

Backache with Fever: A Unique Presentation of Advanced HIV Infection

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Abstract

This case report follows a previously asymptomatic man who presented with common, non-specific symptoms and was diagnosed with a rare complication of non-typhi Salmonella infection. Further investigations revealed the presence of advanced HIV infection and with subsequent follow up a number of co-existing pathologies were diagnosed with fatal consequences. This case serves as an example of the complexity of patients diagnosed with late HIV disease. It serves as a clear reminder to all clinicians to have a low threshold for testing for HIV and highlights the need to introduce an opt-out system for HIV testing in all acute healthcare settings with a high prevalence of HIV infection.

Keywords: Iliopsoas abscess; Salmonella enteritidis; Osteomyelitis; Lumbalgia; Diffuse large B-cell non-Hodgkin's lymphoma

Report

A 48 year old man originally from South America presented to the Emergency Department with a two week history of acute lower lumbar back pain, fever and night sweats. With the exception of a recent diagnosis of psoriasis affecting his hands, he was previously healthy, did not smoke or consume alcohol, denied using recreational drugs and had not travelled overseas in the last 5 years. He denied any history of gastrointestinal symptoms including diarrhoea.

On examination he was in pain, temperature 39.4°C, heart rate 100 bpm, blood pressure 126/80 mmHg, respiratory rate 16/min and oxygen saturation 100 % on air. He was tender to palpation from L2 to L5 with no erythema, rash or deformity. Active straight leg raise on the left was reduced (50 degrees versus 90 degrees on the right). Power was 5/5 in all other lower limb muscle groups and sensation was intact. Physical examination was otherwise unremarkable.

The patient had a normal total white cell count, urea and electrolytes, liver function tests and bone profile, however a modestly low lymphocyte count 0.7 was noted (normal 1.0 - 4.0 x 10⁹ / L). C-reactive protein (CRP) was raised (127 mg/L), as was lactate dehydrogenase (3249 U/L with normal 240 – 480) but creatinine kinase was in the normal range.

Blood, urine and sputum cultures did not grow any organisms (for more than 7 days). Chest radiograph was normal and plain anterior and lateral lumbar spine views revealed mild L2 and L3 disc narrowing. An MRI of the spine revealed degenerative disease with no paraspinous collection.

He continued to spike temperatures (>39 °C) and CRP rose further to 261 mg/l. In view of his persistent fever an abdominal CT scan was performed which revealed a 15 x 14 millimetre collection in the left iliopsoas muscle (Figure 1a). The MRI of the spine had not included the area of the muscle affected by the abscess. A CT guided percutaneous drainage of the abscess grew *Salmonella enteritidis* and following empirical therapy with ciprofloxacin and flucloxacillin he was continued on the quinolone alone, given the sensitivity of the organism to ciprofloxacin. All microbiological specimens were negative for acid fast bacilli and six week *Mycobacterium* culture.

In view of his low lymphocyte count an HIV test was performed. He was HIV-1 antibody positive with a HIV viral load of 98 492 copies/ml (log 4.99) and a CD4 count of 32 cells/μL (3.67%). A screen for other sexually transmitted infections was undertaken revealing genital herpes (HSV-2) and *T. Pallidum* RPR titre was 8. Screening for *N. gonorrhoea* and *C. trachomatis* was negative and he was immune to hepatitis A with negative serology for hepatitis B and C infection. The patient was commenced on *Pneumocystis jirovecii* prophylaxis.



Figure 1: a) Transverse section abdominal CT showing left iliopsoas abscess (white arrow) four days after presentation described in the main text. There was no bowel wall thickening or anatomical abnormality apparent in this scan. b) Delayed image ^{99m}Technetium bone scan anterior view two weeks after commencing intravenous antibiotics. There is increased isotope uptake in both iliac bones, proximal right humerus and both femurs. These changes are consistent with osteomyelitis.

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received treatment for syphilis and was commenced on highly active anti-retroviral therapy (HAART) three weeks post HIV diagnosis.

An MRI performed three weeks following presentation revealed diffuse osteomyelitis involving the pelvis and femur (Figure 1b). This patient received two further percutaneous drain insertions and six weeks after initial presentation he had remained afebrile and his CRP had reduced to 48 mg/L and he was deemed well enough to be discharged on ciprofloxacin and HAART.

Two weeks following discharge the patient was seen in an emergency follow-up clinic with abdominal pain and was found to have abdominal radiograph findings consistent with small bowel obstruction for which he was admitted and initially managed conservatively. CT-positron emission tomography showed a thickened bowel wall with increased metabolic turn-over and a colonic biopsy confirmed diffuse large B-cell non-Hodgkin's lymphoma, an AIDS defining illness. He was immediately commenced on an R-CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine and prednisolone) chemotherapy regimen but unfortunately developed severe sepsis during the first cycle of therapy. The most likely source of sepsis was the chest based on radiographic findings but repeated blood, sputum and urine culture were all negative. Despite broad spectrum antibiotic coverage, the patient's condition deteriorated and he died from overwhelming sepsis four weeks into chemotherapy.

Primary iliopsoas abscesses occur as a result of haematogenous spread of bacteria and are more frequent in established immunodeficiency states such as diabetes mellitus, renal failure, AIDS and with intravenous drug use [1]. *Staphylococcus aureus* is the most common causative organism associated with over 88 % of cases [1]. Iliacus abscesses, in contrast to the more frequently reported psoas abscesses, can present with varied clinical features and have a significantly higher rate of bone and joint complications due, in part, to the proximity of the iliacus muscle to the sacro-iliac joint [1,2]. Secondary iliopsoas abscess are associated with gastrointestinal pathologies (Crohn's disease and colorectal malignancies) and urinary tract infections or malignancies [1,2]. Non-typhoidal *Salmonella* infections commonly arise following ingestion of contaminated food. The usual symptoms are those of gastroenteritis but other rare presentations include pneumonia and infections of large muscles or joints, which include the formation of an iliopsoas abscess [3,4]. Patients with a *Salmonella* abscess resulting from a bacteraemia do not always have symptoms of gastroenteritis, especially if they are immunocompromised. Diagnosis of the abscess requires appropriate imaging (Computed tomography is the gold standard) as well as identification and antibiotic sensitivity determination of the causative

organism through percutaneous drainage. Treatment consists of appropriate antibiotic cover with or without a drain remaining *in situ* to drain the abscess.

Our case is the first report of a patient presenting with a *Salmonella enteritidis* iliacus abscess and found to have advanced HIV disease. The rate of progression from early non-specific symptoms is undoubtedly striking and this presentation is even more unique given the co-existence of bowel malignancy. It is tempting to speculate that the original *Salmonella* bacteraemia may have originated from the lymphoma in the bowel which developed as a result of severe immunodeficiency from HIV infection, but this may never be proven. This case highlights the unique presentation and sequelae of an iliacus abscess and also acts as a reminder to all physicians to have a low threshold for requesting a HIV test, or even adopt an opt-out approach to HIV testing in all adults in the acute setting as is recommended in international guidelines, especially in areas of high prevalence (more than 2 HIV infected individuals per 1000 population) [5,6]. Such an approach could enable an earlier diagnosis and implementation of HAART which would reduce morbidity and mortality in HIV positive patients.

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