A rare case report: Malignant pleural mesothelioma surgery complicated by isolated right ventricular Takotsubo requiring ECMO support

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INTRODUCTION

- **Takotsubo cardiomyopathy** is characterized by transient ventricular systolic dysfunction, often provoked by physical or emotional stress
- Presentation mimics ACS but in the absence of obstructive coronary artery disease (CAD)
- Isolated right ventricular (RV) stress-induced cardiomyopathy is a rare diagnosis.

CASE PRESENTATION

- 80-year-old gentleman with **malignant pleural mesothelioma underwent right thoracotomy, pleurectomy with heated chemotherapy, and decortication.**
- On post-operative Day 4 he developed asystolic cardiopulmonary arrest for three minutes.
- He was hypotensive despite norepinephrine, vasopressin, and epinephrine continuous infusions.
- Transthoracic echocardiogram (TTE) showed **severely dilated RV with poor systolic function and significant pulmonary hypertension (PH)**.
- Emergent left and right heart catheterization with coronary and pulmonary angiography showed **no evidence of pulmonary embolism (PE) or CAD**.
- He stabilized with veno-arterial extracorporeal membrane oxygenation for seven days while vasopressors weaned and pulmonary function improved.
- Pulmonary hypertension managed with epoprostenol and diuresis. Metoprolol was prescribed for myocardial protection.
- His hospitalization was complicated by atrial fibrillation and delirium; he also required renal replacement therapy, tracheostomy, feeding tube placement, and Clagett window for empyema.

FINAL DIAGNOSIS

Right Ventricular Takotsubo

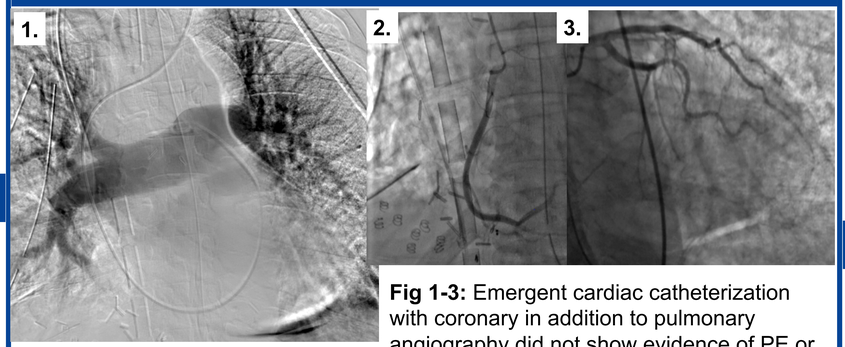


Fig 1-3: Emergent cardiac catheterization with coronary in addition to pulmonary angiography did not show evidence of PE or obstructive CAD.

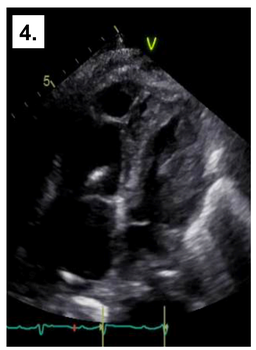
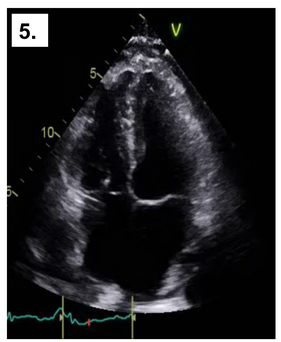


Fig 4 and 5: After cardiac arrest, TTE showed new onset RV failure with dilated RV and elevated pulmonary pressures. After several weeks, RV function normalized.



HOSPITAL COURSE / MANAGEMENT / FOLLOW-UP

- Three weeks later, after recovering and normalizing RV function, he developed large pericardial effusion with cardiac tamponade requiring emergent pericardiocentesis.
- Pericardial fluid cytology with atypical mesothelial cells concerning for a malignant effusion.
- **Follow up TTE upon discharge with fully recovered RV function (after several weeks) and resolution of pericardial effusion**.

DISCUSSION

- We report a case of acute RV decompensation with sudden systemic circulatory collapse in the absence of PE or CAD.
- **In the setting of high risk thoracic surgery the most likely diagnosis was thought to be stress cardiomyopathy.**
- Although rare, given the degree of RV dilation and failure, he was thought to have a variant of Takotsubo cardiomyopathy selectively compromising the RV.

CONCLUSIONS

- **ECMO was effective for cardiac and pulmonary support while RV function recovered**
- **An early invasive approach in the oncologic patient is beneficial as demonstrated in this case**.
- Early performance of coronary angiography allowed to rule out a coronary event and if present to perform early revascularization.
- Early right heart catheterization and pulmonary angiography allows opportunity for catheter-directed administration of thrombolytics, if needed.

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No Disclosures