Preoperative ketorolac–acetaminophen–lidocaine with isoflurane–propofol anaesthesia for Caesarean section in a patient with infective endocarditis

Editor—Opioids can suppress the stress response in the parturients with cardiac diseases requiring Caesarean section under general anaesthesia, but with anticipated transient severe respiratory depression. Preoperative ketorolac is safe and effective in attenuating the maternal stress response after Caesarean delivery.

A 25-yr-old female at 31 weeks gestation with known rheumatic heart disease was admitted with fever, anaemia, and dyspnoea, after a dental procedure 1 week before. Transoesophageal echocardiography (TOE) revealed severe mitral regurgitation, multiple highly mobile vegetations attached to the atrial surface of both leaflets of the mitral valve, increased left atrial size, and preserved left ventricular systolic function (ejection fraction of 0.55), with no detected left atrial or left atrial appendages thrombus (Fig. 1).

She was tachypnoeic with stable haemodynamics. She was successfully managed by means of aggressive antibiotic, steroids, and diuretic, with preservation of normal fetal heart rate and beat-to-beat variability.

Blood and platelets were transfused to correct a progressive anaemia and thrombocytopenia. The patient requested general anaesthesia for urgent Caesarean section at 32 weeks because of the presence of mobile vegetations with a high risk of embolism, irrespective of the degree of valve destruction, and her response to antibiotic therapy.

Acetaminophen 1 g i.v. and ketorolac 15 mg, followed by a constant infusion of 7.5 mg h⁻¹ throughout the procedure, were given 20 min before induction of anaesthesia. A five-lead ECG with ST-segment analysis, pulse oximetry, capnography, arterial and central venous pressure, and TOE monitoring were used. A rapid sequence intubation was performed with lidocaine, propofol, and suxamethonium. Anaesthesia was maintained with isoflurane, air/oxygen mixture, propofol 2–3 mg kg⁻¹ h⁻¹, and cisatracurium. Surgery proceeded uneventfully, and a healthy male infant weighing 1750 g was delivered with Apgar scores of 8 and 10, at 1 and 5 min, respectively. Fentanyl and oxytocin were given after the umbilical cord clamping. Furosemide was given to reduce the increase in preload induced by auto-transfusion from uterine contraction. The haemodynamic measurements and ST-segment changes were stable throughout the procedure with estimated blood loss to be approximately 500 ml. Initial neurological assessment after extubation showed

Fig 1 Preoperative transoesophageal echocardiography shows multiple highly mobile vegetations attached to the atrial surface of the mitral valve leaflets.
appropriate response to verbal stimuli and moving all four limbs.

Postoperative analgesia consisted of ketorolac, acetaminophen, and meperidine. Twelve-lead ECG, creatine kinase, and troponin concentrations did not change after surgery. She remained stable for 3 days. The patient had mitral valve replacement surgery 3 days later with an uneventful postoperative course.

Although the insertion of a pulmonary artery catheter may be more useful to evaluate cardiac preload, it may have risks such as tachyarrhythmia or paradoxical emboli. TOE obviously adds an assessment of valvular and ventricular function, and detection of the haemodynamic consequences of infective endocarditis. As this patient had severe mitral regurgitation, our goal was to provide a stress-free induction of and emergence from anaesthesia, avoiding the increases in heart rate, SVR, and the decreases of filling pressures, commonly associated with tracheal intubation and extubation.

Preoperative ketorolac is effective in attenuating the maternal stress response to intubation and improves analgesia after Caesarean delivery, with no evidence of increased perioperative blood loss or adverse neonatal outcome. Therefore, we chose the combination of ketorolac, acetaminophen, and lidocaine to blunt the haemodynamic effects of induction of anaesthesia, while avoiding the use of opioids before delivery. Further studies are required to determine the effect of this simple therapeutic strategy on morbidity and mortality.

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