 (62.38%)	19 (65.52%)	
Diabetes			
Absent	67 (66.34%)	19 (65.52%)	p = 0.934
Present	34 (33.66%)	10 (34.48%)	
Hyperlipidemia			
Absent	63 (62.38%)	21 (72.41%)	p = 0.319
Present	38 (37.62%)	8 (27.59%)	
CHF			
Absent	96 (95.05%)	26 (89.66%)	p = 0.287
Present	5 (4.95%)	3 (10.35%)	
COPD			
Absent	81 (80.2%)	24 (82.76%)	p = 0.758
Present	20 (19.8%)	5 (17.24%)	
Asthma			
Absent	96 (95.05%)	28 (96.55%)	p = 0.734
Present	5 (4.95%)	1 (3.45%)	
CAD			
Absent	81 (80.2%)	27 (93.1%)	p = 0.102
Present	20 (19.8%)	2 (6.9%)	
History of MI			
Absent	98 (97.03%)	28 (96.55%)	p = 0.895
Present	3 (2.97%)	1 (3.45%)	

Table 1: Demographics of patients undergoing esophagectomy compared between those who developed a-fib and those who did not

RESULTS

- 130 patients who underwent transhiatal esophagectomy were identified between 2012-2020.
- 29 patients (22%) developed atrial fibrillation during their post-operative course.
- On analysis, gender and comorbidities did not vary significantly between groups.
- Cardiac history including CAD, history of A-fib, and MI did not vary significantly.
- Lastly, method of surgery (open, laparoscopic of robotic) did not correlate significant with the development of A-fib

CONCLUSION

- Development of a-fib after esophagectomy does appear to depend on pre-op comorbidities or method of surgery
- Future studies should further examine this correlation with larger patient samples