G122 Pregnancy, Caesarean, and Pheochromocytoma: A Case Report With a Fatal Outcome

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After attending this presentation, attendees will be aware of the clinical, physiological, diagnostic, and therapeutic features of pheochromocytoma during pregnancy.

This presentation will impact the forensic science community by explaining how pheochromocytoma can cause sudden death (maternal and fetal death) in pregnant women if the condition is undiagnosed and left untreated. From this case report, attendees will be able to identify the clinical milestones which can indicate medical malpractice and which can determine whether the fatal outcome was predictable.

The subject of this presentation is a 43-year-old full term pregnant woman who was scheduled for a cesarean delivery in October 2009. At the start of the C-section, she developed a sudden and malignant high blood pressure with hemoptysis, sweat, and tachycardia. The C-section delivered a dead newborn who was successfully resuscitated. The mother died after persistent cardiac arrest.

A judicial autopsy was requested. It revealed an acute pulmonary edema which explained the death and a voluminous tumor of the left adrenal gland which was necrotic and hemorrhagic suggesting a pheochromocytoma. The diagnosis of pheochromocytoma was confirmed by pathological analyses.

The magistrate requested the obstetrical records of the patient be studied. The patient's first pregnancy was in 2005-2006 and her last pregnancy was in 2009. According to these medical records, the woman had a no serious medical history:

- During her first pregnancy (2005-2006), the patient developed gestational diabetes mellitus which was successfully treated by controlling diet. Throughout the follow-up during the pregnancy, blood pressure and cardiac rhythm were stable. At 31 weeks of pregnancy + 5 days, the patient had an episode of malaise during a fetal ultrasound, which resolved spontaneously.
- The baby was delivered by C-section before labor in January 2006. C-section was performed because of low fetal heart rate and failure to induce labor. The newborn was healthy and the patient's diabetes mellitus disappeared after the delivery.
- During her second pregnancy (2009), the patient developed gestational diabetes mellitus which was treated by controlling her diet and insulin (16 weeks of pregnancy). In July 2009 (at 29 weeks of pregnancy + 6 days), the patient had a drop in blood pressure with hypoglycemia and a low fetal heart rate was detected. The patient was admitted to hospital for further investigations and medical supervision for three days. All medical investigations were normal and all abnormalities disappeared spontaneously. A delivery by C-section was scheduled at 37 weeks of pregnancy because of previously scared uterus and gestational diabetes mellitus. The woman was admitted to the hospital one day before. The C-section delivered a dead newborn who was successfully resuscitated. The mother died after resistant cardiac arrest.

This case is interesting from both a medical and medico-legal point of view.

Pheochromocytoma is a rare tumor of the adrenal glands which secretes catecholamine. It can be diagnosed by the classic triad of symptoms —headache, sweating, and tachycardia— which result from arterial hypertension, paroxysmal high blood pressure, acute pulmonary edema, and fatal cardio-pulmonary failure. In pregnant women, the incidence of pheochromocytoma is very low, and its symptoms can mimic gestational hypertension, preeclampsia, or eclampsia. Diabetes mellitus can be due to pheochromocytoma in pregnancy, but is seldom the only symptom. Because of the low incidence of pheochromocytoma in pregnancy, any systematic/mass screening by urinary catecholamine measurement is not requested in pregnant women, except in cases of refractory hypertension.

From a medico legal point of view, we can presume, with hindsight, that the gestational diabetes mellitus was a symptom of the pheochromocytoma, as was the malaise and the low blood pressure which happened during the gestations. However these features are not specific to pheochromocytoma, and are frequent in pregnancy, which explains the difficulty in diagnosis.

Conclusion: This case is unusual. First, it led to maternal death; and, second, the diagnosis of the tumor was postmortem, being unnoticed during the management of pregnancy. It can also presumed that the pheochromocytoma was asymptomatic between the two pregnancies of the patient since no medical history was reported in her medical records.

Pheochromocytoma, Cesarean, Maternal Death

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