

We describe the successful management of a parturient with adriamycin-induced cardiomyopathy, left lung collapse, and with altered renal functions.

A 24-year-old primigravida, at 32 weeks gestation, with adriamycin-induced dilated cardiomyopathy (DCM) presented with worsening dyspnea on exertion (New York Heart Association class III). Patient had metastasis in lung and deranged renal functions due to bilateral nephrocalcinosis. Patient had developed paroxysmal supraventricular tachycardia 4 days earlier, which was treated by carotid massage and therapy with oral digoxin 0.25 mg once a day and diuretics was started. On examination, patient was hemodynamically stable with reduced air entry on the left hemithorax. Obstetrical examination revealed fundal height corresponding to 30 weeks of gestation with breech presentation. Patient had normal coagulation parameters. Chest X-ray showed left lung collapse with leftward shift of mediastinum and bronchoscopy revealed a growth in the left main bronchus 2 cm below carina. Echocardiography showed ejection fraction 30%; DCM with left ventricular systolic dysfunction and mild pericardial effusion.

Patient was scheduled for emergency cesarean section in view of her heart condition and nonreassuring fetal status. A combined spinal and epidural anesthesia (CSEA) was planned. Standard monitoring along with invasive arterial pressure and central venous pressures monitoring was established. An epidural catheter was inserted via the L₂₋₃ interspace using an 18 G Tuohy needle. 3 ml of 2% lignocaine with adrenaline (1: 20,000) was given as test dose to rule out intravascular or intrathecal placement. Lumbar puncture was performed at L₂₋₃ interspace and 25 mcg (volume made to 1 ml using isotonic saline) of fentanyl was given intrathecal, after confirming free flow of cerebrospinal fluid. Epidural extension of anesthesia was done in graded fashion using 5 ml boluses of 2% lidocaine (total 10 ml) to achieve sensory level of T₆. Patient was comfortable and did not complain of any pain intraoperatively, had stable hemodynamic parameters, and the total intraoperative urine output was 800 ml. A slow intravenous oxytocin infusion (20 units in 500 ml of 0.9% saline) was started soon after delivery of baby. A 2.5 kg baby with APGAR score of 9 and 10, at 1 and 5 min, respectively, was delivered. Postoperative analgesia was provided with 0.125% bupivacaine with 2 mcg/ml fentanyl as a continuous epidural infusion. The epidural catheter was removed after 24 h.

Combined spinal-epidural anesthesia for cesarean section in a patient with dilated cardiomyopathy

Sir,

Cardiac diseases associated with pregnancy are major cause of maternal mortality and morbidity. When parturients with cardiac ailments are scheduled for emergency cesarean section, the anesthesiologist is confronted with various challenges.

Anthracycline antibiotics are a major class of antitumor drugs but have limitation of cumulative dose dependent cardiac toxicity due to lipid peroxidation leading to accelerated myofilament degradation in addition to decreased formation

of cardiac myofilaments thus creating a net negative balance of sarcomeric proteins called as “cardiac sarcopenia.”^[1,2] Our patient had DCM, but she did not fit into the well-defined diagnostic criteria of peripartum cardiomyopathy as she had an identifiable cause.^[3] The incidence of idiopathic DCM in pregnancy is 5–8 per 100,000 live births per year with a poor prognosis as compared to peripartum cardiomyopathy.^[3]

Hemodynamic goals described in DCM include maintenance of normal to low heart rate to decrease oxygen demand, avoidance of drug-induced myocardial depression, maintenance of normovolemia, prevention of increased ventricular afterload, and maintenance of adequate placental perfusion. Both general and regional anesthesia has been successfully used, but general anesthesia was not preferred in our patient due to other comorbidities. Regional anesthesia reduces afterload with minimal effect on contractility, minimizes the incidence of venous stasis, and can provide effective postoperative analgesia.^[4] General anesthesia has been used successfully in parturient with idiopathic DCM.^[5] Fukuda successfully managed a pregnant patient with DCM using epidural anesthesia with 1.5% lidocaine with adrenaline (30 mcg) and fentanyl (50 mcg).^[6] We preferred CSEA technique over epidural anesthesia alone as it has a lower failure rate than epidural, superior postoperative pain relief, and a lower incidence of hypotensive episodes if an opioid only is injected in subarachnoid space.^[7] Successful use of CSEA has been described in these parturients with the use of low dose of bupivacaine (hyperbaric) in subarachnoid space followed by institution of graded epidural anesthesia and use of incremental CSEA technique with invasive hemodynamic monitoring.^[8-10] DCM with pregnancy poses a significant risk for mother as well as baby and medical management must be undertaken to prevent progression of the disease in these patients.^[11] CSEA, using opioid alone intrathecally, is an acceptable option for these patients which gives advantages of providing analgesia and sedation without significant reduction in systemic vascular resistance.

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