A Dramatic Case Of Acute Biventricular Failure Secondary To Acute Myocardial Infarction

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Background

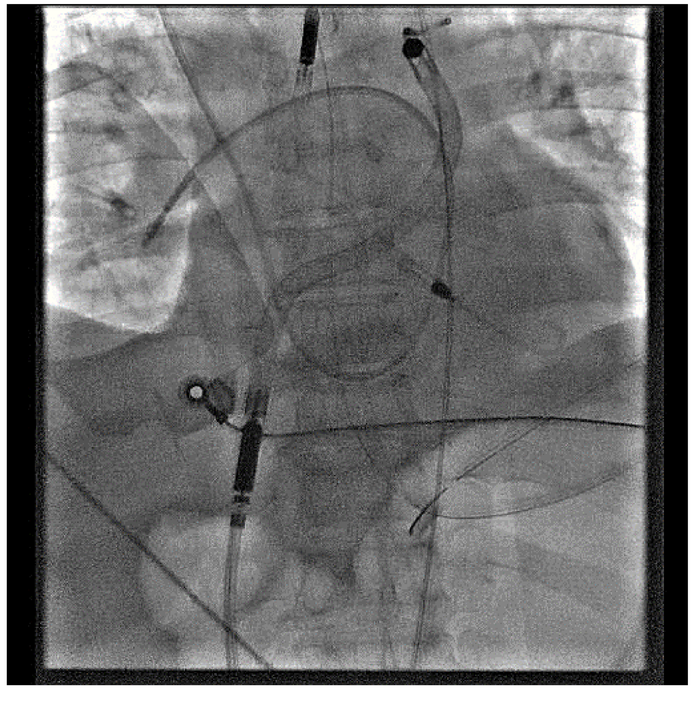
- Cardiogenic shock (CS) with biventricular failure (BiVF) in the setting of acute myocardial infarction (AMI) is associated with significant in-hospital morbidity and mortality. The early identification of cardiogenic shock is essential. Although initial management consists of inotropes and vasopressors, the early use of mechanical circulatory support (MCS) can often lead to favorable outcomes.

Case

- A 71 year-old male with history of diabetes, hypertension, and hyperlipidemia presented to a free-standing ED due to chest pain.
- Shortly after arrival patient went into ventricular fibrillation necessitating defibrillation and CPR for 20 minutes.
- ROSC was achieved but ST-elevations were noted anterolaterally.
- On arrival to cath lab, the patient developed PEA and ventricular tachycardia. He received CPR and DC cardioversion for 18 minutes prior to achieving ROSC.
- Impella CP was inserted, and patient underwent revascularization to 100% proximally occluded LAD.

Case

- Initial labs and hemodynamics revealed a lactic acid of 9.1, BP 85/50 mmHg on 3 vasopressors, PCWP 29 mmHg, and PAPI of 0.68.
- An Impella RP was simultaneously inserted leading to reduction in cardiac filling pressures and improvement in cardiac output.
- Patient was transferred to ICU where he was weaned from vasopressor support, lactic acid normalized to 1.2 and Impella RP and CP were removed on day 3 and 4, respectively.



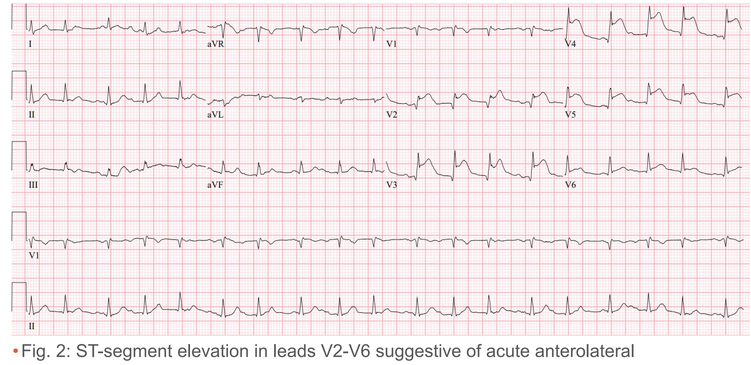
- Fig. 1: Swanz-Ganz catheter along with Impella CP and RP

Discussion

- BiVF secondary to AMI is a conundrum that is difficult to manage and is associated with significant in-hospital morbidity and mortality. Early identification of biventricular cardiogenic shock and implementation of appropriate pharmacotherapy and MCS is essential and can lead to favorable outcomes.

Conclusion

- In the setting of refractory CS with BiVF, combination LV and RV mechanical support with Impella CP and RP can be considered as a salvage treatment modality. This case demonstrates the favorable benefits however, adequate randomized control trials are need to further research this topic.



- Fig. 2: ST-segment elevation in leads V2-V6 suggestive of acute anterolateral myocardial infarction

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