Large left ventricular thrombus with malignant left MCA infarct for emergency decompressive craniectomy

Dear Editor,

Left ventricular thrombus (LVT) is an established cause of stroke, especially in the setting of ischemic and nonischemic cardiomyopathies.[1] The management of such patients requiring neurosurgery is rare and highly challenging. These patients need to be treated through a multidisciplinary team to provide effective care.

A 35-year-old male patient presented with sudden onset of right-sided weakness, inability to speak, and deviation of angle of mouth to left. His Glasgow coma scale (GCS) was E2M5VA with right upper motor neuron facial palsy and right hemiplegia. His CT brain showed left middle cerebral artery territory infarct with significant mass effect and midline shift [Figure 1a]. His ECG showed old anteroseptal wall myocardial infarction. Bedside transthoracic echocardiography (TTE) revealed hypokinesia of anterior-apical segment and free-floating thrombus in the left ventricle [Figure 1b]. After the discussion of risks and benefits of emergency decompressive craniectomy including perioperative complications anticipated, a decision to operate was made in the operating room. Standard monitoring was initiated. After preoxygenation, the patient was induced with IV (intravenous) fentanyl 2 mcg/kg and titrated doses of IV thiopentone 1–2 mg/kg. For obtundation of intubation response lignocaine 2% (1.5 mg/kg) and esmolol 0.5 mg/kg were used. Anesthesia was maintained with oxygen, air, and sevoflurane 1.5–2%. Intraoperative fluid administration was guided by pulse pressure variation. The intraoperative period was uneventful. Immediate postoperative GCS was E3M5Vt. He was electively ventilated in ICU and was extubated the next day. After 48 h, the CT brain showed adequate decompression with no hemorrhage. IV heparin 5000 units S/C QID and

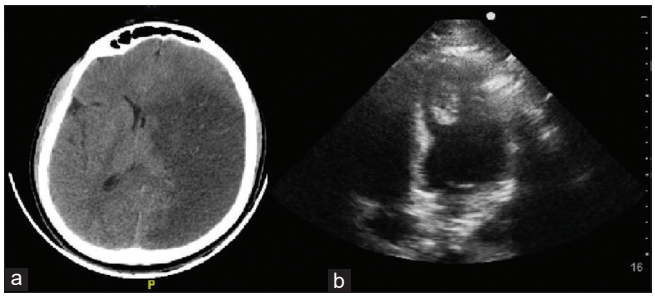

Figure 1: (a). CT brain image showing left MCA infarct, (b). Ultrasound image showing left ventricular mobile protruding thrombus

oral antiplatelets were started. He was subsequently started on oral warfarin and was discharged after 1 week.

Coronary artery disease, large stroke on CT/MRI, atrial fibrillation, and ECG evidence of ischemia are risk factors for intracardiac thrombus. The incidence of intracardiac thrombus is 25% in stroke patients.[2] In our patient, there was no history but the ECG revealed evidence of an old myocardial ischemia. Myocardial hypokinesia could possibly lead to stagnation and thrombus.[3] Protruding and mobile thrombus carries a higher risk of systemic embolization compared to an immobile, adherent thrombus.[2] Contrast enhanced-MRI is better than TTE to detect small ventricle thrombi.[4] Continuous transcranial Doppler can detect microemboli but it is not feasible during neurosurgery. Anesthetic challenges include risk for systemic embolization, worsening of ventricular dysfunction, arrhythmias, and anticoagulation therapy. Intraoperative goals are to maintain sinus rhythm (as tachycardia and arrhythmia increase the risk of embolism), maintain euvolemia (to maintain cardiac output), and avoid hypotension (to maintain coronary and systemic perfusion) or hypertension (to decrease the risk of bleeding). A specific postoperative challenge includes a need for anticoagulation and antiplatelet therapy. We initiated unfractionated heparin after 48 h of surgery following imaging. However, there is evidence for administration earlier (at 24 h) without an increase in the risk of postoperative bleeding in neurosurgical patients.[5] Overall, comprehensive management of large stroke secondary to LVT requiring surgery needs a multidisciplinary approach for careful assessment of risks, planning for managing specific challenges, and meticulous execution to provide the best outcome.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and othe r clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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Access this article online	
Quick Response Code:	Website: www.joacp.org
	DOI: 10.4103/joacp.JOACP_267_19

How to cite this article: Goyal A, Srinivasaiah B, Kumar MK, Paul A. Large left ventricular thrombus with malignant left MCA infarct for emergency decompressive craniectomy. J Anaesthesiol Clin Pharmacol 2021;37:489-90.

Submitted: 13-Aug-2019 **Revised:** 06-Jan-2020
Accepted: 24-Feb-2020 **Published:** 12-Oct-2021