CASE REPORT

Elderly patient with ureteric colic: suspect leaking aneurysm

Yashashwi Sinha

Keele, Stoke-on-Trent, England, UK

Correspondence toYashashwi Sinha,
yashashwisinha@hotmail.com**SUMMARY**

Described below is a case of a 72-year-old man with an abdominal aortic aneurysm (AAA) presenting with symptoms of renal colic. This case illustrates the hazards of making a diagnosis of renal colic in an elderly patient without considering the diagnosis of a leaking AAA. The diagnosis of an AAA can be challenging and renal colic is the single most common misdiagnosis. The patient's initial presentation can be misleading as symptoms fit the features of renal colic or a leaking AAA. Despite normal haemoglobin, microscopic haematuria and a dilated ureter on intravenous urogram (IVU); a leaking AAA should still have been considered. An ultrasound or CT (rather than an IVU) scan would have confirmed the appropriate diagnosis. A high degree of suspicion, early identification and surgical intervention can help reduce the high incidence of mortality in such cases.

BACKGROUND

Abdominal aortic aneurysm (AAAs) are surgical emergencies, early identification and surgical intervention can help reduce the high incidence of mortality. In England and Wales there has been a reduction in incidence of ruptured AAA since 1997 which is attributable largely to changes in smoking prevalence and increases in elective AAA repair in those aged 75 years and over. Mortality from ruptured aneurysm in those aged at least 65 years has fallen from 65.9 to 44.6/100 000 population, however this is still very high.¹

The diagnosis of leaking AAAs can be challenging at times. There have been several studies on this and in a study by Akkersdijk GJ and Van Bockel, the incidence of initial misdiagnosis was found to be as high as 60%.² Although misdiagnosis was less common in the group of patients known to have aneurysms, it still resulted in 30%.²

Renal colic is the single most common misdiagnosis resulting in around 10% of the AAA cases.^{3 4}

The average age of first presentation of renal stones occurs around the age of 42 years and is very uncommon in the age group above 60.⁵

CASE PRESENTATION

A 72-year-old man, presented to A&E at night-time with complaints of acute onset of back and left flank pain radiating to his left groin.

He was on a course of antibiotics recently for a suspected urinary tract infection and was on treatment for benign prostatic hyperplasia. He had no previous similar episodes. No history of ischaemic heart disease, diabetes mellitus or diagnosed hypertension. Upon examination, he had a soft

abdomen with generalised vague abdominal tenderness, a distended abdomen with no palpable masses. He had an enlarged prostate on digital rectal examination. His vital signs were: blood pressure of 159/96 mm Hg, heart rate of 84 bpm, respiratory rate of 14, O₂ saturation of 99% on air and he had no fever.

His drug history consisted of alfuzosin, trimethoprim and paracetamol. He was a non-smoker, non-drinker and was independent with his activities of daily living.

INVESTIGATIONS

Full blood count showed a haemoglobin of 14 and white cell count of 11. Urea and electrolytes were found to be within the normal ranges. His urine analysis was 2+ for blood. No distinct abnormalities were detected upon plain abdominal x-ray except for radio-opacities in the pelvis suggestive of phleboliths or possibly ureteric stones (figure 1).

As the patient came 'out-of-hours' an intravenous urogram (IVU; figure 2) was requested (instead of a CT kidney, ureter and bladder (KUB)) which showed some dilatation of the left-sided ureter.

DIFFERENTIAL DIAGNOSIS

A differential diagnosis was an important clinical factor in the care of this patient. In the background of these findings, a diagnosis of renal colic was decided upon. Important differentials that were not considered at that time:

Figure 1 Patient's abdominal x-ray, showing some opacities in the pelvis.

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Figure 2 Patient's intravenous urogram showing a left-sided dilated ureter.

1. AAA
2. Dual pathology of both renal calculi and AAA
3. Iliac artery aneurysm (ipsilateral side)⁶

OUTCOME AND FOLLOW-UP

The patient was given analgesics; later he did not experience any pain and so was discharged home with analgesia and a urological outpatient follow-up appointment in 2 weeks time.

Seven days later, the patient had an out-of-hospital cardiac arrest. Upon arrival to the A&E department the patient passed away.

Postmortem found a ruptured AAA and stated it as the primary cause of death.

DISCUSSION

1. Elderly patients may have leaking AAAs that mimic symptoms of renal colic on either flank. With regard to why a ruptured AAA can cause renal-colic-like pain, its believed to be owing to irritation of the ureteric pain fibres in the sympathetic plexus by the retroperitoneal haematoma.⁷
2. The patient had an atypical clinical picture for his AAA. Typical AAA ruptures cause the patient's blood pressure to drop. However, in this case where the AAA may have been leaking slowly and causing pain, this lead to the blood pressure being on the higher side.⁸
In this case a classical pulsatile mass was not present. Abdominal examinations have a low sensitivity for AAA on non-specific palpation. Even when specifically looking for an AAA on abdominal palpation, this has low sensitivity; with a positive predictive value of 43% only.⁹ The sensitivity appears to be further reduced by abdominal obesity.
His microscopic haematuria may have been owing to local ureteral irritation and/or trauma because of the proximity of the leaking AAA to the ureter. Aortovesical or aortoureteral fistulas are very rare causes of haematuria associated with AAA.¹⁰ Some studies have shown that the incidence of haematuria in patients with a ruptured AAA was as high as 87%.¹¹
3. There were no signs found on the abdominal x-ray indicating a leaking AAA such as calcification of the aneurysm,

a soft tissue mass, etc if these findings were accurate, the diagnosis of AAA can be correct in up to 90% of the patients.¹²

4. The dilated ureter on IVU could be owing to four things:
 - ▶ Ureteric compression secondary to aneurysm
 - ▶ Peri-aneurysmal fibrosis
 - ▶ Aneurysmal dissection
 - ▶ Incidental obstruction owing to other pathology.

As many as 70% of the patients with AAA may have radiologic evidence of ureteric involvement, however they often get overlooked owing to their lack of specificity. Lateral deviation in either ureter (more commonly on the left-hand side) is a common finding in AAAs.¹³

5. A CT of the KUB is the gold-standard of care and should have been performed in any case rather than an IVU. A CT KUB would have been ideal to investigate the possibility of dual pathology of a leaking AAA and/or a renal stone as the cause of his renal colic. Up to one-third of unenhanced CT examinations performed because of flank pain may reveal unsuspected findings unrelated to stone disease, many of which can help explain the patient's condition.¹⁴
6. Previously in the press there was a lot of discussion about the high-rates of morbidity and mortality with out-of-hours care of patients in the national health service (NHS). Recent improvements in the provision of out-of-hours radiology service have lead to better patient care and management.
7. Current screening guidelines by the NHS invite men for AAA screening during their 65th year. The screening programme started in 2009, meaning that this patient slipped through screening measures and this could have possibly been detected as early aneurysmal changes.¹⁵
8. Raising awareness—infrequent as they may be but many similar cases go unreported. As this is an avoidable problem, awareness should be raised to reduce death rates.

Learning points

- ▶ Leaking abdominal aortic aneurysm (AAA) may mimic symptoms of renal colic.
- ▶ First presentation of renal colic in the elderly is rare.
- ▶ CT kidney, ureter and bladder is the gold-standard investigation for renal colic symptoms and should be performed in such presentations.
- ▶ Maintaining a high level of suspicion for AAA in similar scenarios will avoid unnecessary deaths.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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