

## Anesthetic management in a patient with apical ventricular pseudoaneurysm for a non-cardiac surgery

Dear Editor,

Left ventricle aneurysms (LVA) consist of thin, akinetic, or dyskinctic ventricular wall, and can occur as a complication of acute myocardial infarction (MI), trauma, or cardiac surgery. We are presenting the case of a 55-year-old male, diagnosed with apical ventricular pseudoaneurysm, posted for semi-emergent transurethral resection of bladder tumor. He had a history of myocardial infarction and angioplasty 2 years ago. His pre-operative hemoglobin was 10.8mg/dl and other blood investigations were normal. ECG revealed left ventricular hypertrophy and q waves in leads V1-V6, left ventricular ejection fraction was 25%; with severe LVSD, Grade I LVDD and an apical aneurysm in echocardiography.

Inside OR, monitors including ECG, invasive blood pressure (IBP), pulse oximetry, urine output and temperature were attached. Ampoules of dobutamine, epinephrine, nitroglycerine, and nitroprusside were kept and an infusion of dobutamine, emergency cart and defibrillator were kept ready. The baseline heart rate was 64/min, BP-108/68mmHg and oxygen saturation was 98%. Premedication was done with midazolam (0.3mg/kg) and fentanyl (2mcg/kg) and anesthesia was induced with etomidate (0.3mg/kg). Lignocaine (1.5mg/kg) was administered intravenously 90 s prior to intubation. Intubation was done by a senior anesthesiologist and anesthesia maintained on low flow oxygen, nitrous oxide, and sevoflurane (2%). Intraoperatively, mean arterial pressure and heart rate were maintained in the range of 60–70 mmHg and 55–70 beats/min, respectively. The resection was completed in 90 min during which the total blood loss was 120ml and 800ml of Ringer lactate was infused. We encountered a single episode of hypotension (70/40mmHg), and was managed using bolus of 3 mg of mephentermine. Analgesia was supplemented with fentanyl and 1g of paracetamol. Adequate depth of anesthesia, analgesia, normocapnia, and adequate volume status was achieved throughout the surgery to prevent any deleterious hemodynamic responses. The patient was extubated in a deeper plane of anesthesia. The postoperative period was uneventful and the patient was

discharged after 5 days with subsequent referral to CTVS department.

LVA develops in 8–15% of patients with MI and 80% are located in the anterior and apical ventricle walls.<sup>[1,2]</sup> Left ventricular pseudoaneurysm is a rare complication after MI. The pathophysiological implications include a cautious watch and timely intervention for the complications like congestive heart failure, ventricular arrhythmias, systemic embolization from an intracavitary thrombus, cardiac arrest, and catastrophic ventricular wall rupture. The rupture risk for an unmanaged LV pseudoaneurysm is 30-45%, with nearly 50% mortality.<sup>[3,4]</sup>

An important consideration is that both hypertension and hypotension are deleterious. Hypotension causes an increased risk of pump failure and hypertension causes distension of LV cavity, thereby increasing the rupture risk.<sup>[5]</sup> Special care is demanded at intubation and extubation, ensuring minimal cardiac compromise. Drugs (ketamine, pancuronium) having vagolytic or sympathomimetic action should be avoided.

Anesthetic management involves a cautious interplay of strategies aiming to prevent the catastrophic risk of aneurysm rupture while maintaining an optimal blood pressure to ensure adequate vital organ perfusion.

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### Conflicts of interest

There are no conflicts of interest.

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