

Bilateral Giant Hydronephrosis: A Rare Finding in Pregnancy¹Dr. Kunur N. Shah, Asst. Professor, IKDRC²Dr. Vineet Mishra, Professor and HOD, IKDRC³Dr. Rohina Aggarwal, Professor, IKDRC⁴Dr. Sumesh Choudhary, Asso. Professor, IKDRC**Correspondence Author:** Dr. Kunur N. Shah, Asst. Professor, IKDRC**Type of Publication:** Case Report**Conflicts of Interest:** Nil**Abstract**

Unilateral right sided hydronephrosis is a common presentation in pregnancy but bilateral gross hydronephrosis is a rare finding. We report a case of 25 year old second gravida who presented with bilateral huge hydronephrosis in active labour. With favorable obstetric condition, she had assisted vaginal delivery with the use of prophylactic ventouse. Postoperative Double J Stenting done which identified kink in lower one third of right ureter. No complications were reported in early post-partum period. As a frontline obstetrician, one needs to be aware about common as well as uncommon urological conditions in pregnancy along with various diagnostic, therapeutic modalities and possible complications.

Key Words: Assisted Vaginal Delivery, D-J stenting, Huge Hydronephrosis

Introduction

Pregnancy is associated with remarkable alterations in renal physiology. Kidney increases by 1 cm in length and 30 % in volume. Mild hydronephrosis occurs in 80% of pregnant women, more commonly on the right (75%) than left (33%) side¹. This is due to compression of right renal pelvis and ureters by gravid uterus which is commonly dextro rotated and smooth muscle relaxation caused by progesterone^{2, 3}. This changes returns to normal a few

weeks after the birth⁴. Sterling defined giant hydronephrosis as collection of more than 1000cc urine in adult urinary tract⁵. A giant hydronephrosis may be misdiagnosed as ovarian cyst, ovarian tumor or ascites⁶. Bilateral huge hydronephrosis is a rare presentation in pregnancy. Most common cause of gross hydronephrosis is PUJ obstruction due to congenital or acquired causes like calculi⁷. We report a case of bilateral huge hydronephrosis in pregnant woman who presented to us in active labour and delivered normally without any complications.

Case Report

A 25 year old 2nd gravida with previous normal delivery, was referred to our tertiary care centre from the periphery with term pregnancy with bilateral huge hydronephrosis. She had complaints of bilateral flank pain along with intermittent lower abdominal pain for four hours. She had uneventful antenatal period except mild right sided flank pain after 30 weeks which neither alarmed her nor her obstetrician till it increased in intensity at term. No previous treatment was taken for the same. The patient had history of hydronephrosis in previous pregnancy which was treated conservatively and she was lost to follow up after full term normal delivery in a peripheral

hospital. She had no fever, hematuria, pyuria, decreased urine output or breathing discomfort.

On examination, her vitals were within normal limits. On per abdominal examination, there was bilateral flank fullness with non-deviated central gravid uterus. On per-vaginal examination, cervix was 3-4 cm dilated, 50 % effaced with well applied head, presenting part was vertex and the pelvis was adequate. Cardiotocography revealed reactive fetus with 3 to 4 contractions in 10 minutes. On trans abdominal ultrasonography, right kidney revealed 25 x 13 cm, crossing the midline, right pelvis AP diameter > 16 mm with gross hydronephrosis, thin parenchyma with thick internal echoes; (Figure 1) and the left kidney revealed 13x8 cm, left pelvis AP diameter>10.5 mm, gross hydronephrosis with parenchymal thickness <3mm (Figure 2).There was no evidence of calculi. Her renal function tests were within normal limits (Creatinine:1.06 mg/dl,Urea:21mg/dl, Uric acid: 7.2 mg/dl).Multidisciplinary team including urologist, nephrologists and obstetrician were involved. In view of favorable obstetric condition, decision to allow her progress of normal labour followed by post-partum intervention in form of bilateral double J (D-J) stenting, if needed percutaneous nephrostomy was taken.

The risks including pyelonephritis, hematuria, and rupture of enlarged hydronephrotic sac, loss of unilateral or bilateral renal function along with small chance of dystocia due to malalignment of uterine axis were explained. Written informed consent was obtained. She progressed spontaneously to full dilatation in next 4 hours. Prophylactically outlet ventouse to cut short the duration of second stage of labor was applied; and she delivered a live healthy,3.1 kg male child. Her postpartum period was uneventful. Her vitals were stable with no fever and hematuria along with moderate flank pain. On the second post-partum day, non-contrast CT scan was done which corresponded to the findings of abdominal USG (Figure

3). Bilateral D-J stenting was done, which identified kink in lower one third of both ureter, cause of which remain unidentified (Figure4).

The patient was discharged on the second post-operative day, without any complications and was lost to follow up there after.

Discussion

Bilateral gross hydronephrosis occupying both the flanks is relatively rare to occur in pregnancy. Another definition of giant hydronephrosis is when the affected kidney occupies hemi abdomen, reaches or crosses midline and covers area of five vertebrae⁷. It is commonly due to obstruction at pelviureteric or ureterovesical junction, stone, stricture, ectopic ureter or rarely tuberculosis is the cause⁸.Hydronephrosis during pregnancy is usually asymptomatic but it may sometimes contribute to recurrent attacks of pyelonephritis, flank pain or ureteric colic which warrants treatment and rarely, end up in acute or chronic renal failure⁹. William et al. identified flank pain as the most frequent presentation of hydronephrosis but denied hydronephrosis to be considered as a sole cause of flank pain, in absence of clinical evidence¹⁰. Roshni et al. reported unusual case of rupture of collecting system of left kidney and suspected preterm labor as a cause for the same¹¹.

USG is the best, rapid and safe modality for diagnosis and intervention in pregnant patients. Various modalities of treatment have been suggested by various authors ranging from per cutaneous nephrostomy, bilateral D-J stenting to USG guided per cutaneous drainage^{8,12}.Patients with PCN in situ are difficult to manage on OPD basis and are prone to infection. Per cutaneous drainage, even though the least invasive, still carries the risk of infection and small chances of hemorrhage. Recurrence and incomplete aspiration are the major limiting factors. In this scenario, D-J stenting is the ideal modality of treatment. It can be inserted under local or short General anesthesia rapidly in

expert hands. Tarek et al. reported a case series of antenatal patients managing hydronephrosis conservatively by making patients sleep in 10 degree head low position, keeping the affected side up¹³. This modality can also be tried in patients with mild symptoms in a view to avoid invasive intervention.

Choosing the correct method of delivery is another concern in patients with bilateral gross hydronephrosis. Strickland et al. reported a case in which a giant hydronephrosis was associated with deviated uterus and malalignment of uterine axis, leading to dystocia, ultimately resulting in delivery by LSCS¹⁴. Theoretically, kidney are situated retroperitoneal and unlikely to interfere during normal labour, even though enlarged. In our patient, in spite of, bilateral flank fullness due to gross hydronephrosis, gravid uterus was centrally situated without malaligned uterine axis. Other obstetrics factors were also favorable, making normal delivery possible. Instrumental delivery was conducted, in order to cut off duration of second stage of labour, keeping in mind a rare possibility of rupture of hydronephrosis due to uterine contraction¹¹.

Conclusion

So to conclude, bilateral gross hydronephrosis is uncommon to occur during pregnancy, requiring immediate attention of health care professionals. Meticulous observation for signs and symptoms of complications and management with the help of multidisciplinary team is the gold standard. Cesarean section should be performed only for obstetric indications. Counseling regarding various risks and treatment options and patient's own willingness to remain adhere to the treatment and follow up schedule are the pillars to successful feto-maternal outcome.

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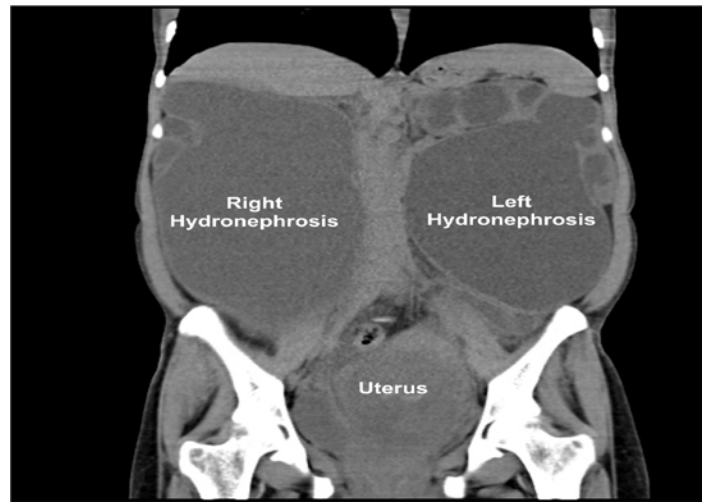


Image 3 : CT scan showing bilateral hydronephrosis

Images



Image 1 : Right Kidney Hydronephrosis

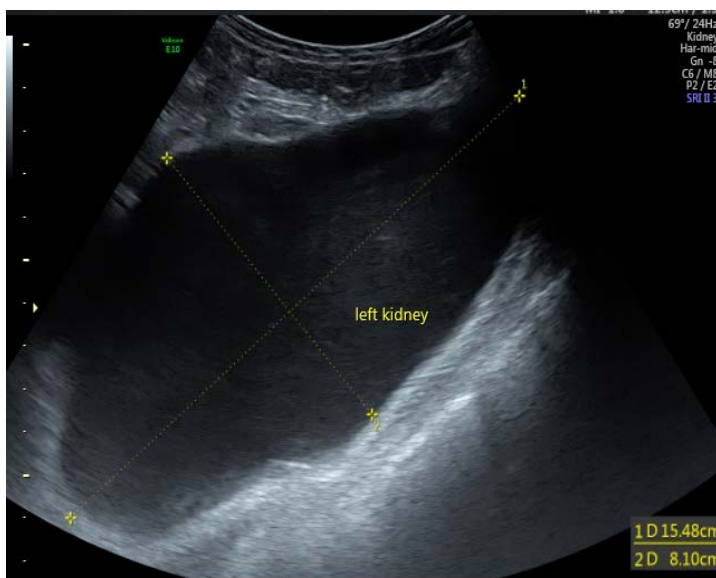


Image 2: Left Kidney Hydronephrosis



Image 4 : CT scan showing bilateral D-J stenting