Anesthetic management of a rare case of Takayasu’s arteritis posted for total abdominal hysterectomy

Sir,

Takayasu’s arteritis (TA) is an inflammatory and stenotic disease of medium- and large-sized arteries characterized by a strong predilection for the aortic arch and its branches. For this reason, it is often referred to as the aortic arch syndrome. It is 8 times more common in women than in men, with a typical onset at the age of 25-30 years. It has a world-wide distribution but is most common in Asia. Hypertension occurs in 32-93% of patients and contributes to renal, cardiac, and cerebral injury.

A 48-year-old woman from New Delhi, India, who is a known case of TA for 25 years, hypertension for 20 years, hypothyroidism for 15 years, coronary artery disease (CAD) for 5 years, with fibroid uterus was posted for elective total abdominal hysterectomy at our institution.

The patient had drug eluting stents placed in the left anterior descending artery and left renal artery 5 years previously. At presentation, the patient had good exercise tolerance and complained of only gynecological symptoms. Post-CAD, the patient was on the following oral medications: amlodipine, telmisartan, metoprolol, ecosprin and thyroxine. The patient was off glucocorticoids for the past one and a half years.

Her weight was 60 kg, and height was 154 cm. The left radial and brachial arterial pulses were absent. Blood pressure in the right arm was 140/70 mmHg, heart rate 68 bpm (right radial artery). Peripheral pulses of the lower limb were well-appreciated. There was no murmur or associated bruit. Lower limb blood pressure was 146/78 mmHg. Airway examination was within the normal limits with a Mallampatti score of II. Blood investigations were within normal limits. Chest roentgenography was non-contributory. Electrocardiogram (ECG) showed left axis deviation and left ventricular hypertrophy. An echocardiography evaluation reported an ejection fraction of 60% with grade-I diastolic dysfunction, and no valvular or regional wall motion abnormalities.

Carotid Doppler was performed bilaterally to exclude the presence of thrombus and to determine the diameters of the internal and external carotid arteries.

The patient was taken to the operating room. Non-invasive blood pressure, SpO₂ probe and five-lead ECG were applied. The right radial artery was cannulated prior to induction of anesthesia after a modified Allen’s test.

Anesthesia was induced with intravenous midazolam 1 mg, fentanyl 100 μg, propofol 100 mg and vecuronium bromide 5 mg. Patient was mask ventilated by a mechanical ventilator to achieve normocarbia with O₂ and N₂O and isoflurane (0.9-1 MAC) for approximately 3 min. The trachea was then intubated using endotracheal tube of 7 mm internal diameter. After confirming endotracheal placement, patient was mechanically ventilated with a tidal volume of 400 ml, respiratory rate 12/min maintaining EtCO₂ 32-35 mmHg. An esophageal temperature probe was inserted. The patient was maintained on O₂, N₂O and isoflurane (MAC 1).

The case progressed uneventfully. The vital parameters remained stable throughout the course of the surgery. The urine output was approximately 50 ml/h. Appropriate pain management was planned by an ultrasound guided bilateral transverse abdominis plane block (bupivacaine-40 ml 0.25%) prior to extubation.

At the end of surgery, the effect of muscle relaxant was reversed with neostigmine (2.5 mg) and glycopyrrolate (0.4 mg) prior to extubation. The recovery period and post-operative course were unremarkable.

Anesthesia for patients with TA is complicated by their severe uncontrolled hypertension, end-organ dysfunction, stenosis of major blood vessels, and difficulties encountered in monitoring arterial blood pressure. Blood pressure control is of paramount importance since patients with TA can have arterial aneurysms and cerebral dysfunction from carotid occlusion. Reduced cerebral pulmonary and coronary blood flows, systemic and pulmonary hypertension, and adrenal suppression due to chronic steroid therapy may lead to cardiorespiratory instability during and after anesthesia.

The patient demanded general anesthesia because epidural anesthesia had been inadequate during her previous caesarean section. This necessitated tracheal intubation and general anesthesia.

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Literature review shows that both regional and general anesthesia have been successfully employed in such cases. However, the associated sympathetic blockade-induced hypotension may compromise regional circulation.

Takayasu’s disease is a rare, but potentially serious adversary for the anesthesiologist. However, when armed with sufficient
knowledge and appropriate preparedness, such cases can be dealt deftly. This however does not rule out the possibility of catastrophic complications that might be encountered in a small minority of such patients.

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