
Atypical or Variant stress cardiomyopathy

Sir,

We would like to describe atypical or variant type of stress cardiomyopathy (SCM) wherein there is no involvement of the apical segment of the heart, in the background of recent publication in Indian Journal of Anaesthesia.^[1] The prevalence of SCM is estimated to be 1.2–2.2%, and the atypical SCM constitutes 40% of these cases.^[2] Intravenous administration of catecholamines and adenosine receptor antagonists has been reported in association with reverse SCM.^[3]

We hereby report a case of a young woman who developed atypical SCM postoperatively. A 23-year-old female with refractory chylous ascites was posted for surgical sealing of chylous leak. She had undergone diagnostic laparoscopy 1 week back, wherein 10 litres (L) of ascitic chylous fluid was removed. She was thin built, malnourished and had recurrence of ascites which was tense.

She was given general anaesthesia combined with epidural analgesia (put on pre-induction, under local anaesthesia). On opening the abdomen, there were multiple sites of chylous leak, and the surgery took 7–8 h. She lost around 5–6 L of ascitic fluid, which was replaced with albumin (8 g/L loss). Central venous

pressure was maintained between 6 and 10 mmHg. During the surgery, she developed hypotension, which did not respond to intravenous fluids. Noradrenaline, vasopressin and adrenaline were started subsequently. Intraoperatively, there were no electrocardiographic (ECG) changes. At the end of the surgery, she was on only adrenaline 0.16 µg/kg/min. She was extubated and shifted to the Intensive Care Unit. Her total input was 8000 ml of crystalloids and 1000 ml of colloids. Total urine output was 1050 ml and chylous tap was 5600 ml.

On the post-operative day 1, she had an episode of sinus tachycardia which soon returned to normal without any intervention. After 2 h, her ECG showed ST elevation in I, aVL, V5-V6 leads and T inversion in V1-V2 [Figure 1]. Echocardiogram showed moderate left ventricular (LV) dysfunction and inferior wall hypokinesia. Troponin levels and emergency coronary angiogram done were normal; hence, a diagnosis of inverted SCM was made. She was treated with carvedilol, heparin and noradrenaline. She was discharged after 4 weeks with normal ECG, echocardiogram [Figure 2] and stable haemodynamics, with no chylous leak.

Four types of atypical SCM have been described depending on the patterns of LV involvement:^[4,5] (1) inverted/reverse (2) mid-ventricular (3) localised and (4) global type.

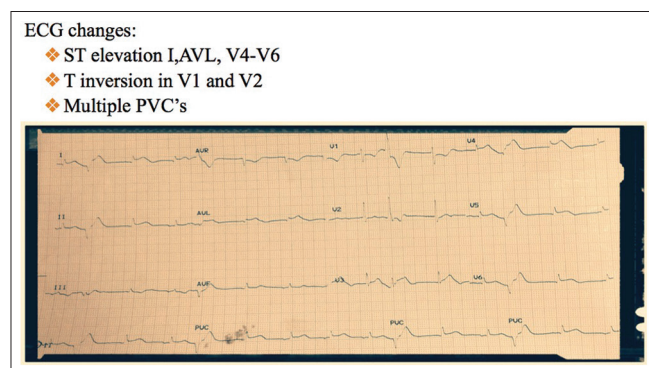


Figure 1: Electrocardiograph 1

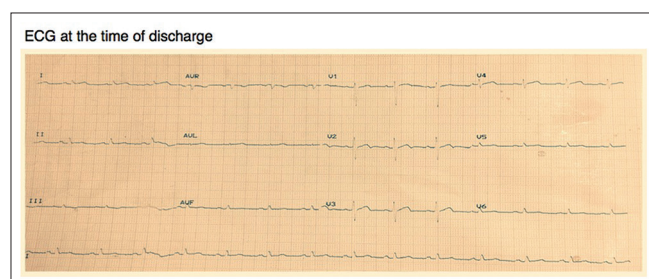


Figure 2: Electrocardiograph 2

The difference in the distribution, density and sensibility of adrenergic receptors over the myocardium determines the area of hypokinesia.^[4,6] The area with a highest density of adrenergic receptors being the most affected. The most common of these forms is the inverted type with hyperdynamic apex and akinetic base of the LV.^[6] This phenomenon explains why typical SCM occurs more often in older patients where adrenoceptors density in the apex is reduced because of hormonal change, while atypical variant occurs in younger patients.^[2,4]

Inverted SCM is more often associated with either mental or physical stress. It presents with a lower prevalence of T-wave inversion.^[4] Release of troponin is higher, which is the consequence of the larger muscle region involved. Natriuretic peptides are more elevated in apical and mid-ventricular patterns, which is evident by more severe symptoms.

Younger patients with a poor general condition when undergoing major surgeries can develop SCM perioperatively. Refractory intra-operative hypotension treated with catecholamines might be the cause. This can be atypical in presentation. Increased awareness leads to timely use of intra-operative trans-oesophageal echocardiogram, early diagnosis and proper intervention. As recurrence rate is high, due care is required during future surgeries also.

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Conflicts of interest

There are no conflicts of interest.

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