Emergency Care Institute
NEW SOUTH WALES

ACI NSW Agency for Clinical Innovation

NO STONES UNTURNED

Learning from our Incidents:

RED FLAGS in the Emergency Department

The case

70yo female was brought into local district ED by ambulance complaining of right-sided flank pain radiating to her back.

Given 5mg morphine by ambulance officers during transit from home.

Past history of COPD, chronic renal failure, diverticulitis.

The case

Patient was given triage category 4.

Observations were:

- *RR 20*
- *SaO2 96% on room air*
- *BP 120/75*
- *HR 72*
- *GCS 15*
- *T36.8C*
- *Pain score 5/10*

The case

Seen by medical officer who found pain localised to right loin. Pain described by the patient as the type of pain she usually experienced during a bout of diverticulitis.

Nil tenderness or signs of peritonism detected.

What are your differential diagnoses?

The case

Patient given provisional diagnosis of diverticulitis with a differential of renal colic.

Patient given morphine and had an XR KUB attended, which showed no abnormality.

MSU collected, which showed nil abnormality.

Admitted to the ward for observation and analgesia.

The case

Overnight, the patient continued to experience significant pain requiring ongoing morphine.

Arrangements were made for the patient to be transferred to a larger referral facility for further assessment, imaging and treatment.

What would your investigation and management plan include?

The case

On arrival at the referral hospital, she was reviewed by ED Consultant with a plan formulated to perform a CXR, CT abdomen, and IV fluids and antibiotics.

The non-contrast CT abdomen showed multiple right renal calculi, uncomplicated diverticulosis and AAA (54mm in diameter).

What would you do now?

The case

Case discussed with consultant surgeon who felt AAA was unlikely to be cause of pain given radiological evidence of renal calculi.

Discharged from referral hospital when pain was well-controlled.

The case

Patient underwent cystoscopy/lithotripsy 10 days after presentation to ED. Apart from mild hypotension, patient encountered nil significant post-operative issues.

She was discharged home the following day having been found to be well, have a moderate amount of blood in her urine, normal BP and pain well-controlled.

The case

Later on the day of discharge, patient presented to ED of her local hospital by ambulance with right-sided pain. Observations attended:

- *RR 18*
- *SaO2 94% on room air*
- *BP 178/90*
- *HR 94*
- *T36.8C.*

The case

Patient was prescribed panadeine forte and given aperients and discharged from the ED within 30mins.

Do you agree with the decision to discharge the patient home?

The case

Two days later, the patient re-presented with increasing pain on the right side and associated nausea.

On-call medical officer reviewed the patient and thought the pain to be related to having had a stent inserted and removed.

She was prescribed multiple analgesic and anti-emetic medications and follow-up with her urologist arranged.

She was discharged home.

Do you agree with the decision to discharge the patient home?

The case

On post-op day 5, patient again presented to ED with LEFT flank pain. She was assessed by a medical officer who felt her left upper quadrant pain to be due to either a renal stone or diverticulitis.

Plan was to discharge the patient home, arrange GP follow-up and commence oral antibiotics and alternative analgesic regime.

Do you agree with the decision to discharge the patient home?

The case

Approximately two hours after discharge, patient returned to hospital having died in a chair in her living room at home.

Cause of death: **ruptured AAA.**

What is the lesson here?

Any patient over 50 years of age with suspected renal colic should have the diagnosis of ruptured AAA explicitly sought and excluded

What's the evidence?

- **Ruptured abdominal aortic aneurysm has been found to be the most common finding of the unexpected related deaths after discharge from the emergency department.**[1]

- In a retrospective review of patients with ruptured AAA, 30% incidence of misdiagnosis was found, suggesting it is frequently a difficult diagnosis to make. The most common misdiagnosis is renal colic[2].

BEWARE CONCURRENT DIAGNOSES!

Images in emergency medicine

Concurrent ruptured abdominal aortic aneurysm and renal calculus: a case study

The incidence of misdiagnosis in ruptured abdominal aortic aneurysm (AAA) can be as high as 30%, and the most common error in diagnosis is renal colic.[1] We present a case of a patient who had both a ruptured AAA and a renal calculus.

A 65-year-old man presented to the emergency department complaining of pain in his right testicle and lower abdomen. His medical history included previous myocardial infarctions and strokes, and he was on warfarin for a mural thrombus.

Examination revealed a soft abdomen with no pulsatile swelling. There was right-sided tenderness with some guarding. Urinalysis was positive for blood.

A CT abdomen was arranged, which revealed a leaking aortic aneurysm and a left-sided renal calculus (figure 1). He subsequently underwent urgent repair of his AAA.

We would remind doctors that a ruptured aortic aneurysm can easily be mistaken for renal colic. However, some patients may well have both pathologies.

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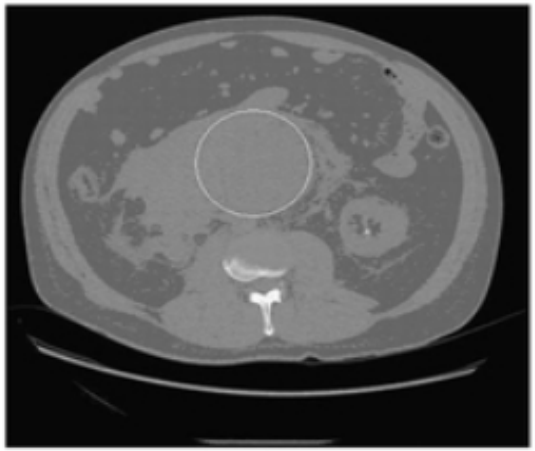

Figure 1 Abdominal CT scan showing ruptured abdominal aortic aneurysm (circled) and left renal calculus.

Patient consent Obtained.

Provenance and peer review Not commissioned; not externally peer reviewed.

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What's the evidence?

- Most patients with rupture have no previous diagnosis of AAA.[4] The traditional description of acute pain in the back, flank, or abdomen, hypotension, and a palpable abdominal mass is unusual, with perhaps fewer than 25% presenting with this triad.[2]

- Missed diagnosis can occur in 30% to 60% of cases, primarily because the physical examination is frequently unreliable[2,5] .

- Also, the presence of haematuria is not exclusively found in patients with renal calculi: in one study, more than 87% of patients with an AAA also had haematuria[6].

What's the evidence?

- **Many patients with ruptured AAA are misdiagnosed with nephrolithiasis**, because these patients may have haematuria, have no palpable pulsatile mass, and have flank pain[2,6].

- Other common misdiagnoses of ruptured AAA include diverticulitis, gastrointestinal haemorrhage, acute myocardial infarction, and musculoskeletal back pain[2].

Access the ECI Clinical Tools:

AAA

http://www.ecinsw.com.au/node/433

Acute Low Back Pain

http://www.ecinsw.com.au/acute-low-back-pain

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Another case

68yo female was brought in by ambulance to ED of a metropolitan hospital. She walked independently into ED.

Patient informed triage staff that she had sudden onset lower back pain radiating to both legs and lower abdomen. Pain had commenced the previous evening with one associated episode of vomiting. Pain reported to be moderate in severity at time of presentation.

Another case

Observations:

- *T36.8C*
- *HR 94, regular*
- *RR 18/min*
- *BP 176/120*
- *SaO2 97% on room air*

Assigned triage category 3.

Another case

90 mins after presentation, patient received analgesia and had both an ECG and urinalysis performed, neither which detected any abnormalities.

Medical assessment noted onset of back pain when patient was shopping. The pain gradually worsened, with shooting pain radiating to her buttocks and lower legs. She reported that she had twisted her back two weeks prior, and since then had been having intermittent back pain.

Another case

On day of presentation, patient woke with increased pain and pressure in her pelvic region.

On examination, abdomen was soft and non-tender, nil focal neurological sings, non-tender spine. Para-spinal muscular tenderness was noted.

Provisional diagnosis was likely muscular back pain with possible disc related issues.

Another case

Repeat observations saw improvement in patient's BP, and all other vital signs being between acceptable parameters.

She was discharged home 2.5 hours after presentation with follow-up advised with her GP. She was given a prescription for analgesia and referral for an outpatient MRI scan.

Another case

30mins after discharge, patient returned to ED in cardiac arrest. CPR was commenced in the car by the family after patient became unresponsive.

Resuscitation continued in ED with intubation, CPR and intravenous adrenaline but the patient was pronounced deceased after a further 20mins.

Another case

Case referred to the Coroner.

Post-mortem identified that the cause of death: **ruptured infra-renal aortic abdominal aneurysm.**

Any patient over 50 years of age with suspected renal colic should have the diagnosis of ruptured AAA explicitly sought and excluded

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