

Anesthesia for emergency cesarean section in a patient with acute development of massive pleural effusion

Dear Editor,

Administration of anesthesia for emergency cesarean section in a patient with acutely developed massive pleural fluid of unknown origin is challenging.

A 27-year-old woman, 162 cm tall, weighing 62 kg, was referred to our hospital at 37 weeks of gestation with severe left chest and back pain. She developed stiffness of her left shoulder six days before admission, which gradually progressed to left chest and back pain. She had no relevant past medical history. On admission, chest X-ray revealed massive left pleural effusion. Laboratory findings revealed mild leukocytosis of 11,800 /mm³ and mild anemia with blood hemoglobin of 11.0 g/dL. Blood gas analysis revealed a PO₂ of 117 mmHg, PCO₂ of 37 mmHg and SaO₂ of 96% while breathing 3 L/min of oxygen via a mask. Due to rapid progression of her symptoms, an emergency cesarean section was prioritized over diagnosis and treatment of the pleural fluid by the attending obstetricians and pulmonologists.

On arrival at the operating theater, she was unable to lie on either her back or side due to severe pain. With the patient in the sitting position, epidural analgesia was administered at the thoracic 8th-9th interspace with 10 mL of 1% lidocaine to relieve the pain, so that the patient could lie on her back. Rapid sequence induction of general anesthesia was performed uneventfully, with intravenous administration of 100 µg of fentanyl, 100 mg of thiopental and 60 mg of rocuronium. General anesthesia was maintained with continuous intravenous administration of propofol at 3 mg/kg/hr and intermittent administration of fentanyl with a total additional dose of 150 µg. Cesarean section was performed and the delivered neonate had Apgar scores of 8 at both 1st and 5th min after birth. Postoperatively, the mother was transferred to the maternal intensive care unit where a drainage tube was inserted into the pleural cavity. Bloody pleural effusion was drained through the drainage tube. Postoperative computed tomography with contrast revealed the presence of left pulmonary sequestration. The pleural fluid was considered to result from rupture of the sequestration. The amount of fluid emerging from the drainage tube gradually decreased, and the tube was removed on the fifth postoperative day. The mother and neonate were discharged uneventfully.

Postoperatively, it was determined that pulmonary sequestration was the cause of the pleural fluid. Pulmonary sequestration is defined as the presence of nonfunctional lung tissue with an aberrant arterial blood supply that lacks a connection to the bronchus. It has diverse manifestations, ranging from asymptomatic patients to those who present with sequelae such as recurrent pulmonary infections or hemoptysis. To the best of our knowledge, this is the first report of a pregnant patient with ruptured pulmonary sequestration undergoing anesthesia for cesarean section. If the diagnosis of ruptured pulmonary sequestration had been made preoperatively, regional anesthesia might have been the anesthetic method of choice because general anesthesia with positive pressure ventilation can cause further rupture of the pulmonary sequestration. Although pulmonary sequestration rarely presents with hemothorax^{1,2}, this lesion should be included in the differential diagnosis of pleural effusion of unknown etiology.

References

1. Hofman FN, Pasker HG, Speekenbrink RG. Hemoptysis and massive hemothorax as presentation of intralobar sequestration. *Ann Thorac Surg.* 2005; 80: 2343-2344.
2. Wandschneider W, Illiasch H. Intralobar sequestration: a rare cause of severe hemothorax. *J Thorac Cardiovasc Surg.* 2003; 126: 872-873.

Conflict of interest

None declared.

Keywords: Anesthesia, cesarean section, pleural effusion

Nikaido S, Iida R, Suzuki T

Department of Anesthesiology, Nihon University School of Medicine, Tokyo, Japan

Corresponding Author: Ryoji Iida, MD, PhD, Associate Clinical Professor, Department of Anesthesiology, Nihon University School of Medicine, 1-6, Kanda-Surugadai, Chiyoda-Ku, Tokyo 101-0062, Japan, tel: +81332931711, e-mail: ryoiida03@gmail.com