# Emergency Medicine Journal (BMJ): Image Challenge

Authors are encouraged to submit images for our Image Challenge. Once a number of Image submissions have been received they will be subject to a single internal review to be selected for publication. Images that are selected will be assigned to an issue for publication in print. Images should be educational, not sensational. Our preference is for images that can be obtained on physical exam or with basic investigations, providing clues to the diagnosis, or indicating the need for advanced imaging. The decision to publish the image will depend on several factors including:

1. the importance and relevance of the entity to emergency medicine 2. the educational value of the image 3. the quality of the write-up, including important take-home teaching points
All images must be accompanied by a signed patient consent. **Format: Title:** Since the aim of these articles is to stimulate the reader to think about the case, the title should be ambiguous and not give away the final diagnosis immediately.**Number of authors:** 3 maximum **Word count:** up to 300 words **References:** up to 3
Each image challenge will be presented in two parts:

- The first part should contain a very brief (maximum 100 words) clinical introduction to the case, followed by the image and a question designed to stimulate the reader to think about what the image shows. There should be four potential answers listed in multiple-choice format with only one correct answer. The legend for the image should not indicate the diagnosis, but should simply describe the nature of the image e.g. “initial ECG.”
- The second part (maximum 200 words) will appear separately from the case and should contain the Answer. The Answer should include a brief description of the key diagnostic features of the image, the outcome, and a teaching point. The Answer should explain why one answer is correct and the others are not. If the image is an ecg, x-ray or ultrasound, please provide a second image, identical to the first, with annotations, such as arrows. If pointing out the important finding, you may also provide a second image to enhance the explanation, e.g. an x-ray result of a physical finding.

The quality of the image must be at least 300dpi and in .tif, .jpeg, .gif or .eps format. Videos for online presentation are also welcomed and should be in .mov, .avi, or .mpeg format. Please note that decisions for Image challenge submissions may take longer than other article types. For quality purposes, we need to accumulate a range of submissions before progressing.

IMAGE CHALLENGE

# Sudden-onset flank pain

## CLINICAL INTRODUCTION

A 36-year-old woman presented to the ED with sudden-onset right flank and iliac fossa pain that began 3 hours prior to arrival, associated with vomiting and diarrhoea. She denied dysuria or fever. Her observations were within normal range. Examination of her abdomen revealed right flank tenderness (figure 1). A point-of-care ultrasound was obtained.

## QUESTION

What is the likely diagnosis?

A. Ruptured ectopic pregnancy.
B. Renal haematoma.
C. Ruptured ureteral calyx.
D. Ruptured appendix.

*For answer see page 620*

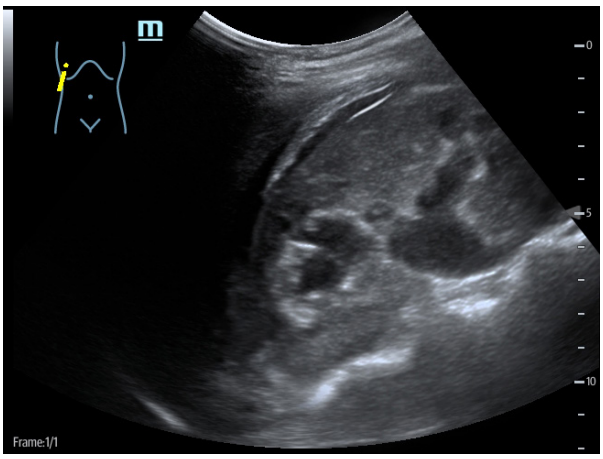


**Figure 1** Right upper quadrant view showing the right kidney and Morrison's pouch.

# Sudden-onset flank pain

*For question see page 605*

**ANSWER: C**

The ultrasound shows moderate hydronephrosis with right upper quadrant free fluid (figure 2). This is suspicious of ureteric obstruction with calyceal rupture, likely secondary to a ureteric calculus. An additional view of the kidney demonstrates loss of corticomedullary differentiation, a sign of superadded infection (online supplemental figure).

Rarely, obstructing ureteric calculi cause rapid increases of ureteric pressure leading to rupture at the renal calyx.[1] This forms a urinoma, with a high risk of progression to a perinephric abscess. Typically, this is treated with antibiotics and deobstruction with a ureteric stent or nephrostomy.[2]

In this case, ultrasound identified the pathology rapidly and intravenous antibiotics were commenced. A non-contrast CT showed an 8 mm obstructing calculus, perinephric stranding and free fluid. The patient was transferred urgently to a urological centre. Emergency ureteric stent drained frank pus from her ureter and kidney. The patient remained well and was discharged 3 days later.

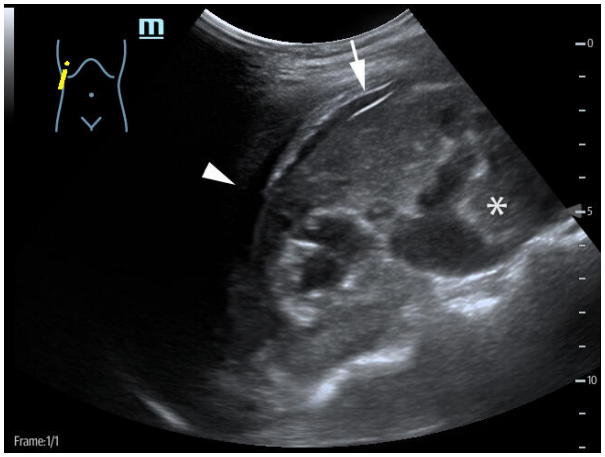


**Figure 2** Right upper quadrant view showing moderate hydronephrosis (asterisk), anechoic free fluid in Morrison's pouch (arrowhead) and a urinoma appearing as perinephric free fluid (arrow).

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