Impact Of Atrial Fibrillation On Long-term Survival Following Oesophagectomy: A 21-year observational Study

Cameron Wells¹, Jason Roberston², Sandra Campbell², Fadhel Al-Herz³, Bruce Rhind², Mike Young²

¹ Department of Surgery, Faculty of Medical and Health Sciences, The University of Auckland
² Department of Surgery, Palmerston North Hospital, Mid-Central District Health Board
³ Department of Surgery, North Shore Hospital, Waitemata District Health Board

Introduction:
Post-operative atrial fibrillation (AF) is a common complication of esophagectomy, and thought to be a marker of a complicated post-operative course. AF is associated with prolonged admissions, increased healthcare costs, and inpatient mortality. However, the impact of post-operative AF on long-term outcomes remain uncertain.

Aims:
The aims of this study were i) to identify risk factors for the occurrence of AF following oesophagectomy, and ii) to determine the effect of AF following oesophagectomy on long-term survival.

Methods:
Patients undergoing Ivor-Lewis oesophagectomy from 1994 to 2014 at Palmerston North Hospital, New Zealand were retrospectively evaluated. Demographic, peri-operative and tumour variables were collected. Cases were stratified by the occurrence of new-onset post-operative AF. Logistic regression was used to identify independent predictors of AF. Cox regression models were used to assess post-discharge and overall survival following oesophagectomy.

Results:
A total of 89 patients were included. New-onset AF developed post-operatively in 27 (30%). The median duration of follow up was 7.7 years. Logistic regression identified pre-operative chemoradiotherapy, anastomotic leak, pneumonia, previous abdominal surgery, and volume of intravenous fluid administered as independent predictors of AF. Post-discharge survival was independently predicted by AF occurrence (HR 2.90, 95% CI 1.01-7.65, p=0.03), preoperative chemoradiotherapy (HR 0.34, 95% CI 0.15-0.80, p=0.01), 1-4 positive lymph nodes (HR 2.74, 95% CI 1.13-6.65, p=0.03), ≥5 positive nodes (HR 3.14, 95% CI 1.07-9.26, p=0.04) and year of operation from 2008 to 2014.

Conclusion:
The occurrence of post-operative AF was an independent predictor of long-term survival in this cohort of patients undergoing oesophagectomy. Further prospective assessment is required to evaluate the specific effects of AF on long-term cardiovascular and oncological outcomes following oesophagectomy.