Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Trends in Anaesthesia and Critical Care 39 (2021) 3–4

Contents lists available at ScienceDirect

Trends in Anaesthesia and Critical Care

journal homepage: www.elsevier.com/locate/tacc

Letter to the Editor

Cesarean section in COVID-19 patient with mitral stenosis: Fast-track spinal anesthesia is an option

Pregnant women become susceptible to respiratory pathogens because of the physiological changes in their immune and cardiorespiratory system making them intolerant to hypoxia [1]. The clinical outcomes among pregnant women infected with coronavirus are worse than their non-pregnant counterparts [2]. Severe mitral stenosis is poorly tolerated in pregnancy, and effect of COVID in pregnancy might complicate it further. These patients have a fixed cardiac output and increased pulmonary pressure that leads to pulmonary edema and right ventricular failure. Decrease in systemic vascular resistance (SVR) and tachycardia should be avoided. European and American Societies of Regional Anesthesia have produced joint COVID- 19 recommendations boldly stating that regional anesthesia should be preferred over general anesthesia whenever possible [3]. Fast-track regional anesthesia means administering a low dose spinal drug to cause minimal hemodynamic perturbation so that patients can be transferred to the post-anesthesia care unit (PACU) immediately after the surgery is over [4]. Here we describe a case in which Fast-track spinal anesthesia was given for cesarean delivery in COVID -19 positive patient having severe mitral stenosis to prevent intraoperative haemodynamic change and increase in infectivity by bypassing the recovery room.

Thirty year-old primigravida, 39 weeks of gestation diagnosed case of rheumatic heart disease(RHD) with severe mitral stenosis (MS) was admitted in our hospital. She was COVID positive at the time of admission confirmed by RTPCR. On pre-anesthetic checkup patient was asymptomatic. She was on regular medications with tablet verapamil, diltiazem, penicillin, digoxin, furosemide and spironolactone. In Echocardiography mitral valve area was 0.8 cm^2 with ejection fraction of 60%. Mean pulmonary artery pressure was 30 mmHg. She had a pulse rate of 90/min, regular and blood pressure of 110/70 mm Hg. She had remained asymptomatic throughout pregnancy with regular antenatal checkups. All routine investigations were within normal limits. She was planned for elective caesarean section in view of her cardiac disease. Since the patient was hemodynamically stable, we planned to administer low dose spinal anesthesia. Written and informed consent for both surgery and anesthesia was taken. In the operating room standard American society of Anesthesiologists monitor were applied. Two peripheral venous line (20 G, 18G) was secured, acid-aspiration prophylaxis was given. On sitting up position sub-arachnoid block (SAB) was administered in the L3-4 interspace using a 25G Quincke needle. Drugs low dose 0.5% Bupivacaine heavy (5 mg) with 25 mcg of fentanyl was given. The effect of spinal anesthesia was accessed with modified bromage scale. Once confirmed it reached grade 1 (complete motor block) surgery was initiated. Oxygen was given intraoperative period via nasal prongs (3 L). Total blood loss was around 900 ml with total urine output of 300 ml.Total fluid crystalloid 1000 ml given. Blood loss were replaced with two unit packed red blood cell (PRBC). Surgery was uneventful, with the delivery of healthy child of 3 kg.

Spinal or epidural anesthesia must be performed cautiously in these patients owing to their fixed cardiac output. They may not be able to compensate for vasodilation caused by regional anesthesia and develop profound hypotension. Neuraxial blockade in form of graded epidural anesthesia that allows a gradual onset of block with avoidance of hypotension by intermittent fluid bolus and judicious use of vasopressors has been used successfully in the past [5]. In our patient we have used 5 mg 0.5% bupivacaine along with 25 μg fentanyl to provide fast-track spinal anesthesia. Cenkowski et al [6] in their study compared low-dose spinal group received spinal anesthesia consisting of 4.5 mg of 0.75% hyperbaric bupivacaine with 15 mcg of fentanyl and 150 mcg of preservative free morphine vs conventional local anesthetic dose (8–12.5 mg) of bupivacaine. They found that low-dose spinal anesthesia provides adequate surgical anesthesia, improved recovery time, but no difference in maternal cardiac index when compared to conventional dose spinal anesthesia. Kuusniemi et al. [7] compared spinal anesthesia using hypobaric bupivacaine (0.18%) with epidural anesthesia using a combination of lidocaine and prilocaine in patients undergoing ambulatory knee arthroscopy surgery. They presented results in favor of spinal anesthesia in terms of intended unilateral anesthesia and hemodynamic stability. Because of longer onset times, higher costs and lower reliability, epidural anesthesia appears to be inferior to spinal anesthesia in fast-tracking regional anesthesia. [4]. In current COVID-19 pandemic we support that regional anesthesia should be preferred over general anesthesia whenever possible. However the decision to choose regional anesthesia must remain as patient-centric as possible, minimizing risk not only to staff and institution, but also to the patient.

Hence, this anesthetic technique can be applied in elective surgeries with proper work up and stable hemodynamics. It can serve as an alternative to general anesthesia in this COVID-19 pandemic, because it preserves respiratory function, avoids aerosolization and viral transmission during pregnancy, without causing much change in hemodynamics.

Source of funding

Nil.

https://doi.org/10.1016/j.tacc.2021.04.009

Consent

Taken from the patient relative.

Declaration of competing interest

Nil.

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27 January 2021