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Sepsis After Cesarean Section

Sezaryen Sonrası Dönemde Gelişen Sepsis

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Dear Editor;

Sepsis is one of the major causes of maternal death (0.1-0.6/1000 birth). The sepsis related mortality has increased 3-fold in the last 25 years. Especially in the terms close to birth giving, physiological changes cause difficulty in the diagnosis of sepsis. These physiological changes include heart rate, respiratory rate, increase in oxygen consumption, increased blood pressure, and decreased systemic vascular resistance. In this letter, we aim to present the case of a 19 years old primipara who underwent cesarean section under general anaesthesia in her 32nd week of pregnancy with the preliminary diagnosis of preeclampsia and our cardiovascular collapse diagnosis presumably resulting from urinary tract infection related sepsis during the follow-up at the intensive care unit, followed by its treatment.

Upon the patient's vitals low at limits under general anesthesia and the prolongation of extubation time, the patient was intubated, transferred to the intensive care unit, and connected to a mechanical ventilator in BIPAP mode. Central venous pressure and intra-arterial pressure monitoring was performed. Heart rate was 104 beats/min; peripheral oxygen saturation was 94%; arterial blood pressure was 80/52 mmHg; central venous pressure was 5 mmHg and her body temperature was 34.6 °C. Postoperative laboratory values were as follows: pH: 7.30; pO2: 122 mmHg; pCO2: 28 mmHg; HCO3: 18 mEq / L; haemoglobin 10.2 g/dL; Plt: 124,000 K/Mm3; Hct: 31%; WBC: 11,000 K/Mm3; Glen: 124 mg/dL; BUN 20 mg/dL; Cree: 1.1 mg/dL; ALT: 34 U/L; AST 35 U/L; LDH 260 U/L; Na: 132 mmol/L; K: 3.4 mmol/L; Cl: 102 mmol/L; Mg: 2.9 mg/dl; Ca: 8.5 mg/dL; and INR: 1.2, respectively. We started Assist 3 × 1, Pantpas 2 × 1, Cernevit 1 × 1 (GA), 100 ml/h of 0.45% NaC1 infusion, and midazolam 5 mL/h infusion. The patient was covered with heater blanket. Control Hb values were collected from the patient who had hypotension at the time. Hb values being normal, we provided additional fluids. Midazolam dose was deducted to 3 mL/hr. In the third hour in her stay in the intensive care, she had a sudden cardiac arrest. Cardiac massage was started. Midazolam was discontinued, the FiO2 was increased to 100%, and 1 milligram (mg) adrenaline intravenous bolus was applied. Approximately two minutes after the intervention, spontaneous cardiac rhythm returned. Dopamine infusion was started. The patient's condition was shared with relatives. Meanwhile, the patient's history was renewed. Relatives of the patient related that, before hospitalisation, the patient was admitted to the hospital with urinary tract infection and received treatment for a week. In the light of this new information, we collected urine, blood and tracheal aspirate cultures from the patient. After the urine microscopy, we requested consultation from the Department of Infectious Diseases. Approximately in the 4th hour of the follow-up, another cardiac arrest took place. After a short of intervention, the spontaneous cardiac rhythm was regained. Dopamine infusion dose was increased. Adrenaline infusion was started. Due the presence of coliform bacteria in urine analysis, the Department of Infectious Diseases initiated meropenem 2×1 g and tazocin 4×4.5 g.In the 6th hour of the follow-up, the patient's body temperature began to rise and passed 38 °C in the 8th hour. The condition was interfered with cold application and paresetamol 1 g IV infusion. In the 18th hour of the follow-up, the patient's need for support reduced and her mean arterial blood pressure rose above 95 mmHg; thus we gradually started to reduce adrenaline infusion and eventually terminated the adrenalin in the 18th hour.Then midazolam infusion was started again. In the 36th hour of the follow-up, we reduced dopamine by degrees and at the end terminated it. The sedation of the patient came to an end with stable hemodynamic and laboratory values in the 48th hours of the follow-up. The patient, now responding to verbal questions, was monitored in ASB mode for a while and, in the 56th hour of the follow-up, was extubated. On examination after extubation, no neurological sequelae was detected. On the 2nd day of her extubated follow-up, the patient was transferred to the maternity ward as no deterioration was observed in examination findings, hemodynamic and laboratory values on the postoperative 4th day.

Urinary tract infections are the most common infections in pregnant women. They are seen in a spectrum ranging from asymptomatic bacteriuria to pyelonephritis (3). Approximately 4% of women of childbearing age have bacteriuria (4). The prevalence of asymptomatic bacteriuria in pregnant women varies between 4% to 7%

(5). As can be seen from the figures, the incidence rate in non-pregnant childbearing females is not different from pregnant females (3,6). However, repeating attacks are more common in pregnant women (5). Pregnant women are 3-4 times more risky than non-pregnant women about asymptomatic bacteriuria ending up in symptomatic infection (7, 5). The risk of bacteriuria increases in parallel to the pregnancy period (6). In about 20-40% of bacteriuria that has not been treated in early pregnancy, acute symptomatic pyelonephritis develops in the late stages of pregnancy. Pyelonephritis is especially observed in 3rd trimester, when hydronephrosis and urinary tract stricture are most common (6). Cases which give inadequate response to treatment are usually upper urinary tract infections. In 1.3-3% of the cases with already developed acute pyelonephritis, septic shock may be experienced. Moreover, in approximately 15 to 20% of these patients, bacteremia is likely to develop. As mentioned at the beginning, sepsis diagnosis may detain especially due to the changes seen in the last trimester of pregnancy. Bacteremia may even develop in the absence of fever or leukocytosis. If not treated in time, bacteria may cause complications such as adult respiratory distress syndrome (3).

Urinary tract infections during pregnancy have adverse effects on the fetus. Preterm birth and low birth weight infants rates are higher in pregnancies with bacteriuria (7, 5). Besides, the relationship between acute pyelonephritis in pregnancy and preterm labor is well known. Prematurity incidence in these cases may be as high as 20-50% (5). In addition, urinary tract infections increase the incidence of preeclampsia up to 1.7-fold (8).

In the first hours after severe sepsis develops, speed and appropriateness of treatment will influence the result while early resuscitation improves survival (1).

Best Regards

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