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BILATERAL HYDROURETERONEPHROSIS AS A SEQUELAE OF PELVIC LIPOMATOSIS: A RARE CASE REPORT
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BILATERAL HYDROURETERONEPHROSIS AS A SEQUELAE OF PELVIC LIPOMATOSIS: A RARE CASE REPORT

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SUMMARY

***Background*: Pelvic lipomatosis as a cause of incidental bilateral hydrouereteronephrosis is very rare. It is considered a benign condition but can cause variable symptoms and presentations due to compression of pelvic organs, although it is mostly asymptomatic. The symptoms can include urinary tract obstruction which can cause deranged renal function tests, constipation, tenesmus, lower limb oedema and deep venous thrombosis.**

***Case*: We present a case of incidental bilateral hydroureteronephrosis resulting from compression of distal ureters by pelvic lipomatosis identified on KUB ultrasound (kidney, ureter, bladder) in a patient being evaluated for infertility. This prompted further evaluation with CT urography which revealed abundance of fat in the pelvis surrounding the bladder resulting in extrinsic compression and elevation as well as surrounding the rectum and sigmoid colon with elongated sigmoid colon and peripherally displaced bowel loops. There was also moderate bilateral hydroureteronephrosis with tapered narrowing of the ureters in the distal third (just below the pelvic brim.**

***Conclusion*: Pelvic lipomatosis is a rare benign condition which is mostly asymptomatic but can present with symptoms due to compression of the pelvic organs with subsequent systemic symptoms such as hypertension. Radiological cross-sectional imaging with CT scan or MRI is adequate for accurate diagnosis and identification of some of the associated complications of this very rare condition.**

INTRODUCTION

Pelvic lipomatosis is a relatively uncommon radiologically diagnosed benign disorder whose aetiology is unknown and mostly picked as an incidental finding on imaging. This condition was first described in 1959 by Engels [1]. Although considered benign, it can cause different symptoms due to compression of pelvic organs by intrapelvic overgrowth of fatty tissue [2]. It is more common in males with a male-to-female

ratio 1.8:1 and has a higher prevalence in African Americans compared to Caucasians[3]. No similar case reports published locally on this condition.

We report a case of incidental bilateral hydroureteronephrosis which was found to be a sequelae of pelvic lipomatosis on imaging.

CASE DESCRIPTION

Patient demographics and history

The patient, 61-year-old male, known hypertensive on medication, presented for evaluation for fertility in an attempt to conceive. At the time of presentation, he had no lower urinary tract symptoms.

Clinical examination

Physical examination was unremarkable.

Imaging findings

As part of his evaluation, he underwent a KUB ultrasound (kidney, ureter, bladder) which revealed moderate bilateral hydroureteronephrosis. This prompted further evaluation with CT urography which revealed moderate dilation of the renal pelvis and calyces bilaterally with associated mild blunting of the fornices and flattening of papillae (figure 1). Bilateral proximal and middle third ureters were also markedly tortuous and dilated with tapered narrowing in the distal third (just below the pelvic brim), maximal diameters 3.2cm on the right and 2.9cm on the left (figure 1 and 2). Distal ureters are normal in calibre terminating at the bladder trigone. No renal or ureteric calculus was identified. Additional findings of an elevated bladder dome with a 'tear shape' as well as thinning and elongation of the bladder base were seen (figure 3). Note was also made of abundant of fat in the pelvis surrounding the bladder resulting in extrinsic compression and elevation as well as surrounding the rectum and sigmoid colon with elongated sigmoid colon and peripherally displaced bowel loops (figure 3).

Differential diagnoses

Pelvic lipoma, liposarcoma, retroperitoneal fibrosis

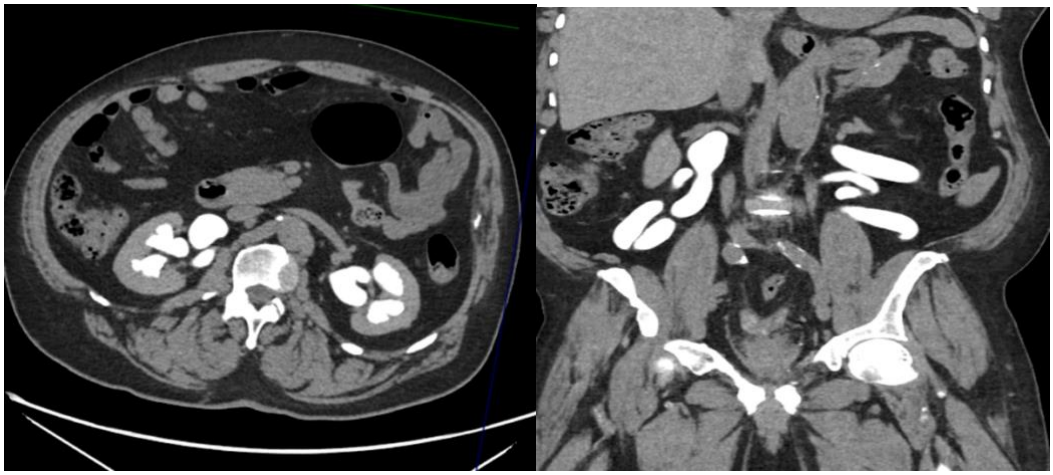

Figure 1: CT urography delayed phase showing moderate dilation of the renal pelvis and calyces bilaterally with associated mild blunting of the fornices and flattening of papillae. Bilateral proximal and middle third ureters were also markedly tortuous and dilated

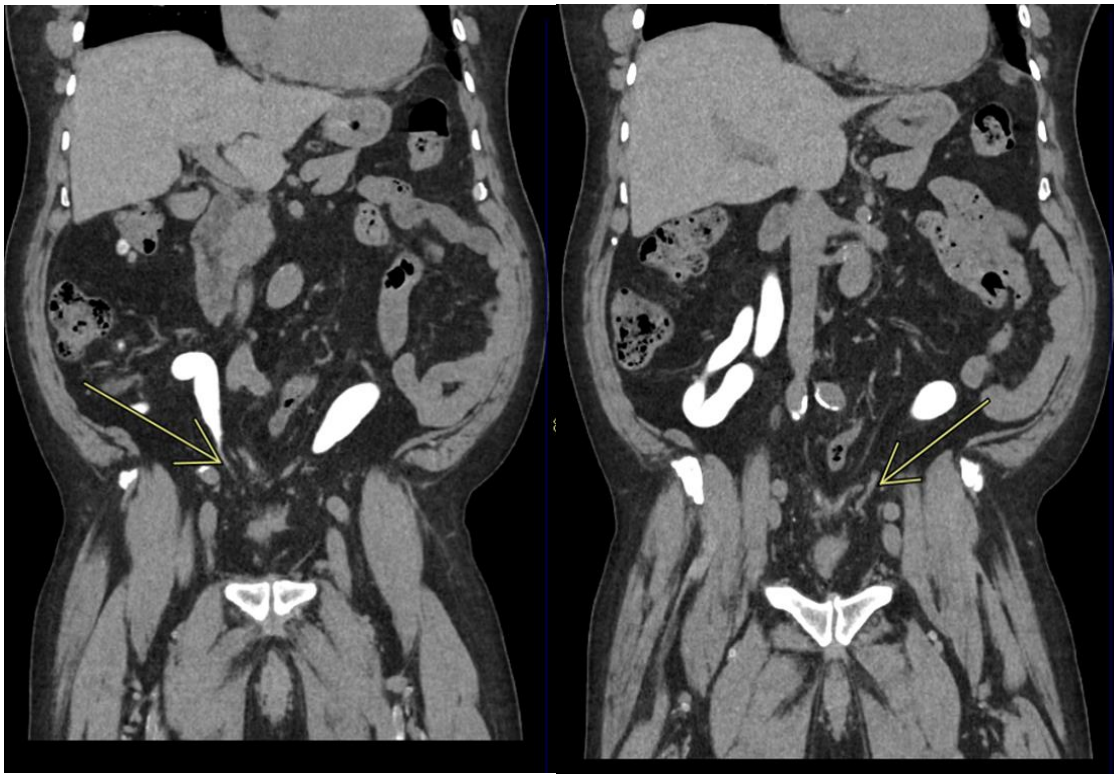

Figure 2: CT urography delayed phase showing tapered narrowing of the distal ureters at the level slightly below the pelvic brim with upstream ureteral dilatation.

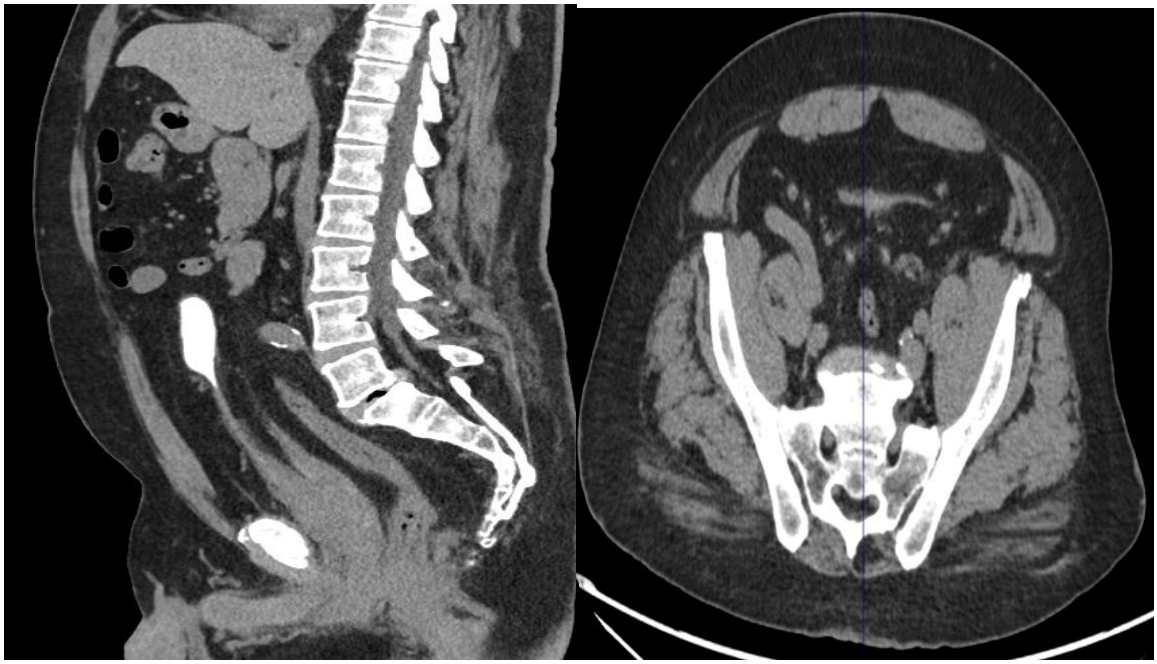

Figure 3: CT urography delayed phase demonstrating elevated bladder dome with a 'tear shape' as well as thinning and elongation of the bladder base. Additionally, there is abundance of fat in the pelvis surrounding the bladder resulting in extrinsic compression and elevation as well as surrounding the rectum and sigmoid colon with elongated sigmoid colon and peripherally displaced bowel loops

DISCUSSION

Pelvic lipomatosis is a relatively rare benign condition mainly diagnosed as an incidental finding during imaging. It represents excessive deposition of fat in the pelvis due to overgrowth of adipose cells leading to compression of pelvic organs. It is more common in males with a male-to-female ratio 1.8:1 and has a higher prevalence in African Americans compared to Caucasians[3].

The cause of pelvic lipomatosis remains unknown. However, there have been speculations that the fat proliferation might be associated with chronic pelvic inflammation due to chronic urinary tract infection[3]. It has also been speculated to be associated with endocrine diseases such as Cushing's syndrome, hypothyroidism and insulin-secreting tumours [4, 5].

Imaging especially with CT scan (specifically intravenous CT urography) is often sufficiently definitive in making this diagnosis without invasive biopsies [6]. This is because of the characteristic appearances of the condition on CT scan or MRI and the effect on the pelvic organs. These appearances include elongated pear-like/ teardrop urinary bladder, sigmoid compression and elongation as well as peripheral displacement of pelvic bowel loops [7].

Although mostly asymptomatic, individuals can present with variable symptoms. The most common symptom is non-specific flank or lower abdominal pain[7]. Our patient was asymptomatic and the diagnosis was incidental. Other reported symptoms include urinary tract obstruction which can cause deranged renal function tests, secondary hypertension, constipation, tenesmus, lower limb oedema and deep venous thrombosis due to pelvic vascular compression[2]. Our patient had bilateral hydroureteronephrosis due to compression of the distal ureters by the pelvic lipomatosis. Hypertension is known to occur in 35-75% of pelvic lipomatosis cases[8] .Our patient was also hypertensive and on treatment, consistent with literature.

Management commonly requires surgical intervention including percutaneous placement of ureteral stents, bilateral ureteral re-implantation. The aim of intervention is to manage complications associated with the condition and is tailored to individual's presentation. Conservative management can be considered in asymptomatic cases. No definite treatment available to eradicate pelvic lipomatosis.

CONCLUSION

Pelvic lipomatosis is a relatively rare benign condition which can present with symptoms due to compression of the pelvic organs with subsequent systemic symptoms such as hypertension. In patients with unexplained obstructive pelvic symptoms or a systemic sequelae of the obstructive process, this condition should be excluded. Radiological cross-sectional imaging is adequate for accurate diagnosis and identification of associated complications.

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