

## **Left Posterior Pericardiotomy in the Prevention of Post-Operative Atrial Fibrillation and Cardiac Tamponade: A Retrospective Study of 2118 Isolated Coronary Artery Bypass Graft Patients**

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**Abstract :** Post-Operative Atrial Fibrillation (POAF) is the most frequent complication of cardiac surgery and is associated with reduced survival, increased rates of cognitive changes and cerebrovascular accident, heart failure, renal dysfunction, infection and length of stay, and hospital costs. Cardiac tamponade, although less common, carries high morbidity and mortality. Shed mediastinal blood in the pericardial space is a major source of intrapericardial oxidative stress and inflammation that triggers POAF. The utilisation of a left posterior pericardiotomy aims to shunt blood from the pericardium into the pleural space and have a role in the prevention of POAF as well as cardiac tamponade. 2118 patients had undergone isolated Coronary Artery Bypass Graft (CABG) at Royal Hobart Hospital from 2008-2021. They were divided into pericardiotomy vs control group. Patient baseline demographics, intraoperative data, and post-operative outcomes were reviewed retrospectively. Total incidence of new POAF and cardiac tamponade was 26.1% and 0.75%, respectively. Primary outcome of both the incidence of POAF(22.9% vs27.8%OR 0.77 p<0.05) and Cardiac Tamponade (0% vs 1.1% OR 0.85 p<0.05) were less in the pericardiotomy group. Increasing age, BMI, poor left ventricular function (EF <30%), and return to theatre were independent predictors of developing POAF. There were similar rates of return to theatre for bleeding however, no cases of tamponade in the pericardiotomy group. There were no complications attributable to left posterior pericardiotomy and the time added to the duration of surgery was minimal. Left posterior pericardiotomy is associated with a significant reduction in the incidence of POAF and cardiac tamponade and is safe and efficient.

**Keywords :** cardiac surgery, pericardiotomy, post-operative atrial fibrillation, cardiac tamponade

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