

Successful surgical treatment of pheochromocytoma during pregnancy

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A 30-year-old woman at 12 weeks of gestation presented to the hospital with high blood pressure (BP) (maximum, 225/136 mm Hg) despite antihypertensive treatment with metoprolol, nifedipine, and methyldopa. She had a 4-year history of arterial hypertension. Abdominal ultrasound and dynamic renal scintigraphy performed 2 years earlier revealed no abnormalities. Her family history was negative for hypertension and cardiovascular diseases. On admission, she presented with anxiety, palpitations, and recurring headaches. Physical examination revealed a BP of 200/140 mm Hg and a heart rate (HR) of 140 bpm, as well as systolic heart murmur. Laboratory tests at baseline showed proteinuria, gestational diabetes, and normal thyroid hormone levels. Electrocardiography revealed sinus tachycardia (127 bpm). There were no abnormalities on echocardiography. Holter monitoring

showed a mean BP of 199/125 mm Hg, mean daytime BP of 202/130 mm Hg, mean nocturnal BP of 194/115 mm Hg, and a maximum BP of 230/142 mm Hg.

Diagnostic workup for secondary hypertension included the measurement of plasma renin activity and 24-hour urine collection. The urine collection revealed a markedly elevated excretion of normetanephrine (5760 µg/24 h; reference range, 162–527 µg/24 h) and 3-methoxytyramine (1817 µg/24 h; reference range, 103–434 µg/24 h). Abdominal ultrasound showed a pathological mass in the left adrenal gland. Magnetic resonance imaging confirmed the presence of a large heterogeneous adrenal tumor of 80 × 62 × 68 mm in size (FIGURE 1A and 1B).

Considering the clinical picture and radiological and laboratory test results, pheochromocytoma (PCC) of the left adrenal gland was

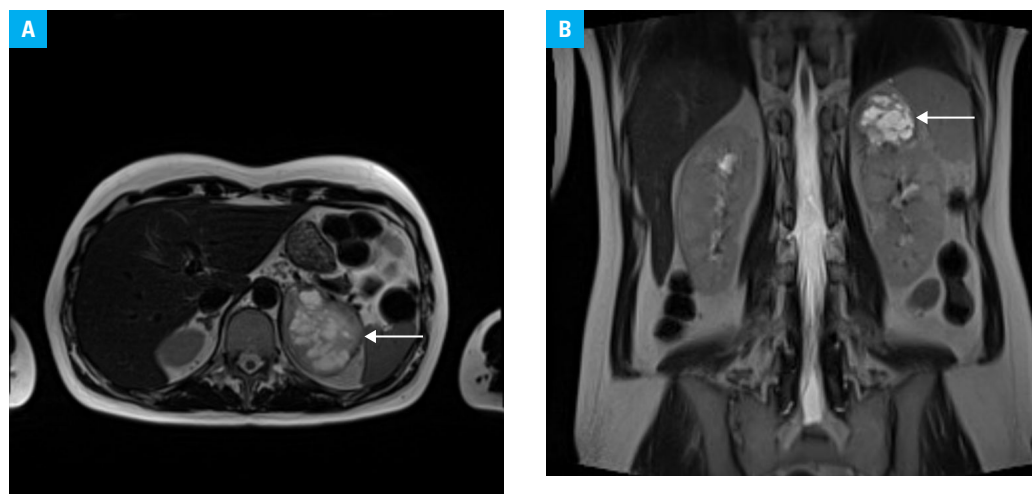


FIGURE 1 Magnetic resonance imaging demonstrating left adrenal pheochromocytoma; arrows indicate large heterogeneous mass; **A** – transverse T2-weighted image; **B** – coronal T2-weighted image

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suspected. Doxazosin and labetalol were introduced, and methyl dopa was discontinued. BP and HR decreased to 150/110 mm Hg and 110 bpm, respectively.

Following a multidisciplinary team assessment, a laparoscopic left adrenalectomy was scheduled at 17 weeks of gestation. Presurgical treatment consisted of doxazosin (32 mg/d), metoprolol (3 × 50 mg/d), and nitrendipine (2 × 60 mg/d). BP was reduced and remained between the range of 100/60 mm Hg to 140/80 mm Hg, with a HR of 90 to 110 bpm. The patient underwent lateral transperitoneal adrenalectomy, which took 75 minutes. The pregnancy did not impact the surgical technique. During surgery, BP ranged from 110/50 mm Hg to 140/80 mm Hg and HR, from 80 to 90 bpm. Sevoflurane, fentanyl, propofol, rocuronium, and magnesium sulfate were used. The procedure and postoperative course were uneventful, and the patient was discharged 3 days following surgery. The pathology report confirmed PCC with mitotic figures: 2/50HPF; Ki67, 0.5%–1% with SYN+, ChrA+, and S100-/+ phenotype.

During follow-up, the patient was asymptomatic and remained normotensive without antihypertensive medications (BP, 110/70 mm Hg; HR, 80 bpm). The urinary levels of normetanephrine, metanephrine, and 3-methoxytyramine, as well as fasting glucose, were normal on repeated measurements. Obstetric assessment before and after the surgery showed normal fetal development.

PCC is a rare tumor, especially during pregnancy, with typical symptoms: hypertension, palpitations, headaches, sweating, or anxiety.¹ It can be misdiagnosed as pregnancy-induced hypertension.² Untreated PCC significantly increases maternal and fetal mortality (40%–50%).³ If PCC is diagnosed before the 24th week of pregnancy, it is generally recommended to perform laparoscopic tumor resection during the second trimester (even in case of large adrenal tumors, ≥6 cm), after obligatory presurgical pharmacological treatment.^{2,4,5} If PCC is diagnosed later and the pretreatment is satisfactory, tumor resection is recommended after delivery (preferably by cesarean section) or simultaneously with the parturition.^{2,5}

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