Obstructive Acute Renal Failure in Pregnancy with a Solitary Kidney

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Introduction

We report a rare case of acute renal failure in a pregnant woman with hydronephrosis in a solitary kidney. The cause of the obstruction and hydronephrosis was the gravid uterus. She was treated by percutaneous nephrostomy initially and then by double J stenting. Hydronephrosis resolved with normal renal function after double J stent removal after delivery.

Case Report

A 24 years old primigravida at 28 weeks gestation presented with threatened preterm labour and right loin pain. She had undergone left nephrectomy at the age of 15 for recurrent loin pain and congenital hydronephrosis. She never had any renal problem since them.

She was afebrile, dehydrated and distressed. She was tachycardic with blood pressure of 140/90. Systemic evaluation revealed no abnormality apart from right renal angle tenderness. Uterus was corresponding to the period of gestation. She had not voided urine for 12 hours with ultrasound scan showing scanty amount of urine in the bladder and significant hydroureterone-phrosis with dilatation of right ureter upto the pelvic brim. No definite calculus was seen at ultrasonography nor on plain x-ray of abdomen. The obstrectical part of the sonography was normal with normal growth and liquor volume. The renal function was deranged with blood urea 109 mgms% and serum creatinine 2.88 mgms%.

She had an emergency right nephrostomy tube drain insertion under ultrasound guidance. Her serum creatinine came down from 2.88 to 0.59mgm% in six hours. On the 5th day a double J stent was cystoscopically inserted retrograde and the nephrostomy tube was removed. On the 8th day she was discharged with normal renal function and a double J stent in the ureter. She delivered normally a female baby weighing 2.8 kg. at 38 weeks. The double J stent was removed two weeks after delivery. The renal function checked thereafter was normal.

Discussion

Upto 90% of pregnant women show some degree of asymptomatic dilatation of the renal pelvis and ureters upto the pelvic brim during the second trimester of pregnancy which becomes maximal during the third trimester and reverts to normal within a few weeks after delivery[1].

There are two theories for the cause of hydronephrosis. One is hormonal and the other is mechanical or obstructive. The hormonal theory attributes dilatation of the upper urinary tract to smooth muscle relaxation induced by progesterone like hormones. The mechanical theory attributes the hydronephrosis of pregnancy to obstruction of both the ureters at the pelvic brim by the gravid uterus. Ureteral dilatation is more common on the right side, (76% on the right side and 35% bilateral)

Pregnancy following nephrectomy is not a rare condition. Women tolerate pregnancy well after nephrectomy if the remaining kidney has normal function. The risk of urinary complication in pregnancy is greater when the right kidney is the remaining one, as it is more subject to uretero-pelvic dilatation, urinary stasis and infection. Women with a known solitary kidney should have periodic renal function tests at regular intervals, since the urinary output alone cannot be used as a guide for assessing renal function. If renal function deteriorates and there is no actual reversible cause, indwelling ureteral catheter needs to be inserted for the rest of the pregnancy.[2]

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