

Torsion of ovarian dermoid cyst mimicking obstructing urinary tract stone



Hoi Lung Wong^{*}, Victor Hip Wo Yeung, Sau Kwan Chu, Chi Wai Man

Division of Urology, Department of Surgery, Tuen Mun Hospital, Hong Kong

ARTICLE INFO

Article history:

Received 4 August 2017

Received in revised form

28 August 2017

Accepted 26 September 2017

Available online 7 October 2017

Keywords:

Ovarian dermoid cyst

Renal colic

KUB

1. Introduction

Acute loin pain is commonly seen in daily practice, and obstructing urinary tract stone is one of the top diagnoses. The diagnostic modality of choice includes urinalysis, X-ray of the Kidney, Ureter and Bladder (KUB), ultrasonography (USG) and non-contrast computed tomography (NCCT). Important life-threatening differential diagnoses including abdominal aortic aneurysm, ovarian torsion and acute appendicitis. In this case report, we present a case of torsion ovarian dermoid cyst which presented with acute loin pain with misleading calcifications in KUB, and was mistaken as ureteric and renal stones.

2. Case presentation

A 35-years-old lady presented with right loin pain for three days, and the pain radiated to central abdomen. There was no associated haematuria, stone passage or gastrointestinal symptoms. She attended the accident and emergency department and had KUB taken (Fig. 1). The films showed calcifications over the

regions of right kidney and right distal ureter. She was transferred to Department of Urology for further care of her renal colic.

On abdominal examination, she had an obese abdomen, there was no palpable mass. There was tenderness over the right loin and right upper quadrant of abdomen, and the vitals signs were stable on admission. Bedside USG showed no hydronephrosis and no renal stone.

The complete blood count showed mildly elevated white cell count ($11.2 \times 10^9/L$). The renal function was normal, and urinalysis showed no red blood cells, and leukocyte esterase and nitrate were negative. Subsequently, the urine culture was also negative.

She complained of persistent right side abdominal pain despite analgesics and developed low grade fever. NCCT of abdomen and pelvis was performed to look for any urinary stone related complications. The NCCT (Fig. 2) showed a $15 \times 10 \times 14.6$ cm lesion containing fat density and ossification at the midline and slightly to the right side, which represented a dermoid cyst from the left ovary. Adjacent soft tissue standing was noted, and the left fallopian tube was edematous. Two other lesions were seen at the right adnexal region likely from the right ovary. One measured $4.2 \times 3.5 \times 4.4$ cm and contained both fat density and ossification. One measured $3.8 \times 3.8 \times 4.8$ cm and contained a fat density. Both kidneys were normal, and there was neither hydronephrosis or urinary stone seen.

The gynaecologist were consulted, and they performed an urgent laparotomy with left salpingo-oophorectomy. Intra-operative findings showed a 15-cm left dermoid cyst and tube with torsion of 2520° (7 turns) with gangrenous changes but without sign of reperfusion after detorsion. The cyst contained sebaceous material and hair. Another two right dermoid cyst, containing sebaceous material, hair, and teeth. She recovered soon after the operation and was discharged.

3. Discussion

Acute loin pain is commonly associated with urinary calculus disease. The KUB film is commonly used in the initial investigation. The KUB film is readily available with a lower cost however it is limited by its sensitivity. Urinalysis has its role as well, urinary stone is commonly associated with microscopic haematuria, urinalysis has a higher sensitivity but low specificity as it may be positive in

^{*} Corresponding author.

E-mail address: simonwonghoilung@hotmail.com (H.L. Wong).

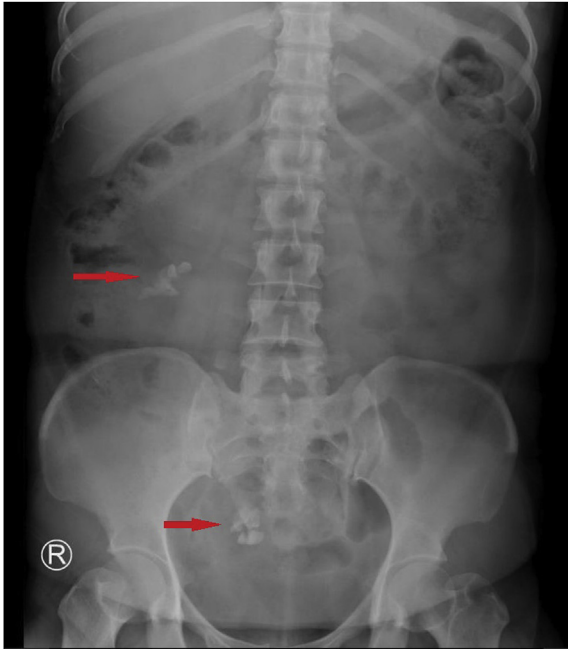


Fig. 1. KUB film showed multiple calcifications at the right renal pelvic and distal ureteric regions.

other non urinary stone disease such as chronic kidney disease, pyelonephritis or cystitis.

KUB radiography can provide a guide before going for further

intervention such as shockwave lithotripsy or ureteroscopy. However, KUB radiography imaging provides single view stones at one angle, it has a relative low sensitivity and specificity which limiting its utility. The sensitivity and specificity of standard KUB radiography alone is estimated to be 57% and 76%, respectively.¹ The sensitivity and specificity of detecting stone disease can be increased by additional imaging such as ultrasonography or CT scan. The sensitivity of combined KUB and US (requiring both tests to be positive for diagnosing the presence of a calculus) was 89%, the specificity 100%, the positive predictive value 100%, and the negative predictive value 81%.²

The NCCT can identify most stone types, except Indanivir stones. However, it is limited by its radiation exposure, cost and overuse. Apart from urinary calculus disease, other potentially life-threatening diagnoses including abdominal aortic aneurysm, ovarian torsion, and acute appendicitis may mimic renal colic and must be considered and excluded. CT scan can pick up important alternative diagnoses and should be considered when we are considering other pathology.

CT is currently considered by the American Urological Association to be the gold-standard modality for evaluation of patients with acute flank pain where clinical suspicion of nephrolithiasis exists. CT is also recommended by the European Association of Urology as the modality of choice after inconclusive ultrasonography.

Upon reviewing the literature, torsion of dermoid cyst masquerading as ureteric colic is not uncommon.^{3–5} Table 1 shows a comparison among these cases, and all of them presented with loin pain and calcifications seen on X-ray. In some cases, unnecessary procedures such as ureteroscopy and JJ-stent insertion were performed, and the patient did not receive the appropriate treatment timely. In our case, we perform additional investigations

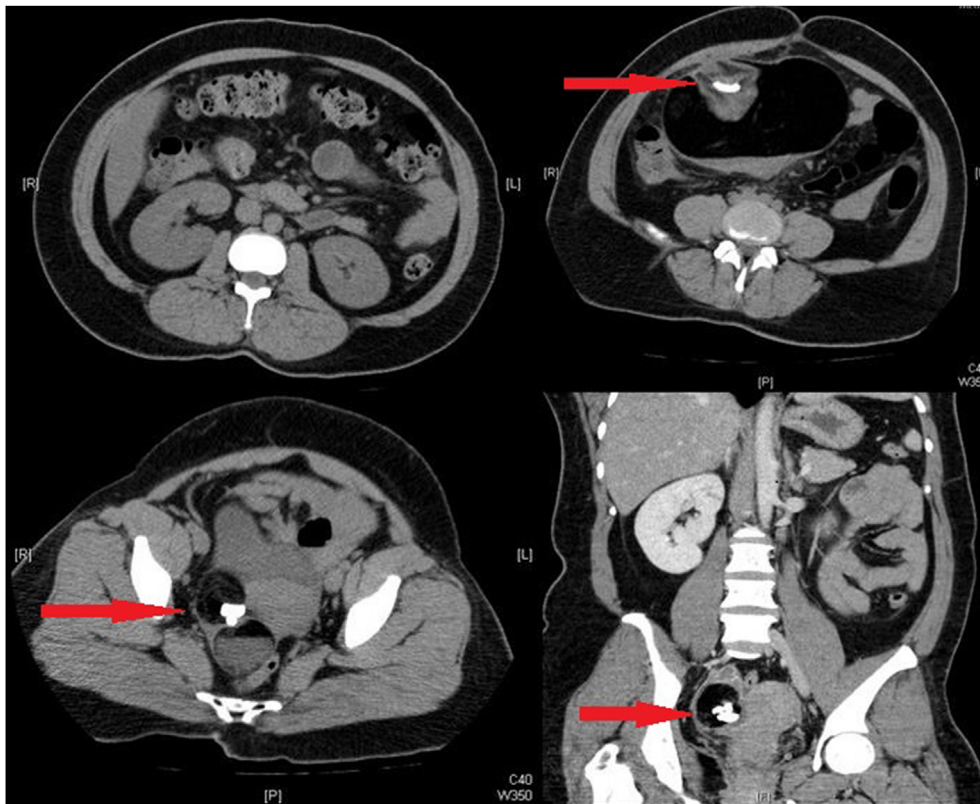


Fig. 2. CT Abdomen and Pelvis showed an absence of urinary stone and confirmed the bilateral dermoid cyst of ovary with suspected torsion.

Table 1
Recent Published Reports on dermoid cyst mimic urological condition.

No.	Author	Year	Presentation	Initial Imaging	Intervention	Additional Imaging	Diagnosis	Treatment
1	Wong, Yeung (current paper)	2017	Acute loin pain	KUB showed Right renal and ureteric opacity	n/a	CT	Torsion of ovarian dermoid cyst	Left salpingo-oophorectomy
2	Mohamed Omar ³	2017	Lower urinary tract symptoms (LUTS)	KUB showed a 1 cm radio-opaque at the right uretero-vesical junction	Ureteroscopy showed absent of radio-opacity. Cystoscopy showed a cystic mass with incomplete TURBT done	n/a	Bladder dermoid cyst	Partial cystectomy for mature bladder dermoid cyst
3	Sankar Neelakantan ⁴	2016	Right sided colicky abdominal pain	Abdominal ultrasound examination showed right sided mild hydroureteronephrosis	n/a	CT	Right ovarian dermoid cyst causing obstructive right hydroureteronephrosis	Right oophorectomy
4	Aiken WD ⁵	2015	Left side abdominal pain	IVU showed 1 cm irregular radio-opacity just below the left sacroiliac joint and left hydronephrosis and hydroureter down and just medial to the level of the radio-opacity	Left double J stent	n/a	Post op CT demonstrated a 4.3 cm × 3 cm hypodense mass in the left hemi-pelvis containing calcific left ovarian dermoid cyst	Total abdominal hysterectomy (TAH) and bilateral salpingo-oophorectomy (BSO).

including USG and NCCT to make the correct diagnosis, and ensure the patient's appropriate treatment (i.e. salpingo-oophorectomy) is not delayed.

4. Conclusion

Acute loin pain with calcifications seen on X-ray can be mistaken as ureteric colic. Additional investigations such as ultrasound and CT scan should be done to confirm the diagnosis in order to avoid any unnecessary procedures done on the patient.

References

1. Brisbane W, Bailey M, Sorensen M. An overview of kidney stone imaging techniques. *Nat Rev Urol.* 2016;13(11):654–662.
2. Gorelik U, Ulish Y, Yagil Y. The use of standard imaging techniques and their diagnostic value in the workup of renal colic in the setting of intractable flank pain. *Urology.* 1996;47(5):637–642.
3. Omar M, El-Gharabawy M, Samir A, El sherif E, Monga M. Mature cystitic teratoma of the bladder masquerading as a distal ureteral stone. *Urol Case Rep.* 2017;13:94–96.
4. Neelakantan S, Reddy R, Swamy A. Ovarian dermoid presenting as unilateral obstructive uropathy. *BMJ Case Rep.* 2016. bcr2016216878.
5. Aiken W, Mayhew R, Mitchell S, Stennett M, Johnson P. Ovarian dermoid cyst causing distal ureteral obstruction. *West Indian Med J.* 2015.