Peri-operative Cardiogenic Shock Revealing Takotsubo Cardiomyopathy with Concomitant SCAD: A Structured Case Report

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Abstract:

Background: Takotsubo cardiomyopathy is a reversible cause of acute left ventricular systolic dysfunction, often triggered by physical stress and frequently mimicking acute coronary syndrome. Peri-operative cardiogenic shock as the initial manifestation remains uncommon and poses significant diagnostic and management challenges.

Case Presentation: A 50-year-old woman with hypertension, dyslipidaemia, and known moderate LAD atheroma presented with CT-confirmed acute appendicitis. During induction of general anaesthesia for emergency laparoscopic appendicectomy, she developed abrupt haemodynamic collapse (heart rate 150 bpm, profound hypotension) refractory to fluid resuscitation and standard vasopressors, but transiently responsive to adrenaline boluses. Surgery was aborted and he was transferred to ICU on noradrenaline support. ECG demonstrated new anterior T-wave inversion and ST elevation in V2–V3. High-sensitivity troponin peaked at 567 ng/L. Bedside echocardiography revealed apical hypokinesis with basal segment preservation and an estimated LVEF of 45%, consistent with stress-induced cardiomyopathy. Coronary angiography demonstrated minor distal LAD atheroma and appearances consistent with spontaneous coronary artery dissection in the distal posterior descending artery, without indication for intervention. Appendicitis was managed conservatively with intravenous antibiotics. Guideline-directed heart failure therapy was initiated.

Results: Haemodynamics stabilised with supportive care, allowing weaning of inotropes. Serial echocardiography demonstrated progressive recovery of left ventricular function. Cardiac magnetic resonance imaging at three weeks showed normal biventricular size and systolic function (LVEF 59%) without late gadolinium enhancement, confirming reversible myocardial dysfunction.

Conclusion: This case highlights peri-operative Takotsubo cardiomyopathy presenting with cardiogenic shock in the setting of acute surgical stress, with concomitant SCAD identified on angiography. Multimodality imaging was pivotal in differentiating stress cardiomyopathy from acute coronary syndrome and guiding conservative management. Early recognition and supportive therapy resulted in complete recovery of ventricular function.