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CASE REPORTS

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Pregnancy induced hypertension with unilateral renal agenesis

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Introduction

Unilateral renal agenesis occurs in approximately 1 in 1100 births [1]. Because renal agenesis is a developmental field defect, unilateral agenesis is commonly associated with mullerian defects in women. Other anomalies, such as congenital heart disease and a neuromuscular deficit accompanied by a small pelvic outlet, sacral agenesis, and bladder hypoplasia (caudal regression), may be associated with renal agenesis [2]. A solitary kidney is not ordinarily at increased risk of acquired disease. It is not known to be associated with pregnancy induced hypertension.

Case report

A 25 year old primigravida was admitted from the antenatal clinic at 29 weeks of gestation in view of a blood pressure of 160/106 mmHg, urine albumin of 1 + and pitting edema over the legs and feet. On abdominal examination, the height of the uterus corresponded to the period of gestation and fetal heart was present. Platelet count, and liver and kidney function tests were within normal limits and 24 hours urinary protein was 1.2mg%. Fundus examination was normal. Obstetric ultrasound showed a single live fetus of 28 weeks + 5 days, liqor was adequate, placenta was fundal and anterior and of grade 0 maturity and there were no gross congenital anomalies. Doppler velocimetry study was normal. When the maternal kidneys were being scanned, the right renal area was found empty and the left kidney was of normal echotexture but showed compensatory hypertrophy. Because of the presence of the gravid uterus, the pelvic area could not be scanned for an ectopic kidney. The fetal kidneys were normal and the woman gave no history of renal agenesis in the family.

She was started on nifedepine 5mg three times a day with which her blood pressure was controlled. Investigations repeated weekly remained within the normal range. On serial ultrasonography, fetal growth was normal. She had a lower segment cesarean section following failed induction at 37 weeks and a 3 kg baby with a good apgar score was delivered. There was no associated uterine anomaly. When a search for the kidneys was done in the retroperitoneum, the right kidney could not be palpated. Postoperatively antihypertensives were stopped and blood pressure remained within the normal range and urine albumin was absent. Renal function tests were normal. She was discharged on the 6th postoperative day.

At 6 weeks postpartum, an ultrasound examination could not find the right kidney any where. The left kidney was of normal echotexture and showed compensatory hypertrophy. A plain x-ray showed absence of renal shadow on right side.

A radionuclide renal angiography followed by serial renal function study was done after injecting 99m-DTPA intravenously. No tracer uptake and concentration was seen in the right renal area or elsewhere in the pelvis, throughout the study and even at two hours. A normally functioning kidney on the left side and normal bladder activity were seen at 20 minutes.

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Discussion

Unilateral renal agenesis is a rare congenital anomaly. The diagnosis is usually not suspected and remains undetected unless careful examination of the external and internal genitalia uncovers an abnormality that is associated with renal agenesis or an imaging study performed for other reasons reveals only one kidney [2]. In this case it was detected during a routine sonography in a case of pregnancy induced hypertention. The detection of renal agenesis in a case of pregnancy induced hypertention has not been previously reported and is an interesting coincidence. Thirty percent of women with unilateral renal agenesis have an abnormality of the internal genitalia [3]. Conversely, 43% of women with genital anomalies have unilateral renal agenesis [4]. However, in the above case no other congenital anomaly was detected.

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