31 GIORNATE CARDIOLOGICHE TORINESI

TURIN
October
24th-26th
2019

New Onset Cardiogenic Shock with Left Main Disease.
Clinical Case: The Challenge

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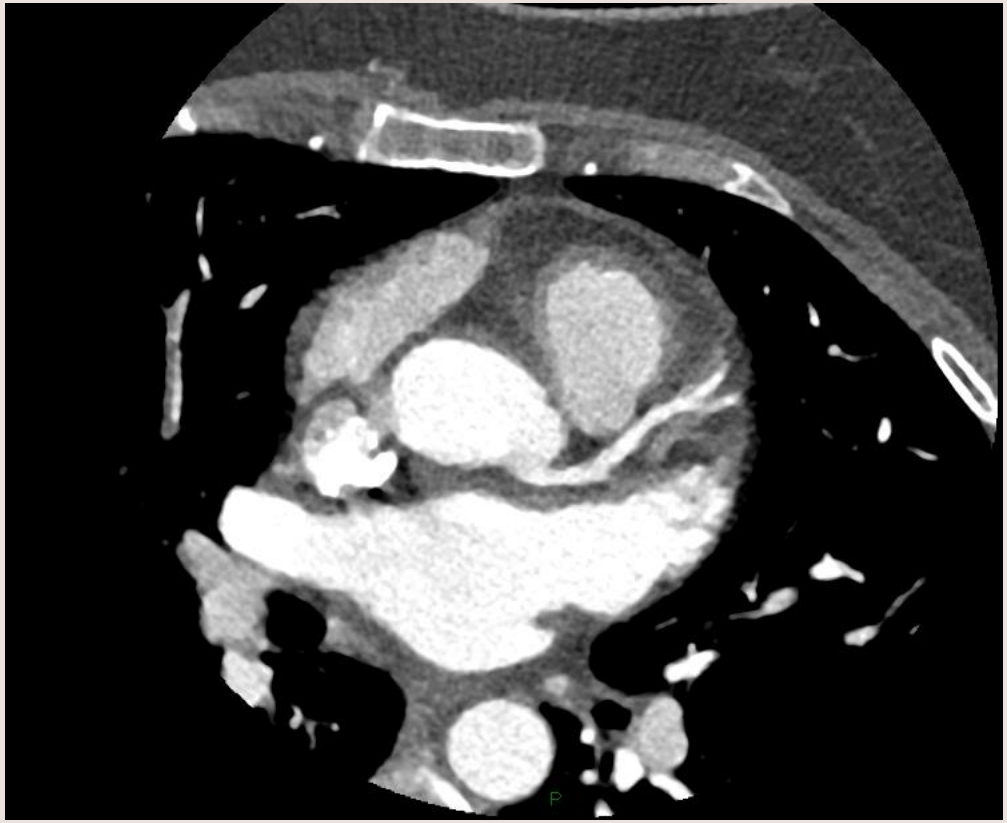
Conflicts of interest

I have no conflicts of interest to disclose.

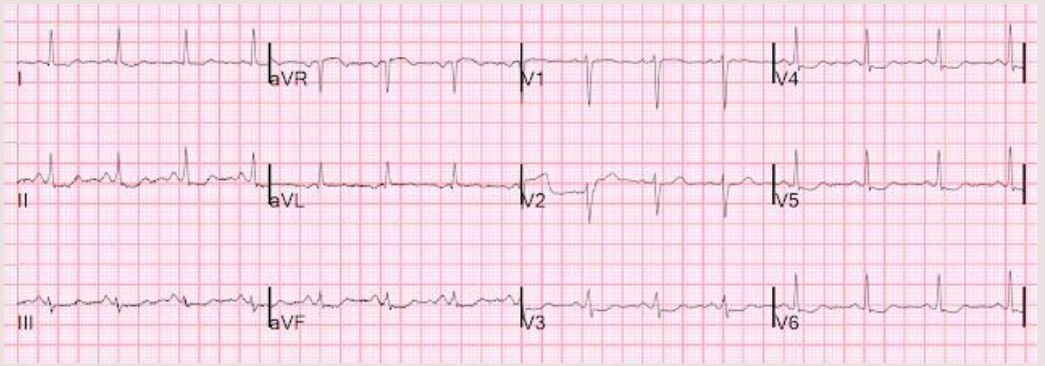
Case Presentation

- 45 year old female patient of Russian decent.
- Past medical history of HBV carrier (treated byentacavir 0.5mg for many years).
- Had undergone cardiac CT angiography two years prior, due to chest pain, which had demonstrated no significant stenosis.
- Echocardiography reported as normal.
- No other significant background diseases.



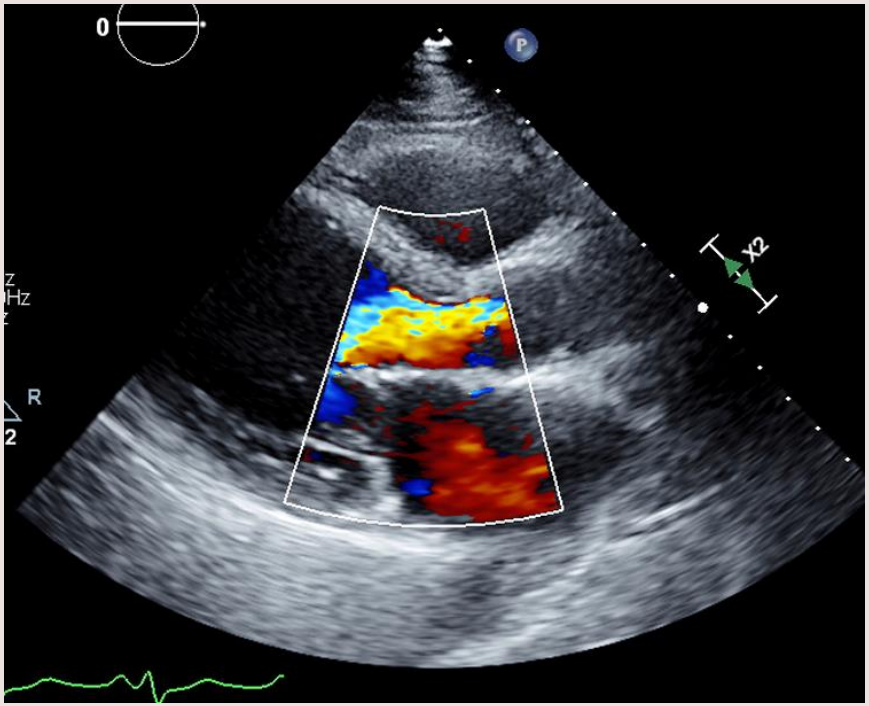
Case Presentation

- Presents to a smaller hospital within the Rabin Medical Center, due to significant chest pain, which has typical angina characteristics.
- Physical examination reveals a widened pulse pressure and a diastolic murmur.
- Troponin in the borderline range (17-20 mg/dL).
- ECG- normal sinus rhythm, diffuse ST depressions.



Echocardiography demonstrates a new severe aortic regurgitation.

Normal left ventricular function, no significant regional wall motion abnormalities.



- A revision of the CT is performed, which confirms no significant coronary stenosis.
- Despite these findings, due to her clinical presentation, it was decided to transfer the patient to our campus for a pre-operative coronary angiogram and subsequent aortic valve replacement.

Coronary angiography

- Right coronary artery is occluded!
- Left main coronary artery seems to have significant stenosis
- Upon first attempt to inject to the left system, the patient develops pulseless electrical activity.
- CPR is immediately performed.

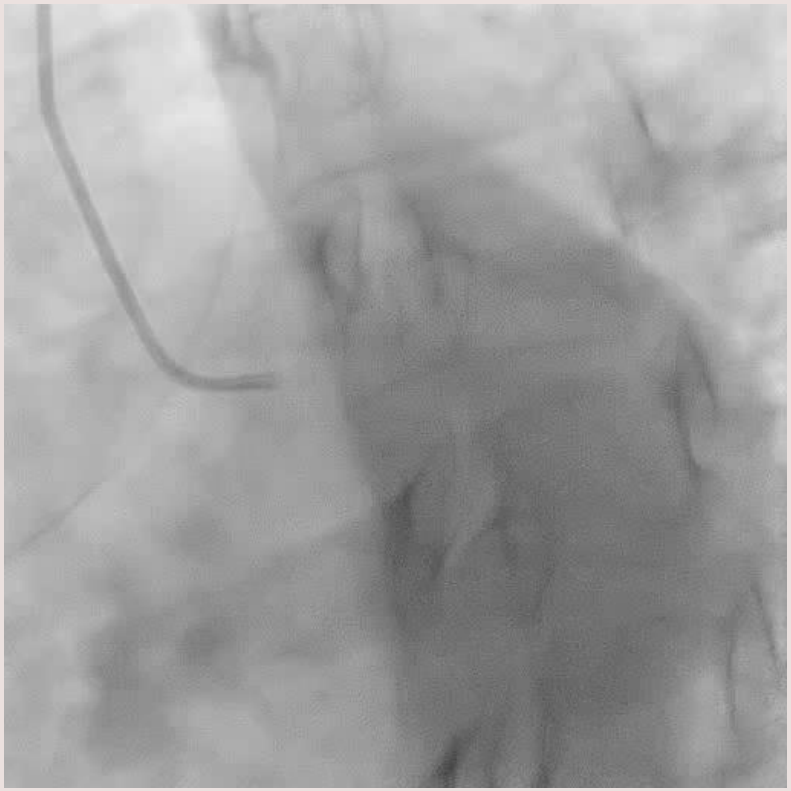
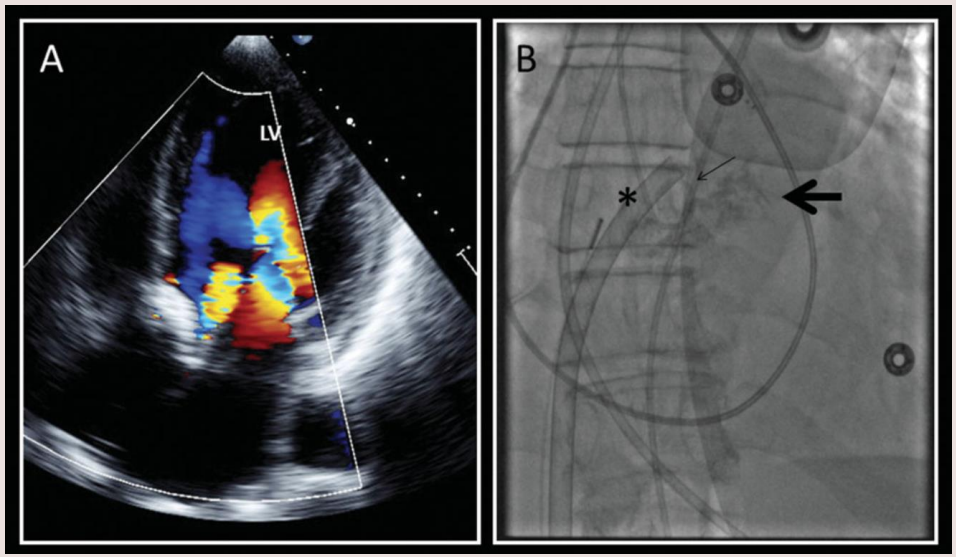


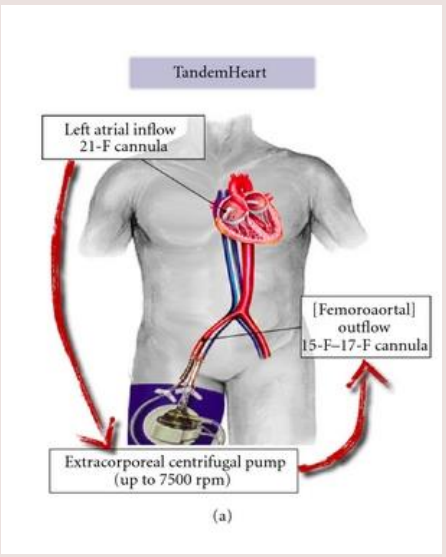
TABLE 5 MCS Device Contraindications and Complications

	IABP	Impella	TandemHeart	VA-ECMO
Contraindications	Moderate to severe AR Severe PAD Aortic disease	LV thrombus Mechanical aortic valve Aortic stenosis with AVA <0.6 Moderate to severe AR Severe PAD Contraindication to anticoagulation	Severe PAD HIT DIC Contraindications to anticoagulation LA thrombus VSD Moderate to severe AR	Contraindications to anticoagulation Moderate to severe AR Severe PAD
Complications	Stroke Limb ischemia Vascular trauma Balloon rupture Thrombocytopenia Acute kidney injury Bowel ischemia Infection	Device migration Device thrombosis Limb ischemia Vascular trauma Hemolysis Infection Stroke	Air embolism Thromboembolism Device Dislodgement Cardiac tamponade Limb ischemia Vascular trauma Hemolysis Infection Stroke	Bleeding Vascular trauma Limb ischemia Compartment syndrome Acute kidney injury Hemolysis Thromboembolism Air embolism Infection Neurological Injury
Bleeding/hemolysis	+	++	++	++
Vascular complications	+	++	+++	++++

Contraindications and complications must be reviewed prior to MCS device use in all patients and can vary according to device.

AR = aortic regurgitation; AVA = aortic valve area; DIC = disseminated intravascular coagulation; HIT = heparin-induced thrombocytopenia; LA = left atrium; LV = left ventricle; PAD = peripheral arterial disease; VSD = ventricular septal defect; other abbreviations as in Table 4.





Catheterization and Cardiovascular Interventions 81:399–401 (2013)

- The patient is crashing! But has aortic regurgitation... What kind of mechanical support can I use?!
- Perhaps perform immediate PCI?
- Finish CPR and reach ROSC first?
- Also: what is the etiology of this rapid progression of LMCA disease?