

## Epidural anesthesia for cesarean delivery in a parturient with a double-outlet right ventricle

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*To the editor:* Double-outlet right ventricle (DORV) is a condition of the complete or nearly complete emergence of both arterial trunks from the right ventricle [1]. A growing number of women with congenital heart disease require anesthetic management for cesarean section (CS). In patients with DORV, we know of only two reports indicating anesthetic management for CS [2,3]. Here, we report a CS using epidural anesthesia for a patient with DORV without any previous surgical correction.

A 33-year-old nulliparous woman who had been diagnosed with DORV was referred to our hospital. Her clinical course remained favorable, with no indications for surgery or medication. At 36 6/7 weeks gestation, CS was scheduled due to worsening intrauterine growth restriction. The patient was then classified as American Society of Anesthesiologists (ASA) physical status 3 and New York Heart Association (NYHA) II. Preoperative hematocrit was 45.6%,  $P_{aO_2}$  was 45.3 mmHg, and oxygen saturation of the peripheral artery ( $S_{pO_2}$ ) was 85% in room air.

At the scheduled CS, no preliminary medication was given. The maternal blood pressure (BP) was 140/70 mmHg, heart rate (HR) was 72 bpm,  $S_{pO_2}$  was 81%, and central venous pressure (CVP) was 11 mmHg. An epidural catheter was inserted from L2–3. Until delivery, we administered 9.0 ml of 1.0% ropivacaine in total so as to obtain a sensory blockade up to the Th4 level by a cold test. Maternal hemodynamics and fetal pulsed Doppler ultrasonography showed no remarkable changes. Fluid administration was continued, using CVP as an indicator.

A healthy neonate was delivered. The maternal cardiovascular status was slightly depressed, as BP was 118/55 mmHg, HR was 52 bpm,  $S_{pO_2}$  was 80%, and CVP was 10 mmHg just after the delivery. However, the maternal hemodynamics quickly recovered with an ensuing injection of 4.0 mg ephedrine.

At the end of anesthesia, BP was 130/70 mmHg, HR was 54 bpm,  $S_{pO_2}$  was 81%, and CVP was 8 mmHg, and the anesthetic block remained at the Th7 level by a cold test.

Anesthesiologists prefer regional anesthesia (RA) rather than general anesthesia (GA) for the management of CS. Although it has been reported that maternal deaths due to complications induced by the anesthesia for CS were more frequent in patients receiving GA than in those receiving RA [4], it is recognized that RA poses the risk of the sudden onset of severe hypotension, due to extensive vasodilatation. From this point of view, epidural anesthesia was chosen in our patient. We knew that combined spinal-epidural anesthesia for CS had already been reported in a patient with palliated DORV [3], but we regard epidural anesthesia as a favorable technique, because it can provide an appropriate state of analgesia in slow incremental steps compared to spinal anesthesia. In our patient, maternal hemodynamics were kept quite stable, apart from a stage of slight maternal hypotension just after delivery when the maternal mental stress was relieved. This fluctuation in blood pressure was not considered to be related to our anesthesia method, because this kind of hypotension is quite usual during anesthesia. Moreover, this hypotension was minimized by the use of a vasopressor in conjunction with appropriate fluid administration.

## References

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