

The Role of Posterior Pericardiotomy on The Incidence of Atrial Fibrillation and Pericardial Effusion after Coronary Revascularization

The most common type of arrhythmia following coronary artery bypass grafting (CABG) is atrial fibrillation (AF) with an incidence rate of 20-30%. Even though postoperative atrial fibrillation (POAF) can be self-limited, it may be complicated by lack of hemodynamic stability, increased hospital stay, home mortality, stroke, thrombotic complications, embolus, extra drug therapy, and consequently increased hospital expenses.

This prospective and retrospective study aims to demonstrate the effectiveness of posterior pericardiotomy in reducing the incidence of pericardial effusions and consequently reducing the related atrial fibrillation and development of delayed posterior cardiac effusions.

This prospective and retrospective randomized study was carried out on 100 patients undergoing coronary artery bypass grafting at Kasr El Ainy Hospital, Cairo University, and at Fayoum University Hospital, Department of Cardiothoracic Surgery between May 2017 and January 2018. One hundred patients were divided into two groups; each group included 50 patients. A 4-cm longitudinal incision was made parallel and posterior to the left phrenic nerve, extending from the left inferior pulmonary vein to the diaphragm in the posterior pericardiotomy group (group A). Posterior pericardiotomy was not performed in the conventional group (group B).

Atrial fibrillation developed in five patients (10%) in group (A) and in 12 patients (24%) in group B ($P=0.118$). Early pericardial effusion developed in 6 patients (12%) in group A and 18 patients (36%) in group B ($P=0.022$), but no late pericardial effusion developed in group A despite six (12%) late pericardial effusions developing in group B ($P=0.027$).

Posterior pericardiotomy is a simple, safe, and effective technique for reducing not only the prevalence of early pericardial effusion but also delayed posterior pericardial effusion and tamponade without significant reduction in post-operative atrial fibrillation (POAF).