Low back pain: would it be psoas abscess?

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Psoas abscess is an uncommon clinical entity. It can be a primary infection with no obvious source of infection or a secondary infection from other sites, e.g. gastrointestinal tract or spinal pathology. The triads of presentation: fever, loin pain and limitation of hip movement may not be found in all patients. The correct diagnosis can be made with a vigilant clinical examination and appropriate investigation, for example ultrasonography. We present two cases of psoas abscess. One was a primary case and the other was secondary to carcinoma of caecum. Both of them presented with recent onset of back pain. Emergency physicians consider psoas abscess as one of the differential diagnosis for patient complaining of low back pain. (*Hong Kong j.emerg.med.* 2002;9:213-216)

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Introduction

Psoas abscess is an uncommon disease and the diagnosis is frequently arrived late. McAuliffe et al reported 25 cases in 12 years.[1] Cases of delay diagnosis are not infrequently noted.[2] Most of the early cases are easily mis-diagnosed as musculoskeletal problem. The classical presentation may not be present in every patient. As an emergency physician, one should be aware of its atypical physical signs and appropriate investigation should be arranged in order to diagnose this condition early.

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Case history 1

A 39-year-old man presented to our emergency department with complaint of persistent low back pain for one month after a trivial sprain. There was no associated neurological deficit. There was also no urinary or bowel symptoms. The pain progressively increased in severity and affected his sleep recently. He could hardly walk on presentation.

He was triaged as semi-urgent (Category 4). His blood pressure was 127/79 mmHg and pulse rate was 125/min. Temperature was 37.7°C. Physical examination showed he was distressed by the pain and it was relieved by leaning forward. Tenderness was noted at right loin but no loin mass was found. Femoral stretch exaggerated the pain. X-ray (KUB and lumbo-sacral spine) showed no bony lesion, the lumbar spine was concave to right. The right psoas shadow was blurred and the bowel shadow was absent in right lower quadrant. (Figure 1) Urine strip test showed trace RBC, no WBC trace protein and 4+ for sugar. Hemoglucostix was 14.0 mmol/L. Bedside ultrasound

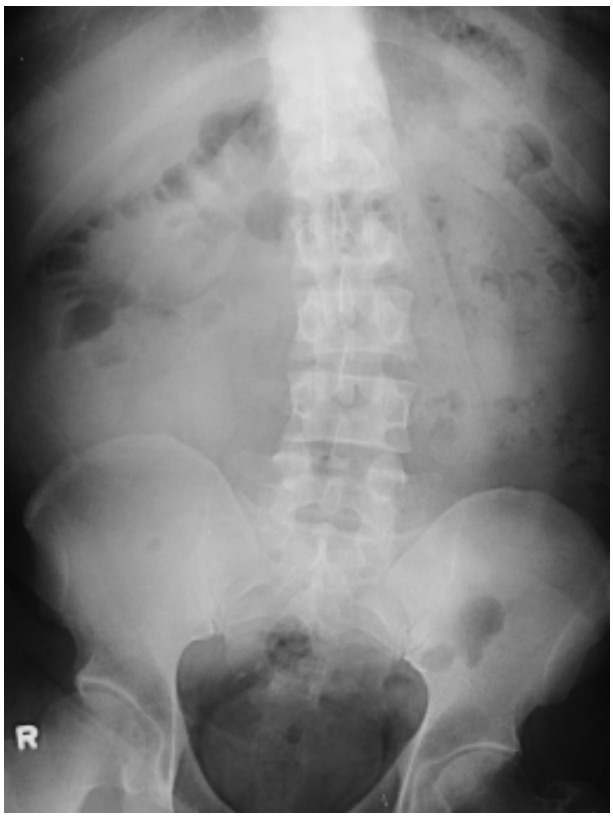

Figure 1. The KUB showed loss of right psoas shadow with mild listing of lumbar spine to right. There was also absent of bowel shadow in right lower quadrant.

revealed that the right kidney was tilted laterally with a large hypo-echogenic shadow below.

He was admitted with a preliminary diagnosis of psoas abscess. Initial blood result showed raised: White cell count: 14.5 x 10^9/L (Neutrophil: 11.5x10^9/L (79.1%)). Ultrasound performed by radiologist confirmed right psoas abscess with intraabdominal extension. Subsequent computer tomogram of abdomen showed a 7 x 7 x 16 cm collection in the right psoas muscle with extension to right iliacus. A connection of the caecum with the abscess was found. There was no bony involvement and the fat plane between the psoas and the lumbar vertebra was preserved. (Figure 2)

Emergency operation was performed and the caecum and terminal ileum was adhered to the retro-peritoneum very firmly forming a big firm mass. The appendix was unidentifiable and there was a big abscess from the caecum extending to the right psoas muscle. The abdomen looked relatively clean and no pus was seen. An operative diagnosis of right psoas abscess and gangrenous appendicitis was made. The abscess was drained and a right hemi-colectomy was performed.

Figure 2. Computer tomogram of abdomen showed right psoas abscess with extension to the adjacent bowels.

Blood culture was negative and abscess swab found heavy growth of Escherichia coli and Streptococcus intermedius. Pathology report confirmed Dukes' B adenocarcinoma (moderately differentiated). Resection margin was clear. The patient had an uneventful post-operative course and was discharged on Day 11 with referral to Oncology Department for adjuvant chemotherapy.

Case history 2

A 78-year-old lady presented to our department with a one day history of back pain and abdominal discomfort. There was no history of trauma and she had no complaint of vomiting or diarrhoea. She was afebrile on arrival. Her blood pressure was 119/61 mmHg and pulse was 60/min.

Physical examination showed mild tenderness over her low back region. Her abdomen was soft and no mass was palpated. There was no neurological deficit detected. Initial urine strip test showed it to be positive for WBC and negative for RBC. The X-ray of lumbosacral spine showed degenerative changes with intact psoas shadow. (Figures 3a & 3b) The initial diagnosis was musculoskeletal pain and she was given an intramuscular injection of Difcloenac Sodium.

However, the pain did not improve after the intramuscular analgesia. She was admitted to observation ward for management of her back pain. However, she continued to complain of abdominal discomfort and vomited a few times. She was also noticed to have low grade fever. Repeated examination did not identify any abnormal abdominal signs. Initial blood test showed raised while cell count of 11.3 x 10 x 10^9/L. Repeated urinalysis was unremarkable. Bedside ultrasound excluded the presence of biliary pathology or abdominal aortic aneurysm.

She continued her stay in our observation ward but she developed hypotension a few hours later with persistent back pain and vomiting. Abdominal examination did not suggest peritonitis or abdominal mass. Chest X-ray showed no free gas under diaphragm and electrocardiogram showed sinus tachycardia. Repeated bedside ultrasonography detected no intrabdominal fluid or other pathology.

She was transferred to intensive care unit with a provisional diagnosis of septicaemic shock. She was intubated and required inotropic support. The first blood culture yielded Gram positive cocci. Contrast computer tomogram revealed left psoas abscess with no other intra-abdominal pathology. Subsequent CT-guided aspiration was performed but no growth was yielded. She responded to intravenous antibiotics and repeated scan confirmed the resolution of the abscess. She was finally discharged on Day 34 uneventfully.

Figure 3a.

Figure 3b.

Figures 3a & b. X-ray lumbo-sacral spine showed degenerative changes with intact psoas shadow.

Discussion

Psoas abscess is not a common disease. It can be divided into primary and secondary types. Primary psoas abscess refers to cases that no obvious cause is found. But a survey in the United States found that 86% of patients with primary psoas abscess were intravenous drug abuser and 57% of them were positive for Human Immunodeficiency Virus.[3] In the secondary type, there are definite underlying causative factors. Historically, psoas abscess was associated with tuberculosis of spine.[4] However, it was now rare especially in developed countries.[1] Except in Europe, most of the psoas abscess were primary – 99.5% in Africa and Asia and 61% in North America.[5]

Staphylococcus aureus was the commonest organism involved in primary psoas abscess.[6] The causative agents varied in secondary psoas abscess, including Streptococcus agalactiae, Escherichia coli and Streptococcus epidermidis, etc.[6] In the first case, it was a secondary psoas abscess due to ruptured carcinoma of caecum and a mixture of Escherichia coli and Streptococcus intermedius were involved. The commonest associated conditions in secondary psoas abscess was Crohn's disease in Western countries.[1] The Eastern counterpart reported epidural abscess, osteomyelitis, septic arthritis, perianal abscess, pulmonary tuberculosis and hydronephrosis to be related to the condition.[6] Perforated carcinoma of colon presented as psoas abscess were also reported in other series.[7,8]

The classical triad of presentation included fever, loin pain and groin mass might not be present in all cases. In the case series by Chern, et al, fever was noted in up to 80% of all cases but mass in groin or loin was only detected in 20% of patients.[9] In another series, none of the patients presented with all symptoms of the classical triad.[10] With respect to the first case, loin pain was the only symptom and low grade fever was detected on presentation. The mode of onset of symptom described by the patient was indeed misleading. The most alarming sign was the exaggeration of pain on femoral stretch test. To make a diagnosis in the second case was even difficult, as the initial symptoms were non-specific. It was not until the patient developed sepsis that the more important diagnosis was made. Emergency physicians should be more vigilant when attending to back pain patients with atypical presentation or physical signs. Any elderly presented with back pain should also not easily overlooked.

Computer tomogram is the investigation of choice.[1] It has high sensitivity for detectiong these lesions and facilitates the delinea of extent and complexity of the lesions. Percutaneous drainage guided by ultrasonography or computer tomogram may be attempted for primary psoas abscess but surgical drainage is usually recommended for the secondary type.[11]

Arriving at a diagnosis of psoas abscess is a real challenge to emergency physicians. A delay in making the diagnosis can be avoided with a vigilant mind and appropriate bedside investigation.

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