

Case Report

An interesting case of a sizeable adrenal incidentaloma resection in a 26-weeks parturient

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ABSTRACT

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Adrenal masses in pregnancy are extremely rare. Vascular rupture or venous thrombosis are the main complications and they are also related to increased morbidity and mortality. We present a

case of a parturient in the 3rd trimester of pregnancy with a sizeable adrenal mass, which was successfully and uneventfully resected.

Keywords: adrenal mass, pregnancy, obstetric anesthesia, incidentaloma

INTRODUCTION

Adrenal masses in pregnancy are extremely rare. They are complicated with vascular rupture or venous thrombosis. The main clinical manifestations are high blood pressure, pain or hypovolemic shock. For this reason, they are related to increased morbidity and mortality. We present a case of a parturient in the 3rd tri-

mester of pregnancy with a sizeable adrenal mass, which was successfully and uneventfully resected.

CASE REPORT

A 26-year-old parturient, admitted due to a faint episode, was scheduled for a sizeable mass resection, located in the Morrison's

pouch. She had been complaining of insisting pain at the right upper abdominal quadrant. After a rigorous examination and imaging, an adrenal mass with a rim of acute hemorrhage signal, was revealed in the right subhepatic space and resection was decided due to its considerably big size (8,75x 9,26x11,5cm), fear of new bleeding and the upgrowing uterus pressure on it. The mass was endocrinologically tested and was found to be not hormone secreting.

Apart from the 26th week of gestation, she had no comorbidities; she was a social smoker and received only folic acid and iron supplements. Her laboratory tests were within normal ranges and her BMI was 21,4 kg/m². Clinical examination of the respiratory and cardiovascular systems was normal. Before induction an epidural catheter was placed in L1-L2 space. She was placed inclined in a left lateral position to avoid inferior vena cava compression syndrome. Fetal heart rate was monitored before induction and surgery. Anesthetic depth monitoring through Patient State Index (PSI) (Masimo Corp., Irvine, CA, USA), cerebral oximetry (O3) (Masimo Corp., Irvine, CA, USA) and analgesia nociception index (ANI) (Mdoloris Medical Systems, Loos, France) were set before induction. Nociception index translates heart rate variability recordings into parasympathetic over sympathetic system dominance as a means of adequate analgesia provision. Cardiac index (CI) and stroke vol-

ume variation (SVV) were measured through arterial waveform analysis monitoring (ProAQT sensor, PulsioFlex platform) (Getinge Deutschland GmbH, Rastatt, Germany). Induction was done with fentanyl (2mcg/kg), propofol (3mg/kg) and rocuronium (1mg/kg) and a successful intubation was performed. Dexamethasone (8mg) and omeprazole (40mg) were administered. Anaesthesia was maintained with remifentanyl infusion (0,1mcg/kg/min) and sevoflurane 2%, with a marginally low PSI values around 25%. Transient hypotension (15% baseline) after induction was treated with ephedrine (10mg) and blood pressure remained stable afterwards, at baseline level throughout surgery (110/60mmHg). CI was 2,89-4,29 L/m² and SVV 5-15%. Cerebral oximetry (O3) remained stable around 58%-66% at the left and 65%-73% at the right forehead detection areas. Epidural analgesia with ropivacaine 0,1% infusion was started before emergence, along with morphine (5mg), paracetamol (1g) and ondasetron (4 mg). After epidural analgesia provision ANI raised to 100% from a baseline value of 70% throughout the operation, suggesting complete sympathetic suppression and complete nociception coverage. Total blood loss reached 700ml. Neuromuscular block was reversed with sugammadex (200mg) and the parturient recovered uneventfully with a normal fetal nonstress test (NST), normal fetal heart rate and no uterine contractions. Histo-

pathology revealed an adrenocortical adenoma. Her pregnancy continued uncomplicated.

DISCUSSION

Main concerns for surgery during pregnancy comprise drug-related teratogenic effects, malformations, fetal death and preterm labor. Furthermore, child neurodevelopmental and behavioral problems have been attributed or related to surgery during pregnancy. As for pharmacokinetics, several changes have been observed. Functional residual capacity (FRC) is reduced and minute volume (MV) is increased, leading to faster inhalational anaesthetics pulmonary uptake. Due to important reduction of plasma albumin, protein-binding is reduced, increasing free drugs concentration. Moreover, since fetal albumin concentration is slightly higher and fetal pH is more acidotic than the maternal one, fetal concentration of several drugs may be increased. Endogenous opioids as endorphins and progesterone, may increase pain threshold, enhancing sedation and nociception, explaining reduced maternal anaesthetic requirements during pregnancy. Incidence of surgery during pregnancy is 0,3-2,2% and the reasons may be obstetric (cervix cerclage, ovarian cyst, fetal abnormalities) or non-obstetric (trauma, malignancies, acute abdominal issues). The risks concerning the parturient include wound infection, haemorrhage, respiratory issues, transfusion, venous throm-

boembolism as for the fetus, preterm labor, altered uteroplacental circulation, placental perturbation may occur¹.

Adrenal disorders, including adrenal masses in pregnancy are extremely rare, albeit of critical importance, as they may increase fetal and maternal morbidity and mortality²⁻⁴. Adrenal incidentalomas are extremely rare, due to restricted imaging during pregnancy⁵. The main concern is hypersecretion of catecholamines and poorly controlled hypertension, affecting both mother and fetus⁶. Adrenal hematoma is also a rare condition (0,3-1,8%) with an overall mortality of 15%, the incidence in pregnancy is unknown though⁷. It may be a result of vascular rupture or central venous thrombosis, in terms of high arterial blood supply⁸. Factors that may be related to adrenal hyperperfusion are high blood pressure, masses, coagulopathies, use of anticoagulants, lupus anticoagulant, antiphospholipid antibodies, adrenal hyperplasia, trauma⁹. Pregnancy related factors include preeclampsia, abortion, pre- or postpartum haemorrhage. Therapy may be surgical or conservative.

The decision for adrenal resection lies on the probability of an upcoming haemorrhagic shock, or adrenal insufficiency¹⁰. There are only few cases described, a fact that renders the management of such cases difficult.

Additional materials: No

Acknowledgements:

Not applicable

Authors' contributions:

TM drafted the paper and is the lead author. GE contributed to planning and the critical revision of the paper. MCh contributed to planning and the critical revision of the paper. TE contributed to planning and the critical revision of the paper. KK contributed to planning and the critical revision of the paper. KE contributed to planning and the critical revision of the paper.

Funding: Not applicable.**REFERENCES**

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Availability of supporting data:

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethical approval and consent to participate:

No IRB approval required.

Consent for publication:

Patient consent obtained

Competing interests:

The authors declare that they have no competing interests.

Received: September 2021, Accepted: October 2021, Published: December 2021.

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Citation: Tzima M, Georgopoulou E, Mavropoulos Ch, Tsakyridou E, Katsanoulas K, Katsika E. An interesting case of a sizeable adrenal incidentaloma resection in a 26-weeks parturient. *Greek e j Perioper Med.* 2021;20(d): 71-75.