Japanese Octopus Traps & Broken Hearts: Takotsubo Cardiomyopathy

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Japanese Octopus Traps & Broken Hearts: Takotsubo Cardiomyopathy
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Pathophysiology
Signs & Symptoms

TTC frequently mirrors a ST-segment elevated myocardial infarction (STEMI) and/or acute coronary syndrome (ACS) with chest pain, dyspnea, and/or signs of heart failure (Reader & Prasad, 2015) with severe cases presenting in cardiogenic shock (Liang, Cha, Oh, & Prasad, 2013). Treatment for TTC is generally supportive, with the disease being predominantly benign in nature, though some individuals presenting with severe symptoms experience high mortality rates (Liang, Cha, Oh, & Prasad, 2013).

The onset of the disease is often caused by an intense emotional stressor such as the loss of a loved one, an interpersonal conflict or a catastrophic medical diagnosis (Sharkey, Pink, Lesser, Gardner, Maron, & Maron, 2014). However, physical triggers such as surgery, trauma, or respiratory failure, while some have no obvious inciting events or diseases. Women, particularly postmenopausal women, are more likely to develop TTC with approximately 90% of cases occurring in females (Mehrota, Riggs, & Kisters, 2015).

The symptoms in TTC are both a killing and a curse as patients who experience the aforementioned symptoms typically seek medical evaluation relatively quickly as they often associate the symptoms with a heart attack. These symptoms can readily be interpreted as ACS or STEMI by healthcare providers, and therefore, between the two differential diagnoses, individuals presenting with similar symptoms are often treated alike until proven otherwise (Scantlebury & Prasad, 2014).

Monitoring

Before TTC can be diagnosed with confidence, all emergency department and hospital evaluations, diagnostic imaging, and laboratory exams will be interpreted in light of the clinical presentation of patients with TTC. TTC is usually triggered as a result of physical exertion or emotional stress (Reader & Prasad, 2014).

Due to the broad differential diagnosis of patients presenting with acute chest pain, the diagnostic workup for TTC should be performed expeditiously (Liang, Cha, Oh, & Prasad, 2013).

The most common causes of death from TTC initially present with acute coronary syndrome (ACS) with chest pain, dyspnea, and/or signs of heart failure (Reader & Prasad, 2015) with severe cases presenting in cardiogenic shock (Liang, Cha, Oh, & Prasad, 2013). Treatment for TTC is generally supportive, with the disease being predominantly benign in nature, though some individuals presenting with severe symptoms experience high mortality rates (Liang, Cha, Oh, & Prasad, 2013).

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- The symptoms in TTC are both a killing and a curse as patients who experience the aforementioned symptoms typically seek medical evaluation relatively quickly as they often associate the symptoms with a heart attack. These symptoms can readily be interpreted as ACS or STEMI by healthcare providers, and therefore, between the two differential diagnoses, individuals presenting with similar symptoms are often treated alike until proven otherwise (Scantlebury & Prasad, 2014).
- Ultimately, regardless of the cause, treatment must be provided to avoid worsening of LV dysfunction, which can lead to ventricular arrhythmias, permanent ventricular dysfunction and/or death. Since TTC initially presents in a similar fashion as ACS, the treatment of the patient should follow ACS guidelines initially until ACS can be ruled out and TTC is confirmed.

Intervention

- TTC is usually triggered as a result of physical exertion or emotional stress (Reader & Prasad, 2014).
- Due to the broad differential diagnosis of patients presenting with acute chest pain, the diagnostic workup for TTC should be performed expeditiously (Liang, Cha, Oh, & Prasad, 2013).

Pathophysiologic Mechanisms

- TTC frequently mirrors a ST-segment elevated myocardial infarction (STEMI) and/or acute coronary syndrome (ACS) with chest pain, dyspnea, and/or signs of heart failure (Reader & Prasad, 2015) with severe cases presenting in cardiogenic shock (Liang, Cha, Oh, & Prasad, 2013). Treatment for TTC is generally supportive, with the disease being predominantly benign in nature, though some individuals presenting with severe symptoms experience high mortality rates (Liang, Cha, Oh, & Prasad, 2013).

Absence of obstructive coronary disease or angiographic evidence of acute plaque rupture.
- The regional wall motion abnormalities extend beyond a single epicardial vascular distribution; a trigger is often, but not always present.
- Dunn relaxant and/or diastolic dysfunction of the left ventricular mid-segments with or without asynergy; the regional wall motion abnormalities extend beyond a single epicardial vascular distribution; a trigger is often, but not always present.
- 3. New electrocardiographic abnormalities (either ST-segment elevation and/or T-wave inversion) or modest elevation in cardiac troponin.
- 4. Absence of phelgmacrosis or myocarditis.