
Continuous spinal anaesthesia for caesarean section in a patient with peripartum cardiomyopathy

Sir,

Peripartum cardiomyopathy leading to decreased ejection fraction affects the parturient during late pregnancy or immediately after delivery. Anaesthetic management of a patient with peripartum cardiomyopathy poses a great challenge

to anaesthesiologist. Goals of anaesthetic management include reduction in preload and afterload and prevention of further decrease in cardiac contractility.^[1] We present a case of a patient with peripartum cardiomyopathy scheduled for caesarean section, managed successfully with continuous spinal anaesthesia.

A 25-year-old female weighing 65 kg was scheduled for caesarean section. She complained of palpitations 7 days back for which she was admitted in cardiac intensive care unit (ICU). At that time she was breathless with tachycardia (pulse rate 160/min).

She received digoxin, metoprolol, furosemide, and subcutaneous heparin. Echocardiography revealed moderate mitral regurgitation, global left ventricular hypokinesia with ejection fraction of 20% with severe left ventricular dysfunction. On the evening prior to surgery (7 days after admission in cardiac ICU), she was comfortable with blood pressure 112/64 mm Hg and pulse rate 90/min. ECG was normal. Enoxaparin was stopped and risks were explained.

In the operating room, standard monitors were attached which included blood pressure, pulse oximeter and electrocardiography. Intravenous line was secured with 18 G cannula. After local anaesthetic infiltration, radial artery cannulation was done and intraarterial blood pressure monitoring was started. Continuous spinal anaesthesia was planned for the procedure. Lumbar puncture was done with 18 G epidural Touhy needle and epidural catheter was inserted in intrathecal space successfully. A total of 1 mL of 0.5% heavy bupivacaine was given through the epidural catheter initially. After that bupivacaine was given in increments of 0.3, 0.3, 0.2, and 0.2 mL. After about 25 min, adequate level was achieved for surgery. After delivery of the baby, oxytocin was given slowly (20 U/500 mL of 0.9% saline at 40 mU/min) to prevent sudden vasodilatation leading to hypotension and tachycardia. 1 L Ringer Lactate was given intraoperatively. Surgery lasted for 1 h. There was less than 10% fall in mean arterial pressure and the patient remained haemodynamically stable. Postoperatively patient was stable with blood pressure of 110/66 mm Hg and pulse rate 90/min. Patient was monitored for 2 h. Spinal catheter was removed and the patient was shifted to cardiology ward. Echocardiography was done on 7th day which revealed same findings as preoperatively. She was discharged on 10th postoperative day in stable condition.

Patient with peripartum cardiomyopathy for caesarean section poses a great challenge to anaesthesiologist. A team approach involving anaesthesiologist and cardiologist helps in better management. Goals of anaesthetic management are preservation of cardiac contractility and maintenance of blood pressure and heart rate. Regional anaesthesia decreases both preload and afterload due to sympathetic blockade and hence is beneficial in such patients. So, we considered it to be safer than general anaesthesia.

Options of regional anaesthesia available with us were single shot spinal anaesthesia, epidural

anaesthesia, combined spinal epidural anaesthesia, and continuous spinal anaesthesia. Single shot spinal anaesthesia could result in sudden haemodynamic variations. Though epidural anaesthesia provides the advantage of graded block and less haemodynamic variations but its disadvantages are failure or patchy block. So, we chose continuous spinal anaesthesia. Continuous spinal anaesthesia helps to establish the block gradually thus avoiding haemodynamic alterations. It also avoids patchy or inadequate block.^[2]

The only concern with continuous spinal anaesthesia was the risk of postdural puncture headache. Accidental or inadvertent dural puncture during epidural results in high incidence of postdural puncture headache. However, if after accidental dural puncture, catheter is inserted intrathecally, it prevents postdural puncture headache.^[3-5]

The mechanism by which spinal catheter prevents postdural puncture headache is that it stimulates inflammatory cells to accumulate near the entry of catheter and closing of dural hole. In an experimental study using cats, formation of fibrin around the intrathecal catheter at the dural hole has also been described.^[6]

Earlier spinal catheters meant for continuous spinal anaesthesia were microcatheters and were found to be responsible for neural complications. Hence, nowadays epidural catheter is used as spinal catheter. Postdural puncture headache further decreases if catheter left *in situ* for 24 h. But we removed it after surgery as cardiologist wished to start enoxaparin. Our patient did not develop postdural puncture headache and was quite comfortable. Majeed *et al.* also removed catheter after surgery and the patient did not develop postdural puncture headache.^[7]

We wish to highlight that in a patient with peripartum cardiomyopathy, continuous spinal anaesthesia provides the advantage of establishing the block gradually so that haemodynamic alterations are avoided. Moreover, there is little risk of postdural puncture headache.

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 other 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.

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Conflicts of interest

There are no conflicts of interest.

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