

Myocardial infarction complicated by a large ventricular septal defect: a case report

 Siniša Roginić^{1*},
 Tereza Knaflec¹,
 Vito Mustapić²,
 Martina Roginić¹,
Mladen Predrijevac²,
 Krešimir Štambuk²,
 Marija Čajko¹,
 Nikolina Mijač
Mikačić¹,
 Domagoj Futivić¹

¹General Hospital Zabok and Hospital of Croatian Veterans, Zabok, Croatia

²Magdalena Clinic for Cardiovascular Diseases, Krapinske Toplice, Croatia

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***ADDRESS FOR CORRESPONDENCE:** Siniša Roginić, Opća bolnica Zabok i bolnica hrvatskih veteran, Bračak 8, HR-49210 Zabok, Croatia. / Phone: +385-98-341-234 / E-mail: sinisa.roginic@gmail.com

ORCID: Siniša Roginić, <https://orcid.org/0000-0002-0384-8088> • Tereza Knaflec, <https://orcid.org/0000-0002-4915-3935>

Vito Mustapić, <https://orcid.org/0000-0001-5533-7215> • Martina Roginić, <https://orcid.org/0000-0001-5463-5392>

Krešimir Štambuk, <https://orcid.org/0000-0002-9107-6187> • Marija Čajko, <https://orcid.org/0000-0001-7084-707X>

Nikolina Mijač Mikačić, <https://orcid.org/0000-0002-0933-6577> • Domagoj Futivić, <https://orcid.org/0000-0003-4363-1008>

Introduction: Ventricular septal defect (VSD) is severe but fortunately rare mechanical complication of myocardial infarction with high mortality: 30-40%¹, ranging up to 87% if associated with cardiogenic shock². It has been reported to occur more frequently in the anterior than inferior/lateral wall infarction (70% versus 29%), but inferior infarcts are associated with complex VSDs a worse prognosis. Therapeutic options include medical management, surgical and transcatheter repair with variable success¹.

Case report: 58-year-old male patient, smoker with hypertension presented with signs and symptoms of heart failure lasting for 3 days. He did not have chest pain, but 12-lead electrocardiogram showed Q waves in inferior leads with clearly positive troponin (hs troponin I 578.5 ng/l). Physical examination corresponded to Killip class II and peculiar holosystolic precordial murmur was noted which prompted urgent bedside echocardiography. Left ventricle was mildly dilated with akinesia of basal and mid segments of inferoposterior wall. Ejection fraction was estimated 55%, there was mild mitral regurgitation and moderate secondary tricuspid regurgitation due to pulmonary hypertension. Atypical parasternal and subcostal projections revealed large VSD located in inferior part of septum (approximate diameter 3 cm) with massive left to right shunt (**Figure 1**). Patient was immediately transferred to clinical institution with cardiac surgery capacity. Angiography revealed two-vessel disease, including thrombotic subocclusion of right coronary artery mid segment. During angiography his status has worsened further with development of cardiogenic shock despite pharmacological and intraaortic balloon pump support so he underwent urgent operation. Large septal defect was reconstructed combining pericardium with pledgets and double bypass was created (VSM-LAD, RCA). After releasing aortic clamp and restoring circulation there was rupture of myocardial wall next to suture; repeated attempts to stabilize patient failed and he soon died of shock and the multiple organ failure.

Conclusion: Mechanical complications of myocardial infarction are infrequently seen in the era of interventional cardiology (around 1/1000 STEMI patients) but bear significant morbidity and mortality despite early diagnosis. Urgent echocardiography is essential in acute coronary syndrome with signs of heart failure, especially if accompanied with new onset heart murmur.

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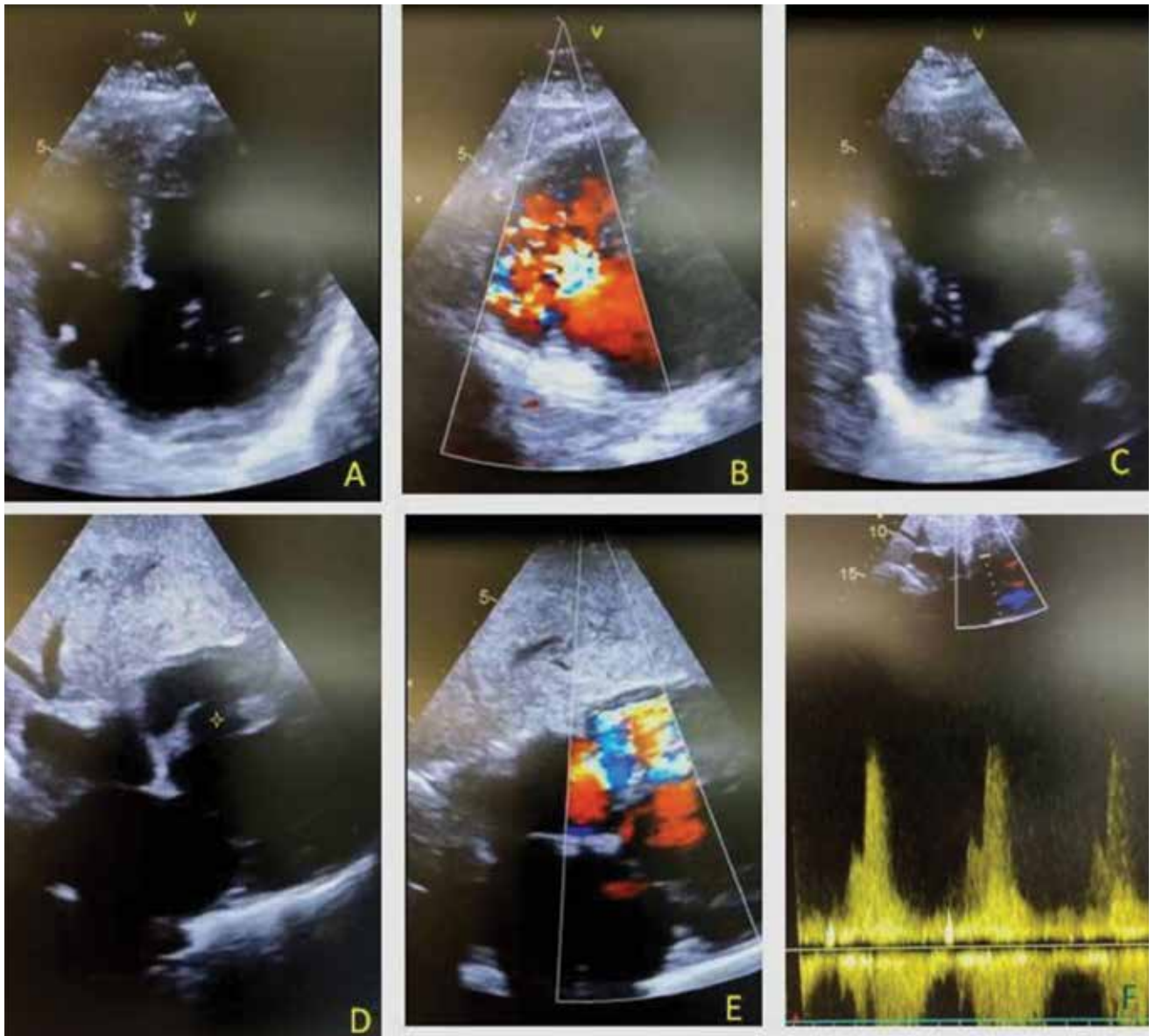


FIGURE 1. A) Atypical parasternal projection showing large defect of basal inferoseptum. B) Massive turbulent left to right shunt. C) Remodeled left ventricle with inferior wall akinesia (A2C projection). D) Subcostal view of septal defect and corresponding shunt (E). F) CW Doppler of high velocity systolic flow through the defect.

LITERATURE

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