LV systolic function, heavily compromised at presentation, improves rapidly in a period of days to weeks [1, 5–7].

Reports of Takotsubo syndrome after open cardiac surgery are few. It is possible that some cases of transient LV spherization after mitral valve replacement surgery described previously to the recognition of this phenomenon were cases of Takotsubo syndrome [2].

It is important to consider Takotsubo syndrome in the differential diagnosis of patients presenting cardiogenic shock after cardiac surgery. Dyskinetic apical and mid-ventricular segments with concomitant hyperdynamic basal segments may result in hemodynamically significant dynamic left ventricular intracavitary obstruction [1, 7, 8]. Hemodynamic impairments in this situation require significantly different management from that needed for hypotension due to pure pump failure. In this special hemodynamic situation, it is recommended the administration of beta-blockers to increase diastolic ventricular filling time and left ventricular end-diastolic volume, administration of phenylephrine to increase afterload with subsequent reduction of the intraventricular gradient, and administration of fluid resuscitation if pulmonary congestion is not present.

References


eComment: Re: Takotsubo cardiomyopathy after elective mitral valve replacement

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Stress cardiomyopathy is a novel clinical syndrome affecting predominantly elderly female patients. The authors describe one of the first cases of Takotsubo cardiomyopathy after elective mitral valve replacement [1]. Clinical and diagnostic aspects accumulated and described in this article are important for understanding the pathophysiology of this disorder.

Our data show that this pathology concerns 1% of individuals with suspected acute myocardial infarction [2]. Among the patients with Takotsubo cardiomyopathy the left ventricular dysfunction is likely to recover rapidly, but the management of implications (contrary to atherosclerotic myocardial infarction/ischemia) are likely different. Although different complications (17%, 109/625), such as dysrhythmias (39%, 32/82), heart failure (50%, 41/82), and even cardiogenic shock (23%, 18/80 with acute heart failure) occurred, the prognosis appeared to be much better [2]. Moreover, some patients required intravenous dopamine or Dobutamine infusion and mechanical supports, including a percutaneous cardiopulmonary support system. Although almost all patients with this syndrome were reported to have a favorable prognosis (mean period of recovery 3 days [2], EF (on admission) 41.3±1.9% vs. EF (recovery) 63.6±1.0% (P=0.000) [2], careful clinical observation for critical complications or recurrences is recommended, especially after cardiovascular interventions, as described in the presented case [1]. In our clinic, we have observed two clinical cases of Takotsubo cardiomyopathy after excessive emotional stress: one in an elderly woman (52 years) and one in a young man (23 years) [2].

We agree that it is important to consider Takotsubo syndrome in the differential diagnosis of patients presenting cardiogenic shock after cardiac surgery and that the administration of beta-blockers in this hemodynamic situation after selective mitral valve replacement is recommended as well as the administration of fluid resuscitation if pulmonary congestion is not present. The mechanism of this modality remains unclear, although exaggerated sympathetic simulation has been considered to play a major role [3, 4]. Several mechanisms were suggested as the leading factors: coronary vasospasm (epicardial and microvascular ischemia), catecholamine-mediated toxicity, excessive sympathetic activation.

A number of unanswered questions remain for this reversible form of cardiomyopathy. Why do middle aged/elderly women appear particularly susceptible to this disorder (mean age 66.2±1.2 [2])? How does profound stress trigger its sudden onset? Why is the left ventricular apex selectively vulnerable to regional ballooning?

Obviously, we urgently need more information on the pathophysiology and optimal treatment of this syndrome. Research of this disorder, especially after open heart surgery, is actual and should be carried out in centers for cardio-vascular surgery to create optimal diagnostic criteria and treatment.

References


