PRIMARY PULMONARY HYPERTENSION IN PREGNANCY: A CASE REPORT AND ANESTHETIC IMPLICATIONS

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Abstract: Pulmonary arterial hypertension (PAH) is a rare and serious condition, especially during pregnancy, with an increased risk of maternal and fetal morbidity and mortality. We report the case of a pregnant woman with an echocardiographic diagnosis of PAH in hemodynamic decompensation who underwent cesarean section under continuous epidural anesthesia. We describe the anesthetic approach, maternal and neonatal outcomes, and discuss the anesthetic implications of PAH during pregnancy, with an emphasis on hemodynamic monitoring and management. This case illustrates the importance of individualized anesthetic treatment and intensive surveillance in these high-risk scenarios.

Keywords: Pulmonary hypertension; Pregnancy; Obstetric anesthesia; Right ventricular failure; Cesarean section.

Introduction

Pulmonary arterial hypertension (PAH) is a circulatory disorder characterized by increased vascular resistance in the pulmonary circulation, usually by mixed mechanisms such as vasoconstriction, arterial wall remodeling, and thrombosis in situ (Rosa VE, et al, 2008). This increase in pulmonary vascular resistance (PVR) can progress to right ventricular failure (IVD), culminating in early death. In pregnancy, the risk is exacerbated by physiological and hemodynamic changes that

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overload the right ventricle, making anesthesia and childbirth critical events (Avila WS, et al, 1999).

Case Report

A 33-year-old female patient, G5P3A1, at 29 weeks of gestation, was admitted with an echocardiographic diagnosis of PAH in severe clinical decompensation. It was decided to resolve the pregnancy via cesarean section, aiming at maternal hemodynamic stabilization.

The patient was referred to the operating room, where she received cardioscope monitoring, invasive blood pressure, and pulse oximetry. Epidural anesthesia was performed in the L1–L2 space with an 18G Tuohy needle, using the loss of resistance technique with positive Dogliotti and Figueiredo tests. After puncture, 2% lidocaine with 1:200,000 adrenaline (3 mL) was administered, followed by a fractional infusion of 1% ropivacaine (5 mL), associated with sufentanil (5 mcg) and morphine (2 mg), at intervals of 5 minutes until reaching 20 mL and a sensory level at T4.

During the intraoperative period, milrinone was used in a continuous infusion pump (0.375 mcg/kg/min) and lactated ringer's (1000 mL), in addition to oxytocin (5U) after fetal extraction. The surgery was uneventful, lasting 2 hours. The patient remained hemodynamically stable, conscious, and without respiratory alterations.

The newborn (female) had a weight of 1050 g and an Apgar score of 8 and 9 in the first and fifth minutes, respectively. The patient was referred to the ICU at the end of the procedure, without complications.

Discussion

PAH represents a relevant challenge for obstetric anesthesiologists, as gestational physiological changes and anesthetic maneuvers can precipitate acute decompensation of PVR and IVD (Galiè N, et al, 2015). Regional anesthesia, especially fractional epidural, offers advantages because it allows gradual control of the block and less impact on preload.

Close hemodynamic monitoring and support with inotropes and vasodilators, such as milrinone, are essential. Patients with PAH without IVD can be managed with vasodilators alone, while those with IVD require inotropic and diuretic support as indicated (McLaughlin VV, et al, 2009).

Anesthetic success depends on the maintenance of cardiovascular stability, abruptly avoiding changes in afterload and intrathoracic pressure. This case illustrates the importance of individualized planning, in a hospital environment with intensive support and an experienced multiprofessional team.

Conclusion

This case report highlights the anesthetic complexity involved in the management of pregnant women with PAH. The appropriate choice of technique, intensive monitoring, and targeted pharmacological support are determinant for a favorable outcome. The reported experience seeks to contribute to the anesthesiological literature and stimulate the discussion of evidence-based conducts in highly complex scenarios.

References

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