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Embolized Transcatheter Mitral Valve: Rare But Devastating Complication

Abhishek Saluja
Henry Ford Health System, asaluja1@hfhs.org

Jayakar Guruswamy
Henry Ford Health System, JGURUSW1@hfhs.org

Embolized Transcatheter Mitral Valve: Rare But Devastating Complication

Abhishek Saluja DO, Jayakar Guruswamy MD, Department of Anesthesiology Pain Mgmt & Perioperative Medicine

Henry Ford Health System, Detroit, Michigan

Abstract

Introduction: 83 year old female who presents with heart failure exacerbation due to severe bio prosthetic mitral valve dysfunction
Past Medical History: CHF, paroxysmal atrial fibrillation, CKD Stage III, MVR with St. Jude bio prosthetic valve, Maze procedure, left atrial appendage exclusion, and PFO closure
Why TMVR: Due to her frailty and co-morbidities, she was deemed to not be a surgical candidate. TMVR was attempted
Case Presentation: General anesthesia, OETT, TEE guidance, invasive monitoring, and a sentinel cerebral protection device. During deployment the valve embolized into the LV
The embolized valve was snared and multiple attempts were made unsuccessfully to retrieve the embolized valve percutaneously with balloon dilation
Patient emergently transferred to the OR for retrieval of the mitral valve prosthesis from the LV and subsequent MVR with the Edwards Sapien 3 26 mm valve via median sternotomy, and cardiopulmonary bypass.
Intraop was uneventful and she was transferred to CVICU for recovery on minimal vasopressor support
Patient did not wake up post-operatively and was sent for CT head and CT angiogram head/neck
Complete occlusion of the right MCA with extensive infarct throughout the right MCA distribution and acute infarctions throughout the cerebellar hemispheres and left parietal temporal lobe were found suggestive of embolic stroke
After discussion comfort care was initiated and support was withdrawn leading to demise of the patient.
TMVR is a less invasive alternative in patients with high or prohibitive surgical risk with high rate of successful valve implantation and excellent hemodynamic results
However, periprocedural complications and all-cause mortality are relatively high
Malposition and migration are common, embolization of the valve is a rare but devastating complication
Management includes percutaneous retrieval, may be more challenging than embolized TAVI. Surgical management is often the only option
The embolized mitral valve may be a source of thromboembolism as highlighted here. Management of these patients involves paying meticulous attention to formation of a thrombus and consideration for utilizing a cerebral protection device

History of Present Illness

- 83 year old female who presents with heart failure exacerbation due to severe bio prosthetic mitral valve dysfunction
- Past medical history of CHF, paroxysmal atrial fibrillation, CKD stage III, MVR with St. Jude bio prosthetic valve, Maze procedure, left atrial appendage exclusion, and PFO closure
- Due to her frailty and co-morbidities, she was deemed to not be a surgical candidate. TMVR was attempted

Methods

- General anesthesia, OETT, TEE guidance, invasive monitoring, and a sentinel cerebral protection device. During deployment the valve embolized into the LV
- The embolized valve was snared and multiple attempts were made unsuccessfully to retrieve the embolized valve percutaneously with balloon dilation

Embolized Valve

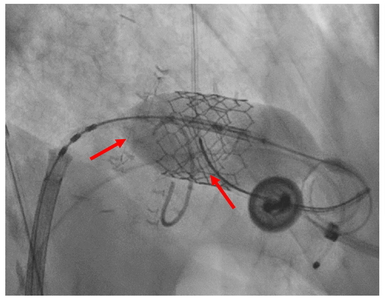

Figure 1. Flouroscopic image showing the trans catheter valve is deployed in the left ventricle rather than at the site of the preexisting mitral valve where you want the valve to be ideally deployed

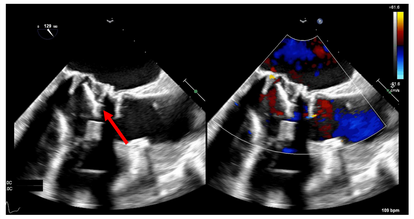

Figure 2. Mid esophageal aortic long axis view via TEE the symbolized trans catheter mitral valve in the left ventricle rather than at the site of the preexisting mitral valve

Patient Transferred to OR

- Patient emergently transferred to the OR for retrieval of the mitral valve prosthesis from the LV and subsequent MVR with the Edwards Sapien 3 26 mm valve via median sternotomy, and cardiopulmonary bypass

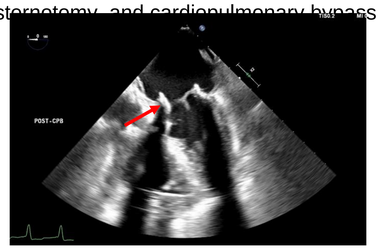

Figure 3. Mid esophageal mid chamber view the new valve is at the proper mitral position

Post Operatively

- Intraop uneventful and transferred to CVICU for recovery on minimal vasopressors
- Patient did not wake up post-operatively and was sent for CT head and CT angiogram head/neck
- Complete occlusion of the right MCA with extensive infarct throughout the right MCA distribution and acute infarctions throughout the cerebellar hemispheres and left parietal temporal lobe were found suggestive of embolic stroke
- After discussion comfort care was initiated and support was withdrawn leading to demise

Discussion

- TMVR is a less invasive alternative in patients with high or prohibitive surgical risk with high rate of successful valve implantation and excellent hemodynamic results
- But, periprocedural complications and all-cause mortality are relatively high
- Malposition and migration are common, embolization of the valve is a rare but devastating complication
- Management includes percutaneous retrieval, may be more challenging than embolized TAVI. Surgical management is often the only option
- The embolized mitral valve may be a source of thromboembolism as highlighted here. Management of these patients involves paying meticulous attention to formation of a thrombus and consideration for utilizing a cerebral protection device

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Thank You

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