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Case report

An unusual case of primary melioidotic prostatic abscess complicated by perianal abscess

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A B S T R A C T

Burkholderia pseudomallei is recognized to cause severe and fatal infections. Most of the infections caused by this facultative intracellular gram-negative bacterium are pneumonia, soft tissue, genito-urinary and central nervous system infection. We report an unusual case of primary prostatic abscess complicated by perianal abscess caused by *Burkholderia pseudomallei*. Melioidosis related anorectal infections have not been previously reported in the literature.

Introduction

Melioidosis is a clinically diverse disease caused by the facultative intracellular gram-negative bacterium *Burkholderia pseudomallei*. This organism is widely distributed in the soil and fresh water in the endemic regions of Southeast Asia and the Northern Territory of Australia. Melioidosis is a great mimic whereby the infection can result in clinical manifestations involving virtually any sites. Prostatic abscess due to melioidosis is uncommon probably due to underdiagnosis in Southeast Asia as it is a much more common manifestation of melioidosis in Australia. We report a rare case of primary melioidotic prostatic abscess complicated by perianal abscess that serves good lessons to both the internist and primary care physicians.

Case report

A 56 year-old male with poorly controlled diabetes presented to the emergency department with intermittent high-grade fever and lower urinary tract symptoms for two weeks prior to admission. He was prescribed a course of antimicrobials by his primary care physician, which did not alleviate his symptoms. He complained of dysuria, frequency and acute urinary retention on the day of presentation necessitating the placement of a urinary catheter. Physical examination on admission revealed high-grade fever with stable vital signs. The rest of the examination was otherwise unremarkable. Per rectal examination detected an enlarged but non-tender prostate without areas of erythema or subcutaneous masses near the anal orifice. He was initially treated for urinary tract infection with IV cefuroxime. However, his condition did not improve with persistent high spiking fever. With a slow response to empirical treatment, antimicrobials were escalated accordingly to include the usage of IV ceftriaxone and IV Piperacilin/tazobactam. Despite sequential escalation of empirical broad-spectrum antimicrobials, his condition continues to deteriorate with no positive blood and urine culture to guide therapy. After 4 days of admission, he complained of painful defecation and perianal examination revealed an area of fluctuant induration with superficial pustules located at 8 o'clock. A diagnosis of perianal abscess was subsequently made.

Pre-operative CT scan of the thorax, abdomen and pelvis showed enlarged prostate measuring 5 cm(AP) × 6.6 cm(W) × 5.6 cm(CC) with multiple hypodensities seen within the prostate. No other solid organ abscesses or collections were found. He subsequently underwent incision and drainage of perianal abscess that was found to be tracking along the right ischeo-rectal region superiorly. 50cc of pus was drained and was sent for culture and sensitivity. On day 5 of hospital stay, blood cultures remained negative. The cultures from the drainage were positive for gram-negative bacilli. 3 days later, the culture was identified to be *Burkholderia pseudomallei*.

He subsequently completed 4 weeks of IV ceftazidime and was discharged with 6 months of co-trimoxazole for eradication therapy. A repeated CT scan prior to discharge showed resolution of prostatic abscesses.

Discussion

Melioidosis is an infection caused by the facultative intracellular gram-negative bacterium, *Burkholderia pseudomallei*. It is endemic in Southeast Asia and northern Australia. The spectrum of signs and symptoms can range from benign skin and soft tissue infections to fatal

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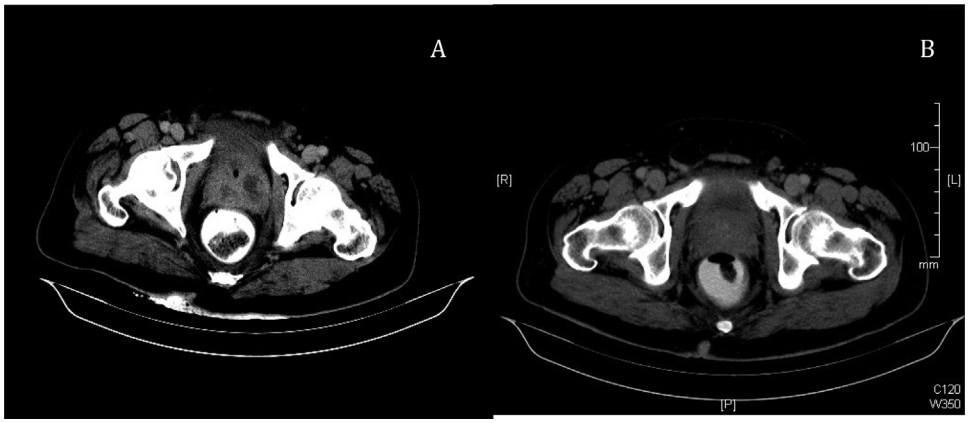

Fig. 1. A: Computed tomography examination showing multiple hypodensities representing abscesses. B: Computed tomography examination after 4 weeks of treatment showing resolution of hypodensities within the prostate.

septicemia. Due to its myriad presentation, the causative bacterium *Burkholderia pseudomallei* is also known as "the great mimicker".

The lung is the most commonly affected organ across all series often manifesting as pneumonia or primary lung abscess. Currie et al. in his 20-year prospective study of melioidosis in northern Australia reported pneumonia accounted for half of the total presentations [1]. Similar results are also observed in Malaysia whereby a review of case reports from 1975 to 2015 revealed that pneumonia was the most common clinical presentation (36%) closely followed by soft tissue (33%) and genitourinary infections (7.5%)[2]. Interestingly, *Burkholderia pseudomallei* resulting in perianal abscess has not clearly been reported before. Kingsley et al. in his review of case reports over the span of 40 years evaluated the frequency of internal organ abscesses and other foci of infection did not come across any cases that had perianal abscess as the primary or secondary diagnosis [2]. Currie et al. in his series of 540 cases also did not identify any cases with such presentation [1] (Fig. 1).

Besides the primary clinical presentation, secondary foci of infection have been reported to occur in 49% of all cases [2]. In this case, a perianal abscess developed during the course of admission necessitating urgent surgical debridement. The primary foci of infection at the prostate would have been missed if a CT scan had not been performed or the perianal abscess did not develop. Digital rectal examination is useful for detecting prostatic involvement but it cannot differentiate prostatic abscess from acute prostatitis due to other causes. Although an enlarged prostate can serve as a useful clue, the absence of tenderness cannot preclude the diagnosis. Melioidotic prostatic abscess is well recognized but uncommon except in Australia possibly due to under diagnosis. This is reflected by the fact that no cases of melioidotic prostatic abscess were identified in a retrospective review of 135 patients with melioidosis in Pahang, Malaysia from January 2000 to June 2003 [3]. Similarly, only 7 melioidotic prostatic abscess were reported out of the 56 cumulative case reports in Malaysia from 1975 to 2015 [2]. This is in contrary to Australia that has the highest reported number of cases for melioidotic prostatic abscess. In Australia, routine abdomino-pelvic CT scanning of all melioidosis cases has shown prostatic abscess to be present in up to 20% of total cases [4]. This discrepancy is largely because routine CT scan of the pelvis was not done in Malaysia suggesting that the diagnosis could have been missed.

Case reports have shown that melioidotic prostatic abscess can be treated with antimicrobials alone without surgical drainage. There has been no randomized controlled trial looking at the outcome of the treatment in terms of mortality, with or without surgical drainage of the prostatic abscess. Hence, it is still controversial and more studies are needed in this area [5].

Conclusion

Prostatic abscess is uncommon in melioidosis. Clinical signs are usually present but may be subtle resulting in inappropriate treatment and under diagnosis. Secondary foci of infection involving remote sites can occur during the course of illness. Detection is enhanced by routine computerized tomographic screening of the abdomen and pelvis for occult visceral abscesses in all cases of melioidosis. Having a high degree of suspicion among high-risk groups along with early provision of appropriate antimicrobials is the cornerstone of management.

Declarations of interest

None.

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