Pregnancy with dengue hemorrhagic fever in respiratory distress for cesarean delivery: Anesthetic management

Madam,

Dengue fever in pregnancy can herald serious consequences if not managed timely and appropriately.[1-3] The dreaded complication is the occurrence of Dengue Hemorrhagic Fever (DHF) characterized by thrombocytopenia (platelet count $<100 \times 10^9$/L), hemorrhagic manifestations and increased vascular permeability and in its severe form progression to Dengue Shock syndrome (DSS) characterized by hemodynamic instability.[4] Although there are no clear guidelines regarding the preferred type of anesthesia (general or regional), each of the technique has its own merits and demerits and thus should be adjudged based on individual patient's condition. We like to report the successful administration of spinal anesthesia (SA) for cesarean delivery (CD) without any adverse sequelae in a parturient with DHF.

A 27-year-old pregnant woman (2nd gravida, no living issue), at 37 weeks of gestational age, presented with chief complaints of high-grade fever (103°F) since last 2 days. Fever was associated with chills, malaise and myalgia. Blood pressure was 144/94 mmHg. The laboratory investigations revealed a serum hemoglobin of 9.2 g/dL, a total leukocyte count (TLC) of 9400/mm^3 and a platelet count (PC) of 60×10^9/L. In view of the ongoing dengue outbreak, a possibility of dengue fever was considered apart from preeclampsia being the primary probable diagnosis. Urine protein was measured as trace and serum uric acid was within normal range. Dengue NS1 Ag was positive. Serology (IgM antibody) also came positive. Investigations repeated 12 hours later showed PC of 48×10^9/L with prothrombin time of 11.4 s (reference range- 11-16 s) and activated partial thromboplastin time of 34 s (reference range- 27-35 s). The following day she developed gradual onset breathlessness with respiratory rate of 25-30/min, room air saturation (SpO_2) of 87-89% (92-93% with face mask oxygen) and fine crepitations (basal) on both sides of the chest. In the meantime, NIV (Noninvasive ventilation) was used as adjunct for controlling tachypnea and maintaining oxygen saturation. A probable diagnosis of DHF was made and decision was taken to urgently perform CD. Patient was transfused 4 units of Random Donor Platelets (RDPs) and a repeat PC was found to be 80×10^9/L, sufficient enough to allow us to perform SA for the proposed surgery.

In the operating room, the routine monitors were applied. Oxygen supplementation was done through face mask with a target of SpO_2 above 92%. On examination, heart rate was 104/min and blood pressure 134/76 mm Hg. The patient was administered single-shot SA using a 26 G Quincke needle in left lateral position. The drugs used were 0.5% bupivacaine heavy (1.2 ml, 6 mg) with 0.5 ml (25 mcg) fentanyl. She remained hemodynamically stable throughout the surgery. Administration of intra-operative crystalloids was restricted to 700 ml. Two units of RDPs (200 ml) were further transfused to prevent peripartum hemorrhage. Surgery was uneventful and a healthy baby was delivered. Blood loss during the surgery was 700-800 ml. During immediate post-op period in the ICU, the patient tachypnea worsened (30-32/min) associated with room air saturation of 85-86% (91-92% with face mask oxygen) and bilateral coarse crepitations. Patient was administered intravenous Furosemide 20 mg, as fluid overload was suspected with a background of leaky alveolar capillaries due to dengue fever. Echocardiography was done and cardiac

failure ruled out. On the next day morning, lab report hemoglobin was found to be 8 g/dl. The patient improved gradually and over next 48 hours became completely stable with supportive treatment of NIV. Both mother and the infant were discharged in a stable condition on the 5th day. PC of the patient at discharge was 96 × 10^9/L. During this period, no evidence of spinal-epidural hematoma was noticed.

In our case, general condition of the patient was not conducive for her to tolerate a spontaneous vaginal delivery. As anesthesiologists, the primary concerns for us were thrombocytopenia associated risk of bleeding, respiratory embarrassment and progression of DHF into DSS. The PC threshold for lumbar puncture (LP) in the US and UK is 50 × 10^9/L; in Germany, it is 20 × 10^9/L unless it is an urgent procedure (e.g., diagnosing bacterial meningitis) when an LP should be performed irrespective of the PC.[5] Administration of GA with her lung condition would have led to difficulty in extubation and possible post-operative mechanical ventilation and its associated problems. Administration of RDPs leads to a transient rise in PC which provided us with a window to administer SA for the surgery.

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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