

Case Report

A Case Report of Appendicitis Masquerading as Septic Arthritis

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Abstract...

While appendicitis is usually a straightforward diagnosis, it may be challenging in elderly patients with learning disabilities. Failure to recognize atypical symptoms such as right hip pain and reduced mobility in vulnerable patients may lead to a delayed diagnosis and significant morbidity. This case highlights an unusual presentation of appendicitis in a patient with intellectual disability. It reflects the difficulties encountered in interpreting the presenting symptoms of this subset of vulnerable patients and highlights the importance of early imaging. A high index of suspicion and generous use of imaging will permit earlier recognition and prompt management of such pathology.

Key words: Appendicitis; Hip pain; Delayed diagnosis; Learning disability; Vulnerable patient.

Introduction

There are 1.5 million people with an intellectual disability in the UK [8]. The Confidential Inquiry into premature deaths of people with a learning disability also found that 38% of people with an intellectual disability died from an avoidable cause, compared to 9% in a comparison population of people without a learning disability [9]. Failure to recognize that a person with learning disability is unwell or a lack of reasonable adjustments for this vulnerable group of patients, can be a barrier to early diagnosis and prompt management of a condition. Here we report a case of complicated appendicitis in an elderly lady with learning disability. We highlight the importance of having a high index of suspicion that right hip pain and reduced mobility may be an atypical presentation of appendicitis, especially in patients with learning disability. Special care and considerations must be in place for patients with a learning disability.

Case presentation

An elderly lady with a background of learning disability was brought to Emergency Department by her 24-hours carer with a week's history of right hip pain, limping and reduced mobility. Other than vitamin D deficiency, she had no additional co-morbidities. Her carers reported that the patient seemed to have a loss of appetite and was increasingly confused. There was no known history of trauma. On examination, she was tachycardic with a low-grade temperature of 37.9°C. On hip flexion, there was a pain in the anterior aspect of her right hip. Although the patient was reluctant to move her legs, there was no apparent weakness, swelling or sensory loss in bilateral lower limbs.

She was admitted to the orthopaedic department. Her initial bloods on admission showed a White Cell Count (WCC) of 8.3 x 10⁹/L, normal urea and electrolytes, and a C - reactive protein

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(CRP) of 146. Urinalysis was negative. X-ray of right hip and knee showed no fracture. She then underwent aspiration of her right hip to rule out any septic arthritis. There was minimal fluid aspirated from her right hip and the culture was negative. Blood cultures taken on admission were also negative.

On the ward, the patient was mobilizing with the help of physiotherapists, as mobility was restricted due to pain. On subsequent days, her inflammatory markers continued to increase, WCC and CRP increased up to $10.2 \times 10^9/L$ and 211 mg/L, respectively. Given the presence of rising inflammatory markers, persistently spiking temperatures and the only focal symptom of right hip pain, an MRI pelvis was performed. This showed an approximately 13 cm long and 3 cm wide fluid collection arising from the right iliacus muscle and tracking down into the anterior aspect of the right thigh, lying deep to the right Sartorius muscle. There was a large locule of gas within the fluid collection, likely related to the recent aspiration attempt. The collection was separate to the right hip joint and separate to the right iliopsoas tendon, with no evidence of osteomyelitis.

Given the presence of collection, an ultrasound scan (USS) guided drainage of the collection was attempted. However, only a small amount of fluid surrounding the proximal right femur was demonstrated with USS. The scan was suboptimal due to the patient's non-compliance. Hence, no aspiration was attempted.

Further discussion with the general surgical team on day 7 post-admission, suggested that the iliacus collection could be due to either a fistula, bowel perforation or diverticulitis. In order to further delineate the cause of collection, a Computed Tomography (CT) scan of the abdomen and pelvis with contrast was performed. It revealed that the collection was in continuity with the right iliac fossa and possibly the base of the caecum (Figure 1). It was highly suspicious of an episode of acute appendicitis which had fistulated posteriorly, feeding the collection.

Therefore, the patient was started on intravenous cefuroxime and metronidazole as per the local trust guideline. Following resuscitation, she was taken to the emergency theatre for a laparoscopic appendicectomy and incision and drainage of her right groin and right flank collection. Intraoperatively, it was found that her appendix was disintegrated with pus and perforation into the lateral abdominal wall. Her pelvis was unremarkable. Two incisions were made at both her right groin, lateral to the femoral vessels as well as at her right flank under direct vision from the abdomen. The two incisions were connected subcutaneously, and a corrugated drain was inserted to facilitate the further drainage of potential residual collection. A standard approach to a laparoscopic appendicectomy was performed using polydioxanone (PDS) Endoloops to the appendix base, which was still intact. A Robinson's drain was left in situ in the right paracolic gutter. Histopathology revealed an appendix measuring 23mm in length and 7mm in maximum diameter. The appendix showed acute-on-chronic inflammation.

Postoperatively, her recovery was uneventful. She completed a course of antibiotics and continued input from the physiotherapy team. She was later discharged with no follow-up planned.



Figure 1: A: Preoperative CT scan of abdomen and pelvis with contrast demonstrating the pelvic collection (arrows) in continuity with the right iliac fossa and base of caecum.

Discussion

This case report demonstrates the development of complications of acute appendicitis due to a delayed presentation and diagnosis of the disease. Investigations of the complication i.e., the collection of fluid tracking down the anterior thigh, eventually led to a diagnosis of appendicitis in a retrograde manner.

In patients with intellectual disability, it may be challenging to identify the signs and symptoms of organ pathology, as they often have difficulty in expressing any underlying issues and may be considered as non-specific. While it has been well-recognized in pre-school-aged children that hip pain, reduced walking or limping are the atypical presentation of acute appendicitis, they are often neglected in the adult setting [2,6,7]. Because of its atypical presentation, it poses a risk of delay in diagnosis, which may result in significant morbidity or even mortality.

In adult patients with learning disability, it is important to consider atypical presentations of acute complicated appendicitis, similar to the pre-school-age group [2]. The pathophysiology of appendicitis may differ in children due to the variable anatomical location of the appendix. A retrocaecal appendix may not show signs of peritoneal inflammation, whereas a pelvic appendix may cause tenderness below the McBurney point [1]. Inability to walk or walk with a limp has been reported to be a significant finding in patients with appendicitis [6]. Sakellaris et al. also reported that up to one-fourth of patients with appendicitis had a limp and/ or right hip stiffness [7]. Yet, in elderly patients who presented initially with hip pain in isolation, appendicitis may not necessarily be included in the initial differential diagnosis as it was not widely recognized.

Although rare, there was a case report which illustrated the development of septic arthritis of the hip as a complication of perforated appendicitis managed conservatively [3]. The presence of bacteraemia due to perforated appendicitis led to the development of distal bacterial seeding and invasion of the sy-

novial membrane, resulting in right hip abscess. A similar pathophysiology is seen in this case. Due to the delayed diagnosis of appendicitis, a fluid collection developed at the anterior aspect of the right thigh, secondary to bacterial seeding.

The background of learning disability in this patient is likely to have been a significant factor in delaying a timely diagnosis and management of the disease. There have been a number of research studies and reports that consistently highlight the substandard healthcare provision for the population with intellectual disability and the issues in care giving for older people with intellectual disabilities [10,11]. Various obstacles such as failure to recognize that he or she is unwell, failure to make a correct diagnosis, lack of joint working from different care providers or staff having a limited understanding of learning disability have precluded the early diagnosis of appendicitis. Similar to children under 5 years of age, the non-specific clinical presentation, as well as difficult communication, inadequate physical examination and overlap of symptoms with other common illnesses, contributes to the delayed diagnosis of acute appendicitis and higher incidence of perforation and subsequent complications [12]. Hence, as healthcare professionals, we have a legal duty to provide reasonable adjustments for disabled people [13]. In 2013, Tuffrey-Wijne et al. identified several enablers of providing reasonably adjusted healthcare services to people with intellectual disabilities in acute settings. These include an effective system for identifying and flagging patients with intellectual disabilities from the front door in Emergency Department, as well as sufficient training on the management of intellectual disability in clinicians' training programmes [10]. For instance, in this case, the radiographer was informed of the patient's learning disability; therefore, a longer time slot was organized to cater for the patient. Currently, there is a dearth of curriculum requirements for medical schools specifically to teach competency in the provision of care to persons with intellectual disabilities. Unsurprisingly, many physicians or surgeons are ill-prepared to recognize symptoms or appropriately examine patients who have physical limitations, communication difficulties or behavioural issues that coexist in persons with intellectual disability [15]. A 2005 Surgeon general report emphasized fostering changes in attitude by health care professionals toward patients with disabilities, especially with regard to upholding their value and dignity [14].

While acute appendicitis is usually a straightforward diagnosis, it may be challenging in patients with learning disabilities who present with reduced walking or right hip pain. Diagnosis in this vulnerable group of patients requires a high index of suspicion and a low threshold for the appropriate use of imaging. We advocate the generous use of CT and MRI scanning with similar presentations in this subgroup of patients. The knowledge of providing reasonable adjusted healthcare services for patients with intellectual disabilities is also essential for patients' outcomes.

Declarations

Conflict of interest: The authors declare that they have no conflicts of interest.

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