Cytoreductive Surgery for Mesothelioma complicated by Post-Operative Takotsubo Cardiomyopathy

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INTRODUCTION

- Takotsubo cardiomyopathy is a transient disorder most commonly affecting postmenopausal women and may require aggressive management of cardiogenic shock and acute heart failure.
- Possible mechanisms include catecholamine excess, microvascular dysfunction, and coronary artery spasm.

CASE PRESENTATION

- 74-year-old woman with left pleural malignant mesothelioma underwent left thoracotomy, pleurectomy, and decortication.
- She had a history of chronic left bundle branch block, otherwise normal cardiac function including normal nuclear stress test.
- POD#1 she developed asystolic cardiac arrest for one minute. She had third degree heart block with hypotension requiring transvenous pacing wire, elevation in troponin level, and electrocardiogram without ischemic changes.

INITIAL ASSESSMENT AND INTERVENTION

- Transthoracic echocardiogram (TTE) revealed decline in LV ejection fraction from normal to 20-24%.
- Selective coronary angiography did not show evidence of coronary artery disease (CAD).
- Right heart catheterization with normal pulmonary artery pressures and low cardiac output.

FINAL DIAGNOSIS

- Takotsubo Cardiomyopathy

Fig 1: TTE post cardiac arrest with apical ballooning

Fig 2: TTE two days later with IABP and improved LVEF.

Fig 3: TTE five days later after removal of IABP. LVEF normalized.

Fig 4: TEE three weeks later revealed thrombus of the superior vena cava treated with systemic anticoagulation. Possibly related to indwelling transvenous pacer that was eventually replaced by epicardial leads.

HOSPITAL COURSE

- IABP was placed for hemodynamic support for five days.
- She also required epinephrine, dopamine, and amiodarone for cardiogenic shock and atrial fibrillation.
- Her hospitalization was complicated by persistent respiratory failure, malnutrition, and fungemia.
- She eventually underwent epicardial lead and pacemaker placement.

DISCUSSION

- We present a case of post-operative Takotsubo cardiomyopathy where intra-aortic balloon pump (IABP) was used for hemodynamic support while left ventricular (LV) function recovered.
- Given acute decline in LV systolic function with no evidence of CAD after extensive thoracic surgery for mesothelioma, this was thought to be a presentation of Takotsubo cardiomyopathy.
- Metoprolol was prescribed for myocardial protection.

CONCLUSIONS

- Takotsubo cardiomyopathy is typically stress-induced and LV often improves with supportive therapy.
- About 10% of patients develop cardiogenic shock requiring aggressive management.
- IABP was effective in providing hemodynamic support while LV function recovered.
- Patients typically recover LV function within one to four weeks.
- Patients who survive an episode of Takotsubo cardiomyopathy are at risk for recurrence.
- Further research is needed to identify those susceptible to post-operative Takotsubo and to better understand treatment.

REFERENCES