

Physician - Coronary Artery Diseases and Surgery

[MSB-18]

Impact of Posterior Pericardiotomy on Postoperative Clinical Outcomes in Isolated Coronary Artery Bypass Surgery

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Türk Gogus Kalp Dama 2024;32(Suppl 2):MSB-18

Doi: 10.5606/tgkdc.dergisi.2024.msb-18

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Received: September 07, 2024 - Accepted: September 29, 2024

Objective: This study aimed to evaluate the effectiveness of posterior pericardiotomy in preventing cardiac tamponade and its impact on clinical outcomes in patients undergoing isolated coronary artery bypass grafting (CABG).

Methods: This retrospective study included 384 elective patients who underwent isolated CABG between 2021 and 2024. Patients who underwent posterior pericardiotomy (Group 1) were compared with those who did not (Group 2). Group 1 included 178 patients (135 males, 53 females; mean age: 62.62±8.78 years), while Group 2 included 122 patients (98 males, 24 females, mean age 61.92±8.95 years). Clinical outcomes of patients who underwent revision surgery were analyzed.

Results: Post-intensive care unit (ICU) hospital stay ($p<0.001$), total hospital stay ($p<0.001$), rate of revision surgery ($p=0.027$), posterior tamponade ($p=0.001$), and postoperative atrial fibrillation (POAF; $p=0.034$) were significantly higher in Group 1. In patients who underwent revision surgery, ICU stay ($p<0.001$), post-ICU hospital stay ($p<0.001$), total hospital stay ($p<0.001$), posterior pericardial window opening ($p=0.026$), postoperative inotropic support requirement ($p<0.001$), tube thoracostomy due to pleural effusion ($p=0.002$), posterior tamponade ($p<0.001$), POAF ($p<0.001$), intra-aortic balloon pump usage ($p<0.001$), and rehospitalization ($p<0.001$) were significantly higher compared to those who did not undergo revision surgery. Receiver operating characteristic analysis and the area under the curve demonstrated that the model's performance in predicting these variables was moderate to good.

Conclusion: Posterior pericardiotomy effectively reduces the incidence of POAF and posterior pericardial tamponade without increasing postoperative complications, suggesting it is a beneficial technique in CABG.

Keywords: Coronary artery bypass surgery, revision surgery, POAF, posterior pericardiotomy, postoperative complications.

Variable	AUC value	Predictive power
Inotropic support requirement	0.67	Moderate
Pleural effusion	0.79	Good
Posterior tamponade	0.69	Moderate
POAF	0.76	Good
Intra-aortic balloon pump usage	0.76	Good
Rehospitalization	0.76	Moderate
Cardiopulmonary bypass time	0.76	Good
Cross-clamp time	0.75	Good
Posterior pericardial window	0.63	Moderate