

Clinical Image

Open Access, Volume 5

Rapid evolution of delayed pericardial tamponade following cardiac surgery: Clinical imageRyan Lee^{1*}; Mohamed Tiouririne²¹Departments of Anesthesiology and Emergency Medicine, Division of Anesthesia Critical Care, University of Virginia Health, Charlottesville, Virginia, 22903, USA.²Departments of Anesthesiology and Obstetrics & Gynecology, Division of Anesthesia Critical Care, University of Virginia Health, Charlottesville, Virginia, 22903, USA.***Corresponding Author: Ryan Lee**

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Abstract

Delayed pericardial tamponade represents a rare but life-threatening complication following cardiac surgery. We present a case of a 67-year-old male who developed delayed pericardial tamponade on postoperative day 8 following a Bio-Bentall procedure with diagnosis confirmed via bedside transthoracic echo facilitating expeditious operative intervention and safe hospital discharge.

Keywords: Pericardial effusion; Pericardial tamponade; Cardiac surgery; Transthoracic echocardiography.

Received: Oct 28, 2024

Accepted: Nov 14, 2024

Published: Nov 21, 2024

Archived: www.jcimcr.org

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DOI: www.doi.org/10.52768/2766-7820/3352

Description

After an initially routine postoperative course, a 67-year-old male developed progressive tachypnea, tachycardia, and hypotension with a narrow pulse pressure on POD 8 following a Bio-Bentall procedure. Initial bedside Transthoracic Echocardiography (TTE) revealed a moderate sized pericardial effusion (Figure 1) which on repeat examination 5 hours later had progressed to tamponade physiology (Figures 2,3). The patient was taken for urgent surgical evacuation with fluid analysis consistent with an inflammatory but non-infectious pericarditis. Following drainage, the patient was treated with colchicine and ultimately discharged to acute rehabilitation on hospital day 24.

While usually small, asymptomatic, and clinically insignificant, Postoperative Pericardial Effusions (PPE) are common following cardiac surgery. Delayed effusions occurring after postoperative day 7 resulting in Pericardial Tamponade (PT)

are an uncommon and life-threatening complication. A recent retrospective study reported an overall incidence of late postoperative PT of 6.2% with the highest rate following aortic surgery (9.3%; inclusive of concomitant coronary and/or valve procedures as in the presented case), followed by single valve procedures (6.6%), with isolated CABG having the lowest incidence (1.3%) [1]. This complication can result in both increased morbidity and mortality, as well as hospital and ICU length of stay, particularly when there is a delay to diagnosis. PT should be clinically suspected when a patient develops tachypnea, dyspnea, tachycardia and/or hypotension, particularly when associated with a narrow pulse pressure. Bedside echocardiography, a tool readily available to intensive care and emergency physicians, has been proven to expedite the diagnosis and time-to-treatment of this life-threatening complication [1]. Diagnostic features include right atrial systolic collapse, right ventricular diastolic collapse (Figure 2), IVC collapsibility <50% upon inspira-

tion, and respiratory flow variation across the mitral valve (Figure 3) of >25%. Therapeutic options include both interventional and surgical drainage, with subsequent medical management consisting of colchicine, high dose aspirin, NSAIDs, and corticosteroids for recurrent cases [2].



Figure 1: Moderate circumferential pericardial effusion identified on transthoracic echocardiography.



Figure 2: Bedside transthoracic echocardiography demonstrating right ventricular diastolic collapse.

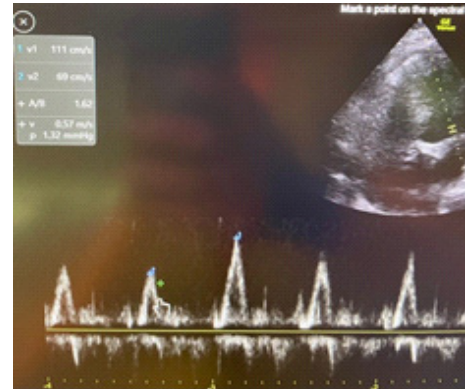


Figure 3: Bedside transthoracic echocardiography demonstrating >25% mitral valve inflow variation with respiration.

References

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