Spontaneous Ureteral Rupture Postpartum : A Case Report

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Introduction

Spontaneous ureteral rupture associated with pregnancy is a rare but important pathology.
Prompt diagnosis and early intervention is essential to ensure good maternal and foetal outcome.
Management by multi-disciplinary approach is essential.
We present a case of spontaneous right ureteric rupture in pregnancy and highlight the difficulties in diagnosis.

Fig.1 Plain abdominal film

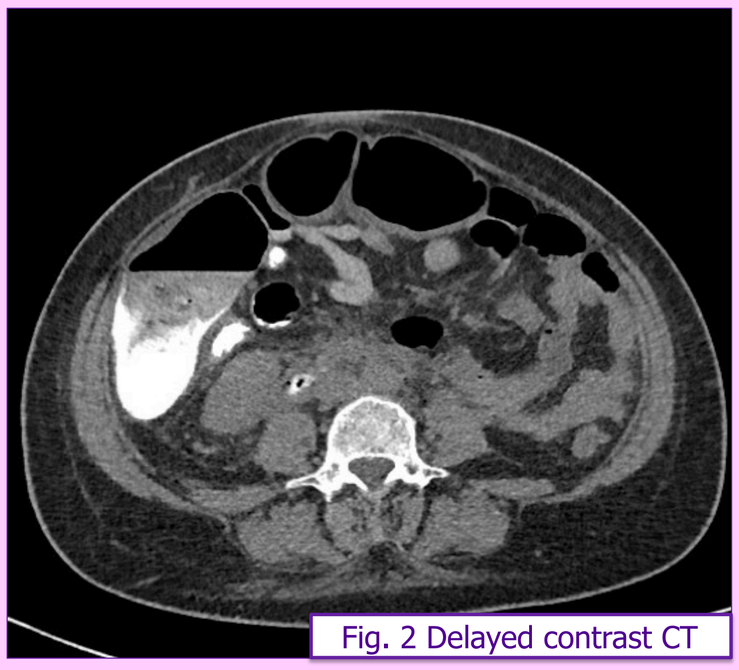

Fig. 2 Delayed contrast CT

Discussion

Dilatation of the upper urinary tract is common in pregnancy, with reported incidence higher than 80% [1], however rupture of the tract is rare. Hydronephrosis and hydroureter occur most often in primigravida[1] and in the vast majority of cases on the right side. This dilatation in pregnancy is known to involve the renal pelvis and ureter above the pelvic brim only [2], implying that the primary site of compression of the ureter is at the pelvic brim. Right side is affected due to the combination of the compression of the ureter by the right ovarian artery and vein, hormonal atony and dextrorotation of the gravid uterus, which usually happens abruptly after the 20th week of pregnancy.

Clinical presentation of ureteric rupture is often non-specific, with differentials of renal colic, appendicitis or cholecystitis. Rupture of the renal parenchyma may present with a palpable mass in the flank, caused by collection of blood and urine in the perirenal fat, sudden onset flank pain, loin pain and signs of haemorrhagic shock. Pyrexia may suggest an infected urinoma or a chemical peritonitis [3]. As in our case, urine may leak and spread retroperitoneally along fascial planes, therefore not producing the clinical sign of peritonitis.

Imaging should be guided by the differential diagnoses considered. Hydronephrosis, calculi and perinephric urinomas can be visualized on ultrasonography[3]. In our case, an initial plain abdominal film demonstrated a dilated caecum and ascending colon, with tapering at the splenic flexure. This sign is more commonly associated with acute pancreatitis, and rarely ureteric rupture. Delayed phase CT is the modality of choice to assess urinary collecting system leaks [3].

Management depends on the site of rupture. Main objectives are pain relief, preservation of renal function and facilitating spontaneous healing of the rupture site. Our patient had a JJ stent inserted at ureteroscopy to enable free drainage of the tract and closure of the rupture site. Nephrostomy is an alternative option. Appropriate antibiotic cover should be commenced. In extreme circumstances, where there is clinical deterioration, increase in size of collection or ongoing bleeding, a nephrectomy may be required [4].

We can hypothesize that increased pressure in the collecting system from hydronephrosis contributed to the rupture of the ureter in our patient. It is highly unlikely the use of KIWI omnicup at time of delivery would have contributed to it.

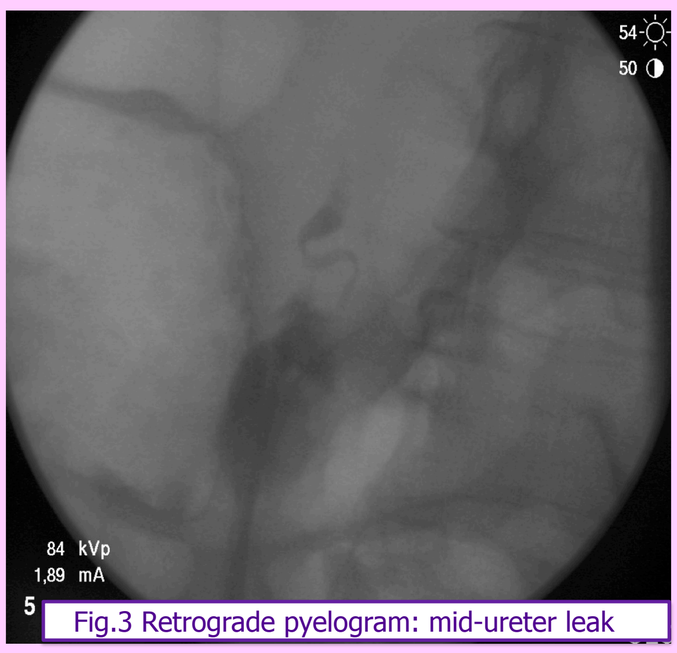

Fig.3 Retrograde pyelogram: mid-ureter leak

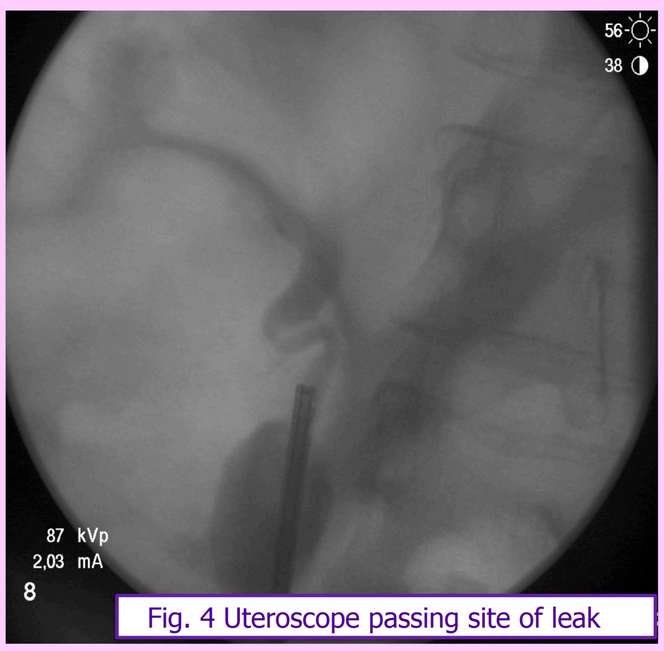

Fig. 4 Uteroscope passing site of leak

Conclusion

Abdominal pain in pregnancy and postnatal period should alert obstetricians to consider urinary tract pathology in order to avoid serious sequelae.
There are currently no reports of repeat rupture in subsequent pregnancies, however it is likely that previous ureteric damage increases risk [4], hence close antenatal monitoring in future pregnancies is essential.
Multidisciplinary team involvement including urology in management and follow up is paramount.

References

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2.Suzanna J Meyers, MD, Richard V. Lee, MD, Richard W. Munschauer MD; Dilatation and non-traumatic rupture of urinary tract during pregnancy; 66(6); 809-15
3.J.M.Wolff, P.K.Jung, G.Adam, G.Jaske Non-traumatic rupture of the urinary tract during pregnancy, BJU International Vol 76(5); 645-648; 1995
4.Roshni Upputalla, Robert M. Moore, Belinda Jim Spontaneous Forniceal Rupture in Pregnancy Case reports in Nephrology 2015(2015)