Ureterosciatic hernia with pyonephrosis and obstructive uropathy: a case report

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Introduction

Ureterosciatic hernia is an extremely rare cause of ureteral obstruction. We report a patient with left pyonephrosis and obstructive uropathy caused by a ureterosciatic hernia.

Case report

A 97-year-old woman with a history of ischaemic stroke, hypertension, hyperlipidaemia, and chronic obstructive pulmonary disease attended the Accident and Emergency department of Kwong Wah Hospital in January 2020 with a 1-day history of decreased general health and vomiting. She had no urinary or bowel symptoms. Her vital signs were stable on admission and physical examination of her cardiorespiratory and abdominal systems was unremarkable.

Blood tests on admission revealed acute kidney injury with serum creatinine level of 387 μmol/L (baseline 73 μmol/L), leucocytosis (23.8 × 10^9/L), and elevated C-reactive protein level of 287 mg/L.

Kidney, ureter, and bladder plain radiograph revealed the absence of urinary stone. Amoxicillin with clavulanic acid were administered intravenously. The following day the patient developed fever up to 40.1°C with abdominal pain. Urgent contrast computed tomography scan of the abdomen and pelvis showed moderate-to-severe left hydronephrosis (Fig 1) with hydroureter up to 1.4 cm down to the distal ureter at the level of the left greater sciatic foramen, where the ureter herniated out of the pelvis with an abrupt calibre change (Fig 2). There was reduced enhancement of the left kidney with no contrast excretion evident on the delayed phase. Retrograde ureteral stenting was performed and 30 mL pus was drained from the left kidney.

Blood and urine cultures grew *Escherichia coli*. The patient recovered gradually with a 2-week course of antibiotics. The double-J stent was removed at the end of March (2 months after stent insertion). However, she developed another episode of urosepsis shortly afterwards and a double-J stent was re-inserted. She remained well with regular revision of double-J stent.

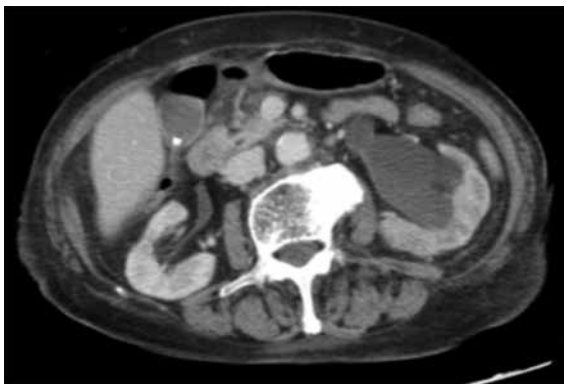

FIG 1. Axial computed tomography image showing left hydronephrosis

Discussion

Ureterosciatic hernia is a rare disease with no more than 40 cases published worldwide to date.[1] It occurs when the peritoneal sac and its contents (eg, ovary, small intestine, colon, greater omentum) protrude through the greater or lesser sciatic foramen.[2] When the ureter becomes involved in the herniated contents, it is called ureterosciatic hernia. The sacrospinous ligament divides the sciatic notch into the greater and lesser sciatic foramina. The piriformis muscle subdivides the greater sciatic foramen into the suprapiriformis and infrapiriformis compartments. Ureterosciatic herniation commonly occurs through the suprapiriformis compartment of the greater sciatic foramen.[2] Herniation of the ureter into the greater sciatic foramen often results from piriformis muscle weakening due to increased pressure in the intra-abdominal area due to pregnancy, constipation, surgery, trauma, neuromuscular diseases, or hip disease.[3] It commonly develops in elderly women due to their wider pelvic bones but congenital cases have also been reported. The left ureter is affected more often than the right.[4]

The clinical presentation of ureterosciatic hernia varies and can range from asymptomatic to life-threatening urinary sepsis or obstructive uropathy. Patients may complain of flank or

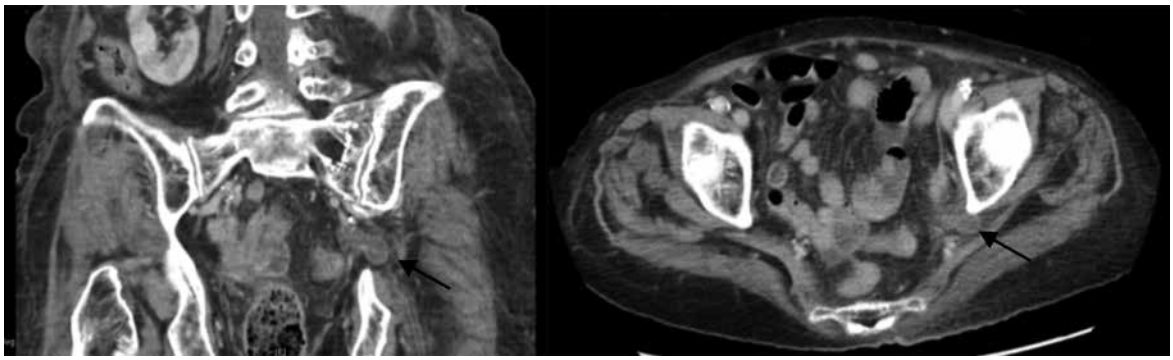

FIG 2. Coronal and axial computed tomography images showing left ureter with herniation into the left sciatic foramen (arrows)

abdominal pain, nausea, and vomiting. A palpable mass over the affected area may be present.[2]

Since the signs and symptoms of ureterosciatic hernias are rather non-specific, the diagnosis is commonly made by radiographic studies including intravenous urogram, retrograde pyelography, and computed tomography. Obstruction of the ureter with U-shaped tortuosity into the sciatic foramina, also referred to as a "curlicue ureter" sign, is suggestive of ureterosciatic hernia.[5]

Treatment options include observation (mostly for asymptomatic patients), ureteral stenting, and surgical correction. Open, laparoscopic and robotic approaches have been described for reduction of the ureter and hernia repair.[1] As our patient was aged 97 years with multiple co-morbidities, surgery was not considered.

Conclusion

Although seldom seen, ureterosciatic hernias are occasionally encountered. Diagnosis can be a challenge given its non-specific symptomatology and rarity.

Author contributions

Concept or design: All authors.
Acquisition of data: CYC Chan.
Analysis or interpretation of data: CYC Chan.
Drafting of the manuscript: CYC Chan and TCT Lai.
Critical revision of the manuscript for important intellectual content: CYC Chan.

All authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

Conflicts of interest

All authors have disclosed no conflicts of interest.

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Ethics approval

The patient was treated in accordance with the Declaration of Helsinki. The procedure was done under 2MO consent as the patient's condition was unstable at the time. Risks of and indications for the procedure were discussed with the patient's daughter who showed understanding and agreed to proceed. The patient provided consent for publication.

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