Case Report:

Spontaneous bilateral perinephric urinoma in a postpartum woman

[1]DR. Yogesh Deshmukh , [2]DR. Seema Alwadhi , [3]DR. Supreethi Kohli , [4]DR. Saroj Kumar Pati

[1]SENIOR RESIDENT (RADIOLOGY DEPARTMENT), PGIMSR & ESIC MODEL HOSPITAL, BASAIDARAPUR RING ROAD, NEW DELHI.

[2]SPECIALIST (RADIOLOGY DEPARTMENT),PGIMSR & ESIC MODEL HOSPITAL, BASAIDARAPUR RING ROAD, NEW DELHI.

[3]HEAD OF RADIOLOGY DEPARTMENT,PGIMSR & ESIC MODEL HOSPITAL, BASAIDARAPUR RING ROAD, NEW DELHI.

[4]SENIOR RESIDENT (RADIOLOGY DEPARTMENT), PGIMSR & ESIC MODEL HOSPITAL, BASAIDARAPUR RING ROAD, NEW DELHI.

Corresponding author: DR. YOGESH DESHMUKH

ABSTRACT:

Urinoma develops secondary to extravasation of urine from urogenital system that is kidneys, ureters, urinary bladder or urethra. Spontaneous perinephric urinoma is less common and caused by obstructive uropathies include ureteral calculus, retroperitoneal / pelvic masses, congenital anomalies, pregnancy and chronically distended bladder.

Spontaneous bilateral perinephric urinoma secondary to an over distended bladder causing urinary extravasation in post partum period is not that common. We report a case of spontaneous bilateral perinephric urinomas in a post partum patient.

Keywords: urogenital system, urinoma, postpartum period.

CASE REPORT:

A 26 years old woman came with sudden onset oliguria & vague abdominal pain more in bilateral flank. Patient gives history of normal full term vaginal delivery 3wks back. No past history of abdominal trauma or evidence of stone disease or urinary tract infection during pregnancy. Clinical examination revealed fullness of abdomen and mild tenderness in the bilateral flank. Biochemical examination revealed normal BUN & serum creatinine.

Patient was referred for CT urography. NCCT showed unilocular fluid attenuating collections in bilateral perinephric regions more on the right side (Figure 1). Kidneys show normal enhancement on contrast study with fullness of bilateral pelvicalyceal system & mild renal pelvic wall thickening (Figure 2 - A & B). Bilateral ureters were mildly dilated in entire length, showing mild wall thickening. Urinary bladder also shows significant wall thickening with foleys bulb in situ & mild perivasical fat stranding. No extravasation of contrast seen into bilateral perinephric collections on delayed scan (Figure 3).

A complementary MRI abdomen showed fluid intensity i.e. hyperintense on T2WI & hypointense on T1WI collections in bilateral perinephric regions (Figure 4).

Percutaneous diagnostic tap was performed through the right perinephric collection, showed pale yellow colour fluid. Analysis of fluid confirmed presence of urine.

Patient was conservatively managed with foleys bulb in urinary bladder & antibiotic course. Follow up USG after 3wks revealed minimal residual perinephric collections suggesting significant resolution (Figure 5).

Figure 1: NCCT showing unilocular bilateral perinephric fluid collections (right > left).

Figure 2: CECT Abdomen & pelvis - A & B- Axial section & coronal reformatted images showing unilocular, nonenhancing bilateral perinephric collections & normally enhancing bilateral kidneys with fullness of pelvicalyceal system & mild renal pelvic wall thickening. Also wall thickening is noted in urinary bladder with mild perivasical fat standing.

A. B.

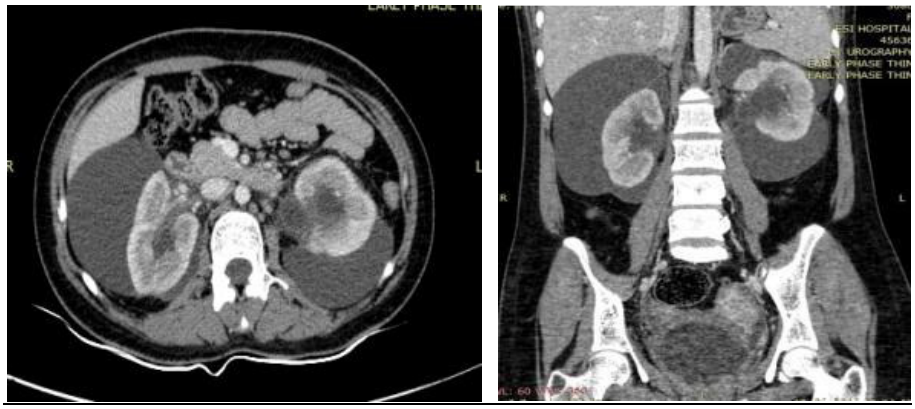

Figure 3: Delayed scan of Abdomen & pelvis – coronal reformated image showing opacification of bilateral renal pelvis, ureters & urinary bladder. No opacification of bilateral perinephric collections noted.

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Figure 4 –Coronal reformatted images of abdomen. A - coronal T2 WI showing hyperintense bilateral perinephric collections. B - coronal T1 WI showing hypointense bilateral perinephric collections.

A. B.

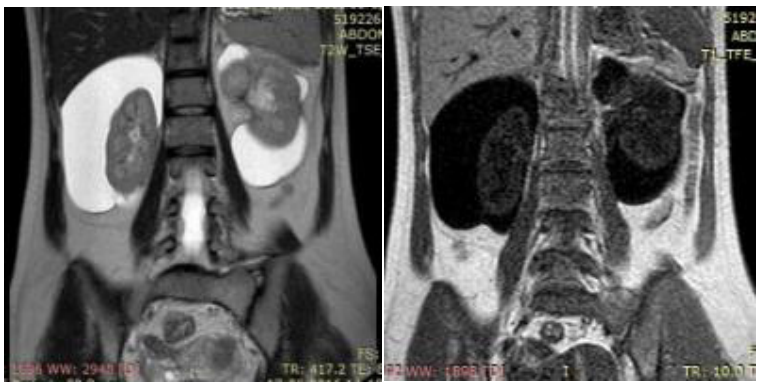
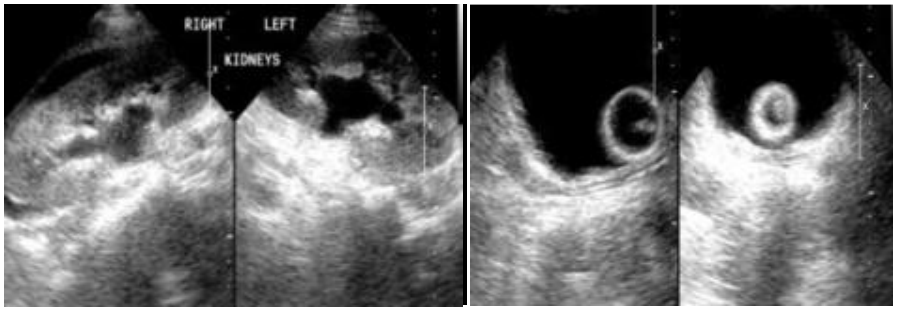


Figure 5 - Follow up Ultrasound showing mild perinephric collection on right side, no perinephric collection on left side & fullness of pelvicalyceal system on both sides, suggesting significant resolution in perinephric collections. B – Ultrasound image showing thick walled urinary bladder with foleys bulb.

A. B.



DISCUSSION:

Urinoma develops secondary to extravasation of urine from urogenital system that is, kidneys, ureter, urinary bladder or urethra. Perinephric urinoma result from disruption of the calices, infundibuli or renal pelvis. Most commonly urine leaks result from blunt or penetrating renal trauma or surgical procedures. Non traumatic spontaneous perinephric urinomas is less common may also be the result of transmitted back pressure caused by obstruction of the genitourinary system due to a ureteral calculus, reptroperitoneal / pelvic masses, congenital anomalies, pregnancy and chronically distended bladder (2).

Urinomas may be confined or encapsulated fluid collections or may manifest as free fluid (3). However, most urinomas seen in subcapsular location or extend into the perirenal space within the Gerotas fascia or if extensive may cross the midline, anterior to the aorta and inferior vena cava and extend into the contra lateral perirenal space (4 & 5). Urine may extend superiorly into the mediastinum through the aortic hiatus and into the pleural space through the diaphragm or through lymphatic vessels (5). Inferiorly it may extend along the iliopsoas muscle to the soft tissues of the thigh, pelvis, buttocks, or scrotum or into the perineum. A urine leak may extend into the

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intraperitoneal cavity, usually a result of penetrating or iatrogenic injury (5).

Bilateral perinephric urinoma in pregnancy or post partum status are very rare in literature. It is common in women with nulliparity, longer labor course, instrumental delivery, extensive vaginal and perineal laceration and epidural anesthesia (1). Spontaneous perinephric urinoma in pregnancy may caused by obstruction to urinary track and /or with hormonal influence. Obstruction leads to increase in intrarenal pressure, pyelosinus backflow and subsequent rupture of calyceal fornices, resulting in extravasation of urine (6-8).

In pregnancy mild hydronephrosis is common seen in approximately 80% of cases, mostly in right side, which completely resolves in the postpartum period (9).

Initial investigation for a suspected case of urinoma is abdominal ultrasonography. Computed tomography (CT) is the study of choice (10). CT protocols in patients with a suspected urine leak involve NCCT of abdomen and pelvis, followed by intravenous administration of 100–150 ml of contrast material. Delayed phase images (obtained 5–20 minutes after contrast material injection) is important for demonstrating accumulation of contrast in a urine leak. Even if urinoma is not suspected at the time the CT protocol is prescribed, it may still be diagnosed following CT if the location and pattern of spread of the fluid collection is recognized (10).

If the diagnosis of urinoma remains uncertain following diagnostic imaging, the fluid may be aspirated percutaneously. Urinomas demonstrate significant elevation of creatinine levels and decreased glucose levels relative to serum levels.

If urinoma is left untreated, it can lead to serious complications like perinephric abscess, urinary granuloma, retroperitoneal fibrosis, systemic sepsis and electrolyte imbalance.

In most instances, small urinomas will reabsorb spontaneously and drainage is not necessary (5). However, if urinomas are larger or persist over several days or if the patient develops complications, USG or CT guided drainage is necessary. Sometimes a percutaneous nephrostomy catheter may be placed in addition to the percutaneous urinoma drainage to facilitate urinary drainage.

CONCLUSION:

Spontaneous perinephric urinoma in postpartum period is extremely rare and caused by mechanical obstruction of ureters and/or by physiologic hormonal effects on urinary system. Possible diagnosis of urinomas should be kept in mind in postpartum woman presenting with vague abdominal pain & swelling to prevent serious complication and to preserve renal function as well.

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