

## Ultrasound quiz: an elderly lady with flank pain

### 超聲波猜謎：一名年老女士的脇痛

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#### Case

A 73-year-old lady presented with 3-day history of fever and right upper quadrant pain. Physical examination revealed both right flank and suprapubic tenderness. Urinalysis at the bedside showed pyuria. The KUB did not reveal any abnormal calcifications. Laboratory studies showed leucocytosis and mildly elevated creatinine level (130  $\mu\text{mol/L}$ ). A preliminary diagnosis of urinary tract infection was made. Ultrasound of the urinary system was performed (Figures 1-3).

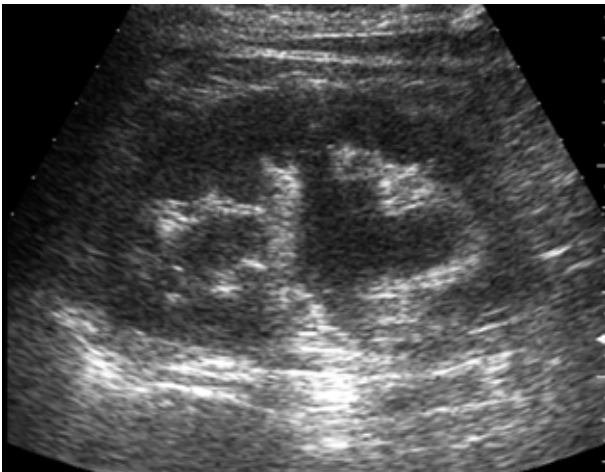


Figure 1. Longitudinal scan, right kidney.

#### Questions

1. What are the abnormalities?
2. What are the differential diagnoses?
3. What further investigation might be helpful?

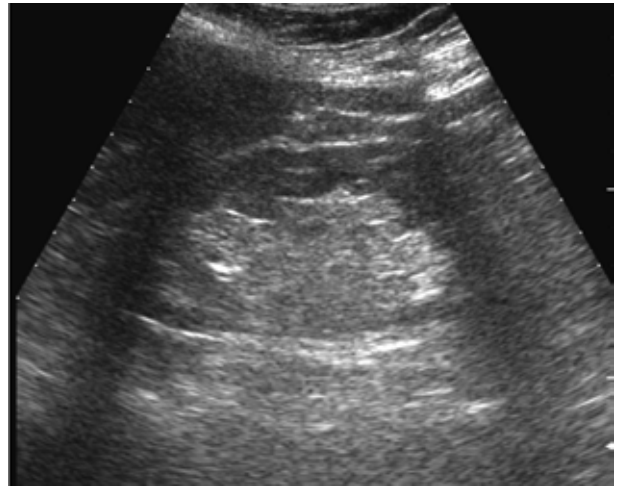


Figure 2. Longitudinal scan, left kidney.

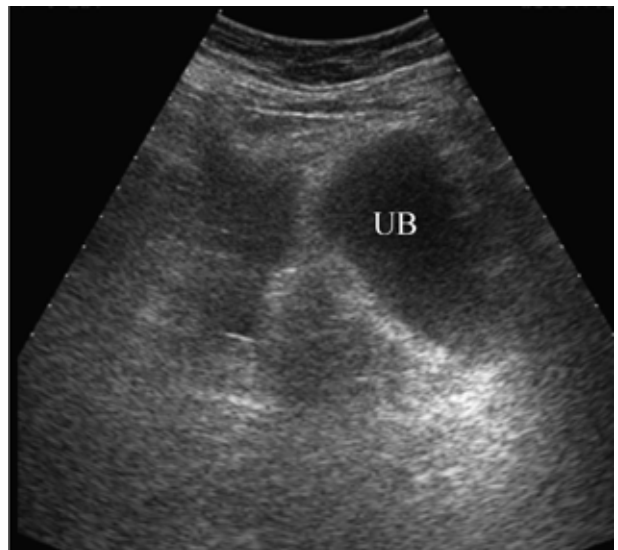


Figure 3. Longitudinal scan of the pelvis (UB = urinary bladder).

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## Answers

1. There is right hydronephrosis and a complex cystic collection above the urinary bladder. The left kidney is normal.
2. Differential diagnoses include hydronephrosis from ureteric narrowing or irritation as a result of a distal inflammatory bowel mass, complex ovarian mass or psoas abscess.
3. Contrast-enhanced CT scan of the abdomen and pelvis. Subsequent CT showed a swollen appendix inseparable from a complex cystic inflammatory mass (Figure 4). There was right hydronephrosis consequent to distal ureteric obstruction by the appendicular abscess.

## Discussion

Appendicitis tends to develop more slowly in elderly patients. The appendix wall is more fibrotic and the area is more readily walled off by omentum and adherent small bowel. Some cases probably resolve spontaneously.<sup>1</sup>



**Figure 4.** Contrast-enhanced CT scan of the pelvis showing a swollen appendix inseparable from a complex cystic mass (arrow).

The most common urinary tract abnormality caused by appendicitis is alteration in the urinary sediment (pyuria and microscopic haematuria).<sup>2</sup> It has also been reported previously to mimic other urological disorders. The position of the appendix and its proximity to the genitourinary tract may be the crucial determinants of associated urological symptoms and signs.

Appendicitis presenting as disorders of the upper urinary tract is a relatively rare phenomenon. Obstruction of the right ureter by extrinsic compression from a periappendiceal mass resulting in hydronephrosis is a recognised but uncommon complication of appendicitis and appendicular abscess.<sup>3</sup> In some cases, hydronephrosis may occur even in the absence of direct mechanical obstruction but as a functional response to peritonitis, as a result of decreased ureteric peristalsis.<sup>4</sup> Appendectomy and abscess drainage would result in restoration of function.<sup>5</sup>

For our patient, laparoscopy revealed a perforated appendix with an abscess obstructing the distal right ureter. The patient recovered without any sequelae of persistent ureteric obstruction and the creatinine level normalised.

## References

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