



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

☆ **Complex Clinical Cases**

COMPLICATED VENTRICULAR SEPTAL RUPTURE REQUIRING MECHANICAL CIRCULATORY SUPPORT BRIDGE TO HEART TRANSPLANT: A CONSEQUENCE OF LATE PRESENTING MYOCARDIAL INFARCTION IN THE ERA OF COVID-19

Poster Contributions
Sunday, May 16, 2021, 3:45 p.m.-4:30 p.m.

Session Title: Complex Clinical Cases: FIT Ischemic Heart Disease 3
Abstract Category: FIT: Ischemic Heart Disease

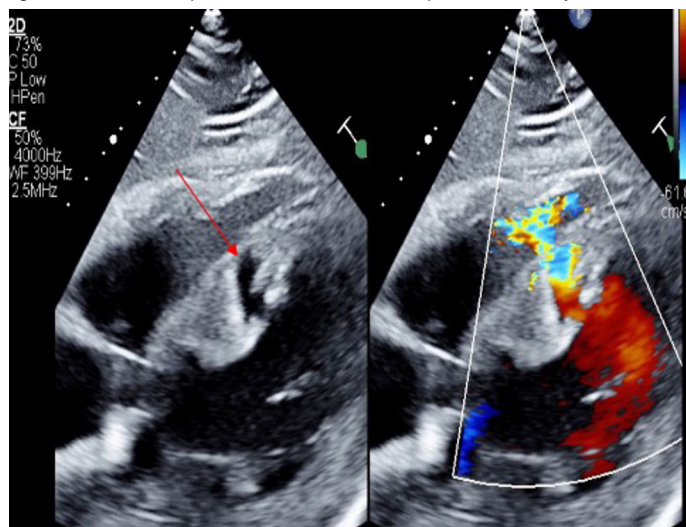
Authors: *Raghav Gattani, Hooman Bakhshi, Emmanuel Ekanem, Mehul Desai, Shashank Sinha, Alan Speir, Ramesh Singh, Matthew Sherwood, Behnam Tehrani, Wayne Batchelor, Inova Fairfax Hospital, Falls Church, VA, USA*

Background: Mechanical complications of post-acute myocardial infarction (AMI) have been on the rise due to a delay in medical care during the COVID 19 pandemic. We present a case of late-presenting AMI complicated by ventricular septal rupture (VSR) and cardiogenic shock (CS) requiring venoarterial extracorporeal membrane oxygenation (VA-ECMO) as a bridge to cardiac transplant.

Case: A 56-year-old male developed VSR following delayed presentation of a 100% occluded proximal LAD. Echocardiogram revealed a large VSR in the distal third of the interventricular septum and a left ventricle (LV) apical thrombus. LV ejection fraction was estimated at 32% with concomitant right ventricular (RV) dysfunction.

Decision-making: Due to apical location of VSR and a LV thrombus, surgical repair was favored. Patient developed cardiogenic shock while awaiting repair. VA-ECMO was initiated with an atrial septal drainage cannula for LV venting. The refractory nature of CS (Table 1) precluded surgical repair. Patient underwent an uncomplicated orthotopic heart transplant and was discharged in stable condition on postoperative day 25.

Conclusion: VSR post AMI carries a dismal prognosis. Optimal timing of repair remains controversial with reported mortality rate of 54.1% with early repair (<7 days). Delayed repair equivocally reduces mortality but often at the cost of interim development of CS. Surgical correction in patients with CS has a reported mortality of 87% and cardiac transplant may be favored in this cohort.



Ventricular Septal Rupture

Table 1. Hemodynamics pre and post VA-ECMO

	Pre-ECMO	Post-ECMO
RAP (mmHg)	11	11
RVP (mmHg)	55/20	55/14
PAP (mmHg)	48/24	45/19
PAPi	2.5	2.4
PCWP (mmHg)	22	20
Cardiac output (L/min)	2.9	6.0
Cardiac index (L/min/m2)	1.2	2.5
CPO (Watts)	0.47	0.9
Lactate (mmol/L)	2.4	0.8
Creatinine (mg/dl)	1.8	0.9
AST/ALT (units/L)	142/281	85/67

VA-ECMO: Venoarterial extracorporeal membrane oxygenation; RAP: right atrial pressure; RVP: right ventricle pressure; PAP: pulmonary artery pressure; PAPi: Pulmonary Artery Pulsatility index= (systolic PAP-diastolic PAP)/RAP; PCWP: pulmonary capillary wedge pressure; CPO: cardiac power output= (mean arterial pressure x cardiac output)/451; AST: aspartate transaminase; ALT: alanine transaminase