CASE REPORT

A Rare Case Of Sigmoid Colon Perforation With Subsequent Psoas Abscess Collection With Extensive Involvement Of The Sartorius Muscle

Ali Wadood, Abdulrahman Odeh, Khizer Rana, Shafquat Zaman

Radiology, Sandwell and West Birmingham Hospitals NHS Trust, Birmingham, UK

Correspondence to
Dr Ali Wadood,
ali.wadood@nhs.net

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SUMMARY

A middle-aged man was admitted with worsening hip pain, fevers and reduced mobility. These symptoms were preceded by a mechanical fall but despite regular analgesia, symptoms did not resolve. His prior medical history included ischaemic heart disease, hypertension and hypercholesterolaemia. A trauma and orthopaedic review revealed a painful left hip with reduced range of motion. In addition, some mild tenderness in the left iliac fossa was noted. Blood tests revealed markedly raised inflammatory markers. Plain radiographs and ultrasound were normal. MRI scan found a massive left iliopsoas collection secondary to perforated diverticular disease of the sigmoid colon. The patient was managed with intravenous antibiotics and the collection was drained percutaneously. Approximately 500 mL of pus was aspirated. The patient made an excellent recovery with interval imaging showing a reduction in the collection size.

BACKGROUND

This case highlights an unusual complication of diverticular disease. The patient presented with a combination of hip and back pain as well as reduced mobility. Given his history of a preceding fall, the patient was admitted under the trauma and orthopaedic team for possible septic arthritis. The list of differentials was broad; however, the case highlights the need to always take a comprehensive history and examine the patient fully.

CASE PRESENTATION

A 58-year-old Caucasian man was admitted with a 2-week history of left hip and lower back pain, following an earlier fall. Prior to this, he mobilised independently. The patient visited his general practitioner a week following the fall and was prescribed analgesia, which did not relieve his symptoms. Due to ongoing severe pain, fevers and rigours, the patient was admitted to hospital.

His prior medical history included hypertension, hypercholesterolaemia and angina. Regular medications included aspirin, amlodipine, atenolol, atorvastatin and lisinopril. He was a current smoker and reported minimal alcohol consumption.

Following assessment by the trauma and orthopaedic team, power was noted to be 3/5 on hip flexion on the left side with pain limiting assessment

of abduction, adduction and flexion. Right lower limb examination was unremarkable. Both internal and external rotations, passively and actively, were limited in the left hip. Abdominal examination revealed a soft abdomen with tenderness in the left iliac fossa.

Blood tests on admission revealed: haemoglobin 144 g/L, platelet count $459 \times 10^9/L$, white cell count $18.5 \times 10^9/L$, neutrophil count $15.43 \times 10^9/L$ and C-reactive protein 268 mg/L.

INVESTIGATIONS

X-rays of the spine and pelvis showed no evidence of fractures. Ultrasound scan (USS) of the left hip was performed to look for evidence of septic arthritis. This revealed no hip joint effusion or evidence of bursitis and no intramuscular or intermuscular abnormality.

Due to ongoing clinical concern, an MRI of the left hip was performed. This found an $18 \times 8 \times 6$ cm gas containing left iliopsoas collection consistent with an abscess (figures 1A,B and 2A,B). The collection was found to communicate with a small pocket of fluid extending up to abnormally thickened sigmoid loop (figure 1A,B). More inferiorly, the iliopsoas collection and inflammatory changes extended to the left upper thigh, with a communicating gas containing collection within the left proximal sartorius and extensive surrounding inflammatory changes extending to the mid-thigh (figure 3A,B). The appearance on the scan was felt to be due to perforated sigmoid diverticulitis with a secondary psoas abscess with further extension to involve the sartorius muscle. Further assessment with CT was advised.

CT abdomen and pelvis confirmed a large retroperitoneal collection related to the lower left psoas muscle and extending into the left thigh.

DIFFERENTIAL DIAGNOSIS

- ▶ Septic arthritis of the hip
- ▶ Psoas abscess
- ▶ Discitis
- ▶ Osteomyelitis

TREATMENT

Given the results of the MRI and CT scan, the general surgical team were consulted and consequently a USS-guided drainage of the psoas collection was advised. Using an 8 French Flexima

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Figure 1 MRI of the pelvis, axial proton density fat sat and T1 images through the pelvis, demonstrating a massive 18×8×6 cm gas containing iliopsoas collection consistent with an abscess.

catheter, 500 mL of pus was drained initially followed by haemorrhagic fluid. A drain was left in situ.

Pus was sent for microscopy, culture and sensitivity. Culture revealed a growth of coliforms (sensitive to clindamycin), *Streptococcus constellatus* (sensitive to penicillin) and *Candida dubliniensis* (sensitive to vancomycin). Gram stain revealed occasional leucocytes with negative bacilli. Tuberculosis investigations including cultures were negative. Following discussion with microbiology, the patient was commenced on 1.2 g intravenous co-amoxiclav and 500 mg intravenous metronidazole. He was discharged home with the abdominal drain in situ after completing a 10-day course of antibiotics.

OUTCOME AND FOLLOW-UP

Following drainage of the psoas collection, a repeat CT revealed a marked decrease in the size of the collection.

Patients presenting acutely with CT confirmed diverticulitis are routinely followed up with a flexible sigmoidoscopy (approximately 6 weeks following discharge) to exclude other bowel pathology such as colorectal cancer. In this case, as there was no anaemia and no red flag symptoms, a full colonoscopy was deemed inappropriate. The patient was advised to seek medical attention should he become unwell.

He was followed up after 2 months in a colorectal clinic, and denied any constitutional symptoms and reported normal bowel motions. A flexible sigmoidoscopy, performed as an outpatient,

revealed features of diverticular disease only. A decision was taken to remove the intra-abdominal drain in clinic after no output was recorded in the preceding 2 weeks despite regular flushes. Given that this was his first episode of a diverticular complication, the possibility of a sigmoid colectomy was explored. Following this discussion, surgical intervention has been reserved should the patient develop recurrence of his symptoms or other complications of diverticular disease such as diverticulitis, bowel perforation and abscess formation.

DISCUSSION

Diverticular disease is common, affecting a significant proportion of the population in the developed world.¹ The pathogenesis of diverticular disease is thought to be likely multifactorial, often associated with abnormalities of the colonic wall structure, low intake of dietary fibre and disordered intestinal motility.² The majority of patients with diverticular disease remain asymptomatic during their lifetime unless complications occur. These include fistula formation, perforation, abscess, stricture, acute diverticulitis and bleeding, with the latter two being the most common manifestations.³

In this case, the patient developed a psoas abscess with extensive involvement of the sartorius muscle. A thigh abscess is an uncommon presentation and usually originates from surrounding structures. Important differentials to consider include haematoma, osteomyelitis, pyomyositis,

Figure 2 MRI of the pelvis, coronal proton density fat sat and T1 images through the pelvis, demonstrating a massive 18×8×6 cm gas containing iliopsoas collection consistent with an abscess.

Figure 3 MRI at level of pubic symphysis, axial proton density fat sat and T1 images demonstrating gas containing iliopsoas collection and inflammatory changes extending to the left upper thigh.

thrombophlebitis and localised cellulitis.⁴ There are several consequences to abscess formation; they may resolve, spread into the peritoneal cavity, surrounding organs, or may lead to formation of fistulae.⁵

Although rare, a thigh abscess is usually easy to diagnose but identifying the cause can sometimes be unclear. This is complicated further in younger patients. In this case, the patient did present with abdominal signs but it is imperative to always have a high index of suspicion of a primary abdominal pathology. This is especially important when an elderly patient presents with a thigh abscess. If the primary cause is unclear, there should be a low threshold for involving relevant specialties and performing further imaging.

Learning points

- Importance of a good examination which includes a systems review.
- Use of ultrasound in appropriate cases. A relatively simple and cheap investigation to exclude possible differentials when a diagnosis is unclear.
- Importance of managing a patient in conjunction with other appropriate specialties, for example, general surgery and interventional radiology.
- Use of imaging, for example, MRI and CT, to ascertain cause of a thigh abscess.
- In cases where patients present to primary care with non-resolving symptoms and especially when they become febrile, early referral to hospital is warranted for further investigations.

Contributors All authors have contributed to the production of this manuscript. KR is consultant radiologist who initially identified the case for write-up. KR was involved from the beginning of the case as he was involved in reporting the initial MRI scan that was performed on the patient. Through the case, KR was involved in modifying the content of the text and in assisting to look through the literature and interpreting images and linking the case figures to the necessary parts of the text. SZ was a member of the surgical team involved in managing the patient while in hospital. SZ's role in the case involved ensuring that the history and examination findings of the case were accurate as he was closely involved in the patient's care, while also contributing to the text by producing the summary section of the paper and modifying content of the main bulk of the text. Both AW and AO were involved in planning the production of the manuscript in conjunction with SZ and the consultant KR in a series of meetings. AO and AW gathered information from the patient's case notes and the hospital information systems and used this information to produce a draft manuscript which was then subsequently modified in conjunction with senior colleagues KR and SZ. Literature review was performed by AO in conjunction with KR, while AW was involved in ensuring that references were produced from the literature review and the format of the text was in line with BMJ case reports submission policy.

Competing interests None declared.

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