

**UNIVERSITY OF SANTO TOMAS HOSPITAL**

**DEPARTMENT OF SURGERY**

CARDIAC TAMPONADE SECONDARY TO A LARGE PERICARDIAL ABSCESS

IN A HEMODIALYSIS PATIENT: A CASE REPORT

by

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## **INTRODUCTION**

Pericardial abscess is an uncommon condition seen among end-stage renal disease (ESRD) patients on hemodialysis and may present as a surgical emergency when presenting in cardiac tamponade. Being cognizant of this may lead to swifter diagnosis in unstable patients presenting with cardiac tamponade. Periodic surveillance and screening for AV access infections may also prevent the incidence of pericardial abscess among ESRD patients.

## **CASE PRESENTATION**

M.S., a 55-year old female, a known ESRD patient on regular hemodialysis, presented with acute dyspnea. On arrival, the patient was hypotensive (BP 80/60 mmHg) and had distended neck veins and muffled heart sounds. A chest radiograph demonstrated a water bottle sign. Two-dimensional echocardiography revealed a hypoechoic mass compressing the right ventricle and right atrium, with hypokinesia and depressed cardiac function with an ejection fraction of 23%. A chest CT scan revealed a large, thick-walled cystic lesion (14 cm in widest diameter) compressing the right atrium and ventricle.

The patient underwent intra-aortic balloon pump insertion, open sternotomy, and drainage of pericardial abscess with intraoperative transesophageal echocardiography. An intra-aortic balloon was inserted percutaneously via the right femoral artery. Initial intraoperative transesophageal echocardiography (IOTEE) was done, still noting a large cystic mass anterior to the right atrium and ventricle, noting the presence of septations. Hypokinesia of the septum from base to apex was also appreciated. The chest was opened via a median sternotomy incision. The pericardium was noted to be thickened and bulging. On opening, 1700 cc purulent, non-foul smelling fluid was drained. Copious irrigation was done with saline solution. After drainage, a repeat transesophageal echocardiography revealed an increase in ejection fraction of 58% from 23%, with improved wall motion and contractility. Drains were placed along the

cavity of the abscess. The intra-aortic balloon was removed post-operatively. Post-operative chest x-ray showed interval regression of size of the cardiac silhouette, now exhibiting a normal contour. Bacterial culture of the abscess revealed a growth of methicillin-sensitive staphylococcus aureus. Intravenous meropenem and vancomycin were administered.

## **DISCUSSION**

Pericardial abscess may be secondary to an infectious process distant to the pericardium, and can be transmitted either via hematogenous spread, direct invasion from adjacent structures (pleural, mediastinal or intracardiac). In this particular case, the size of the pericardial abscess was significant enough to cause cardiac tamponade, and the compression effect may also have caused the hypokinesia seen on the preoperative echocardiography, which improved after pericardial drainage. The intra-aortic balloon pump, a type of mechanical circulatory support device that can be used in patients with cardiogenic shock, provided hemodynamic support prior to pericardial drainage to prevent pericardial decompensation syndrome.

## **CONCLUSION**

Pericardial abscess may present as cardiac tamponade among patients with end-stage renal disease (ESRD) undergoing hemodialysis. Early detection and prompt surgical intervention is needed in managing patients with pericardial abscess.