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Diabetes with multiple abscesses disseminated in time and place

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ABSTRACT

We report the course of a 29 year old diabetic and alcoholic with multiple visceral and muculoskeletal abscesses that occurred sequentially over a span of 4 months that was caused by repeated interruptions in his treatment due to poor compliance and premature discharges from hospital.

1. Introduction

Melioidosis is sporadic in the Indian subcontinent, the Middle East and Africa[1] and endemic in South-east Asia and Northern Australia. With a large diabetic population India may be at high risk[2]. Unawareness, low suspicion rates and under recognition contributes to under reporting of the illness[3]. We report a diabetic man with alcohol abuse who had sequential development of melioidosis related visceral and musculoskeletal abscesses caused by repeated interruptions in treatment. Diagnosis was only by therapeutic trial and isolation of *Pseudomonas* species in bone marrow aspirate and pus.

2. Case

This man was admitted with high grade intermittent fever and diarrhea of 5 d duration. A left thigh abscess had been incised and drained 15 d ago when he had had similar episodes of fever. He had undergone a left nephrectomy following blunt trauma abdomen 8 years ago. He drank heavily and had lost jobs twice. Examination revealed hypotension, tachycardia, icterus and fever without other systemic signs. Investigations showed pancytopenia, deranged liver function tests, splenic abscesses (Figure 1A), reticulonodular infiltrates on chest radiograph (Figure 1B), normal echocardiography, bilateral pleural effusion and 6th rib abscess (Figure 1C, 1D) on computed tomography (CT). Pleural fluid was transudative with lymphocytic predominance. Serology for HIV, HbsAg, Anti-HCV, scrub typhus, brucella and leptospirosis were negative. He was unwilling for splenic aspiration- bone marrow aspirate grew *Pseudomonas* species. He became afebrile after intravenous ceftazidime (1 g/8 h) for 4 d and was discharged at request.

He returned 5 d later (without continuing treatment) with fever recurrence and periodontal abscess to the Dental OPD. He was advised admission and intravenous amoxicillin-clavulanic acid. Ceftazidime was also added but he left hospital when his fever improved on third day. He was readmitted 56 d later with fever, pus discharge in stools, right hip pain and walking difficulty. Two weeks prior to the third admission he had been admitted in another hospital with hip pain and a CT abdomen had revealed a right sided psoas abscess (Figure 2A). That had been drained transrectally (Figure 2B) and 4-drug antituberculous therapy (ATT) had been commenced which he had been taking regularly for the 2-week period. His anemia had necessitated two RBC transfusions. Pus aspirated from psoas

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abscess revealed *Pseudomonas* species following which ceftazidime, doxycycline, chloramphenicol and trimethoprim were initiated. Due to domestic problems he was discharged after a week's stay.

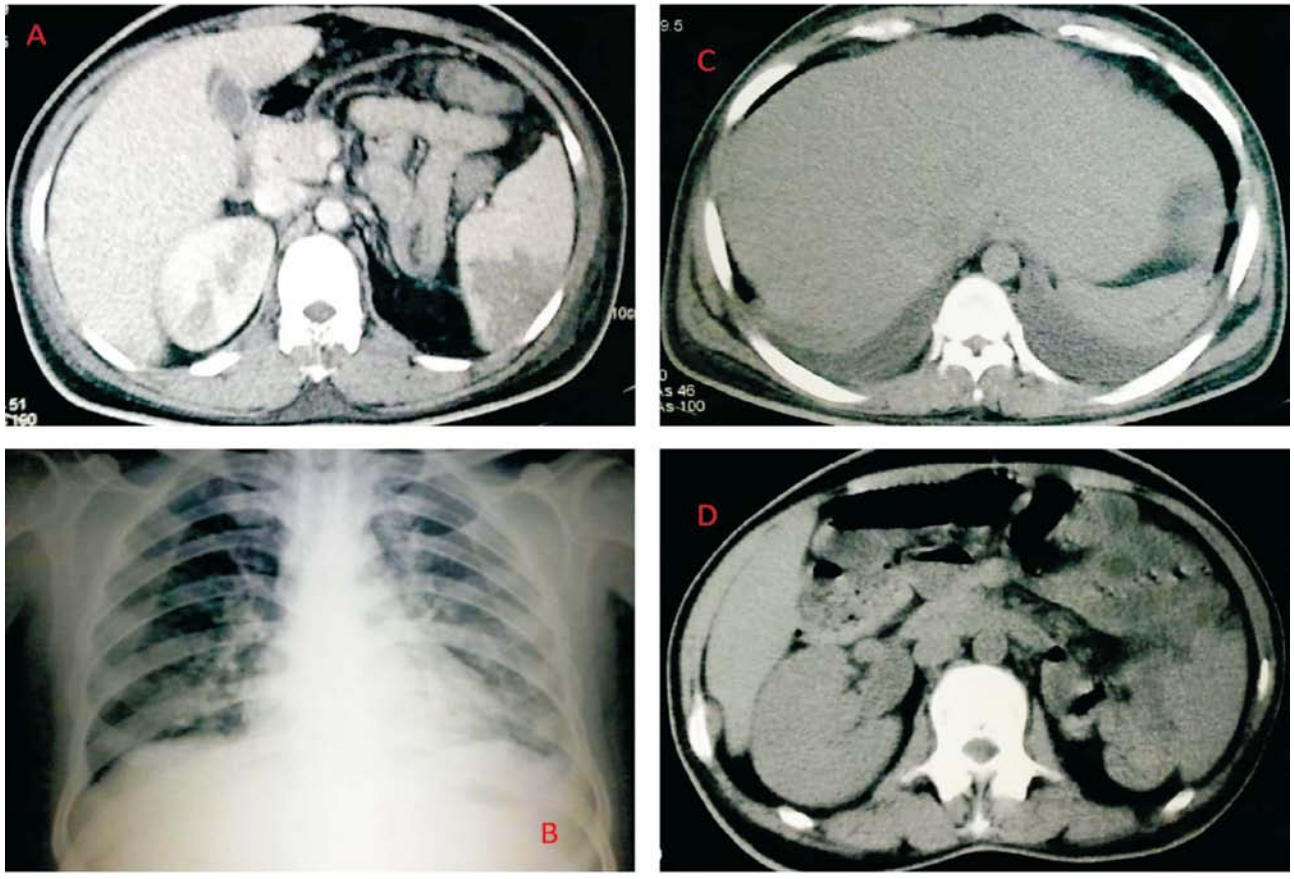

Figure 1. CT examination I.
A: CT abdomen showing post left nephrectomy status and large splenic abscess during 1st admission; B: Chest radiograph with asymmetrical reticulonodular opacities and left costophrenic angle blunting; C: CT chest with bilateral pleural effusion; D: CT abdomen revealing a small abscess adjoining the rib.

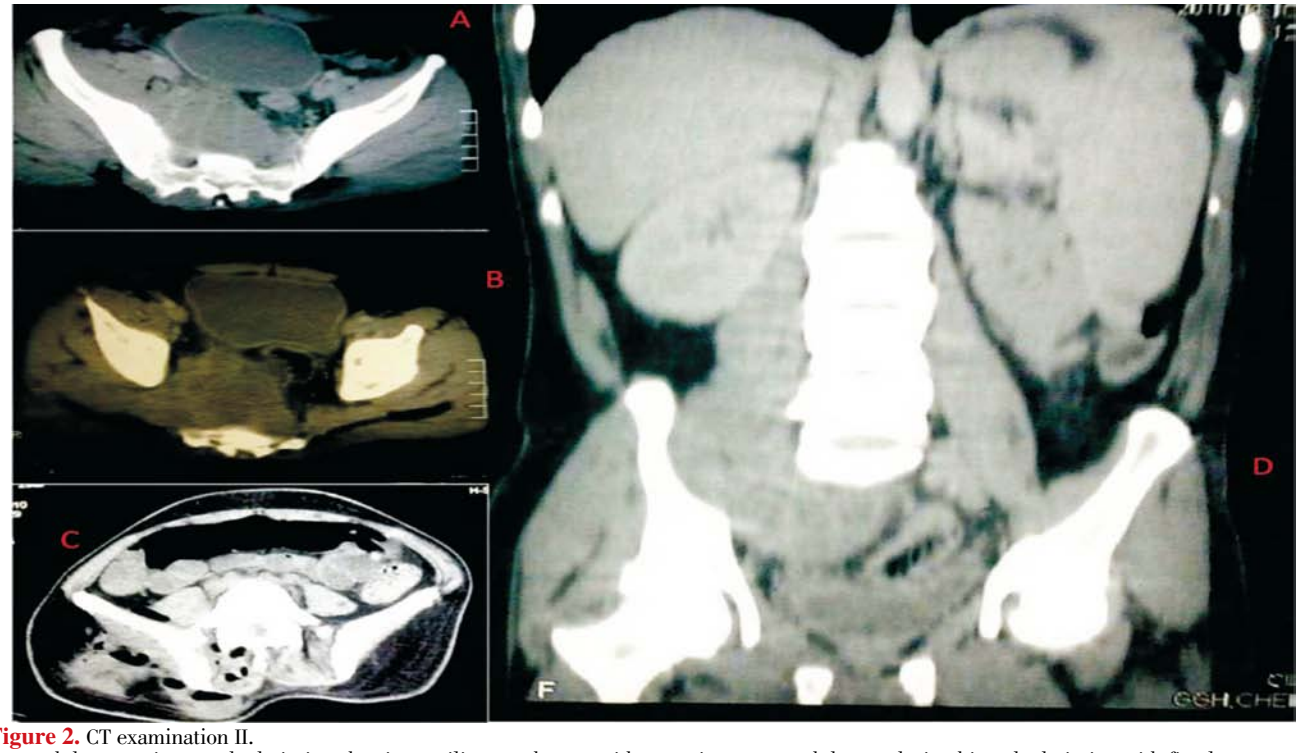

Figure 2. CT examination II.
A: CT abdomen prior to 3rd admission showing an iliospas abscess with septations; B: CT abdomen during his 3rd admission with fistulous connection between iliopsoas and rectum; C: CT abdomen during his 4th admission – iliopsoas, gluteal and presacral abscesses; D: Frontal view of thickened right sided iliopsoas muscle and associated abscess.

The man came back 4 d later with increasing hip pain, inability to walk and swelling in the right gluteal region. His CT revealed abscesses in the iliopsoas, gluteal and presacral region (Figure 2C). The patient refused surgical debridement and he was maintained on intravenous ceftazidime for 2 weeks. He was given further two RBC transfusions. He was able to walk by the 5th day and fever subsided completely on 7th day. He made two follow-up visits over the next four months and was compliant to doxycycline and trimethoprim but not to chloramphenicol. His sugars were well controlled during all his admissions. He was unwilling for a repeat CT after 4 months of treatment and did not return to follow-up thereafter.

3. Discussion

Burkholderia pseudomallei, an obligatory aerobic gram negative organism causing melioidosis is characterised by abscesses in solid organs and musculoskeletal system[3] and acquired by inhalation or inoculation[4]. Risk factors include diabetes, cirrhosis, thalassemia, alcoholism, chronic kidney disease[3], endocarditis, thalassemia[5], chronic lung disease, malnutrition[2] and excess kava consumption[4] two of which were seen in our patient. Work and walking in wet rice fields contribute to the illness[1]. Melioidosis has been reported from south Indian states like Maharashtra, Kerala, Tamil Nadu, Karnataka and Pondicherry[2,3]. Ten percent seroprevalence has been seen in Vellore[6], Tamil Nadu. Diabetes is seen in 50% patients with melioidosis[4].

Lung involvement is the most common manifestation4 but our patient did not have respiratory symptoms and had reticulonodular infiltrates and bilateral pleural effusion. Lung lesions generally resemble tuberculosis and community acquired pneumonia[1]. Lymphocytic pleural effusion (>90%) is seen in melioidosis with Burkholderia being isolated from one pleural fluid sample[7]. In our patient, adenosine deaminase (ADA)was normal and 93% lymphocytosis was seen. Abscesses are the commonest manifestations in solid viscera[1]. Splenic abscesses occur in about 76% of visceral involvement. It generally occurs as a component of multisystem involvement and both micro abscesses and large 'honeycomb' lesions can occur[1]. *Staphylococcus*, tuberculosis, HIV and meliodiosis constituted the main organisms from splenic abscesses according to one study[5]. Due to repeated isolation of *Pseudomonas* species, we treated him empirically for melioidosis due to lack of an alternative diagnosis. HIV was negative and there was no improvement with ATT. Due to its similarity with tuberculosis, patients may get treated with ATT[2] without adequate investigations.

Abscesses in the psoas, gluteal region and scalp regions were seen in one of the largest case series reported from India[2]. Joint involvement is the commonest involvement in the musculoskeletal system but our patient was spared from such involvement. Most abscesses are seen simultaneously, but due to noncompliance and interruptions in his treatment our patient had sequential abscesses-left thigh, spleen, right 6th rib, periodontal, right iliopsoas, right gluteal and presacral regions over a period of 4 months. Disseminated infection contributes to mortality and deaths occur in 40% of patients with melioidosis even if they are treated[2]. Availability of intensive care facilities contributes to deciding mortality in countries like Thailand[8]. Morbidity and mortality is also contributed by relapses and recurrences. Our patient improved despite three relapses and addition of ATT without requirement of intensive care during his illness.

Though melioidosis is probably sporadic in India, it needs to be seriously considered in the differential diagnosis of tuberculosis and visceral or musculoskeletal abscesses that do not improve with conventional therapy. Since laboratory facilities are scarce or inadequate (as in our case), empirical therapeutic trial for melioidosis may be justified on similar lines to tuberculosis. The focus should be intensive inpatient therapy with ceftazidime and strict compliance to oral maintenance therapy. Radiological investigations especially CT, which has more widespread availability would be helpful where microbiological facilities are lacking, in diagnosing this "sleeper" disease in a susceptible population like ours.

Conflict of interest statement

We declare that we have no conflict of interest.

References

[1] Lima KS, Chong VH. Radiological manifestations of melioidosis. *Clin Radiol* 2010; **65**: 66-72.

[2] Vidyalakshmi K, Shrikala B, Bharathi B, Suchitra U. Melioidosis: An underdiagnosed entity in western coastal India: A clinico-microbiological analysis. *Indian J Med Microbiol* 2007; **25**: 245-248.

[3] Pandey V, Rao SP, Rao S, Acharya KAV, Chhabra SS. *Burkholderia pseudomallei* musculoskeletal infections (melioidosis) in India. *Indian J Orthop* 2010; **44**: 216-220.

[4] White NJ. Melioidosis. *Lancet* 2003; **361**: 1715-1722.

[5] Joazlina ZY, Wastie ML, Ariffin N. Computed tomography of focal splenic lesions in patients presenting with fever. *Singapore Med J* 2006; **47**: 37-41.

[6] Dance DAB. Melioidosis as an emerging global problem. *Acta Tropica* 2000; **74**: 115-119.

[7] Chung KM, Chou DW, Chen CH, Cheung BMH. Lymphocytic pleural effusion in acute melioidosis. *J Formos Med Assoc* 2007; **106**: 874-877.

[8] Peacock SJ. Melioidosis. *Curr Opin Infect Dis* 2006; **19**: 421-428.