

Paradoxical Hypotension in the setting of IABP

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Background: The left ventricular outflow tract (LVOT) is a region of the left ventricle that lies between the anterior leaflet of the mitral valve and the ventricular septum. Dynamic Left ventricular outflow tract obstruction (LVOTO) has classically been observed in patients with hypertrophic obstructive cardiomyopathy (HOCM) where it occurs secondary to asymmetric septal hypertrophy and systolic anterior motion (SAM) of the mitral valve. However, there are some instances that lead to hypercontractility of the myocardium, and with a combination of other physiologic conditions, result in systolic anterior motion of mitral valve leaflet.

Case Description: We present such a case of an acute inferolateral wall myocardial infarction that was complicated by cardiogenic shock, requiring an intra-aortic balloon pump and inotropic support which paradoxically provoked left ventricular outflow tract obstruction. Reduction of IABP from 1:1 to 1:3 with the addition of IV fluids and B blocker resulted in significant improvement in blood pressure with rapid tapering of pressors.

Conclusion: IABP and inotropes, though helpful in cardiogenic shock have the potential of inducing or worsening the LVOTO, which can lead to a vicious cycle of worsening hypotension and increasing adrenergic drive that further deteriorates myocardial viability. Timely diagnosis with echocardiogram and withdrawal of inotropic and IABP support has the potential to improve hemodynamics and, thereby, outcome.