

Medical Imagery

Concurrent emphysematous pyelonephritis, cystitis, and iliopsoas abscess from discitis in a diabetic woman

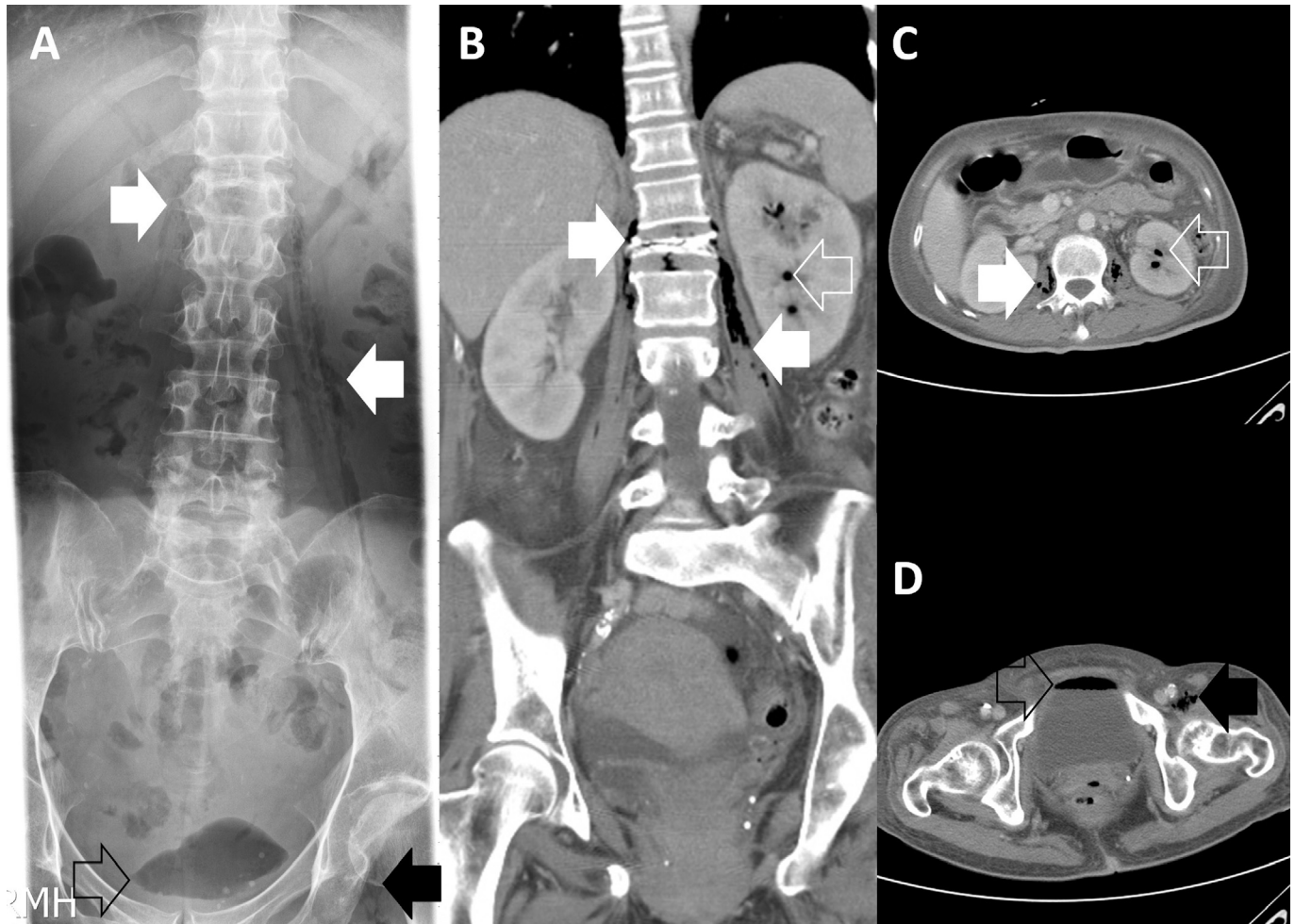


Figure 1. Anteroposterior view of the lumbar spine showing compression of the first lumbar spine, radiolucency along the bilateral psoas muscles (white arrows in A) suggestive of bilateral emphysematous iliopsoas abscess with extension to the left hip joint (black arrow in A), and air within the bladder (hollow black arrow in A) suggestive of emphysematous cystitis. The axial and coronal contrast-enhanced abdominal computed tomography (CT) scan views revealed compression of the first lumbar spine with air bubbles within the spine and spinal canal (pneumorrhachis), bilateral emphysematous iliopsoas abscess (white arrows in B and C) with extension to the left hip joint (black arrow in D), left emphysematous pyelonephritis (hollow white arrows in B and C), and emphysematous cystitis (hollow black arrow in D).

A 60-year-old diabetic Taiwanese woman presented to the emergency department with lower back pain of 2-week duration. Physical examination revealed local tenderness over the lower back region; bilateral knocking pain was noted at the costovertebral angle. Laboratory investigations revealed a white blood cell (WBC) count of $4.5 \times 10^9/l$ (normal value $4\text{--}11 \times 10^9/l$) with band

forms of 2% and segmented neutrophils of 96%, creatinine of 2.3 mg/dl (normal value 0.7–1.4 mg/dl), C-reactive protein (CRP) of 25.32 mg/dl (normal value <0.3 mg/dl), blood glucose of 567 mg/dl (normal value 70–110 mg/dl), and the presence of ketone bodies. Spot urine revealed pyuria. A spinal X-ray showed radiolucency along the bilateral psoas muscles, with extension

<http://dx.doi.org/10.1016/j.ijid.2016.09.012>

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to the left hip joint, and air within the bladder (Figure 1A). An abdominal computed tomography (CT) scan demonstrated left emphysematous pyelonephritis (EPN), cystitis, and bilateral emphysematous iliopsoas abscesses from discitis of the first lumbar spine (Figures 1B–D).

Surgical debridement for discitis and percutaneous drainage for the emphysematous iliopsoas abscesses were performed. Cultures of the abscesses, blood, and urine grew *Enterobacter aerogenes*. Sudden blindness in the left eye occurred on day 10 postoperative. An orbital CT scan disclosed endophthalmitis, and culture of the intra-orbital fluid yielded *E. aerogenes*.

Endogenous endophthalmitis is caused by the hematogenous spread of microorganisms from a primary infection focus to intra-ocular spaces. Endogenous endophthalmitis accounts for 2–8% of all endophthalmitis.¹ The major infectious focus of secondary iliopsoas abscess is largely skeletal in origin (55.2%). Emphysematous iliopsoas abscess has an overall mortality rate of 44.4%.² EPN is a gas-forming infection of the renal parenchyma and its surrounding tissue. *Escherichia coli* and *Klebsiella pneumoniae* are the most common microorganisms in EPN.³ *E. aerogenes* is a pathogen in hospital-acquired endophthalmitis and is rarely found in community-acquired cases.⁴ Endogenous endophthalmitis associated with concurrent EPN, emphysematous cystitis, and iliopsoas abscess from discitis is a rare clinical entity.^{1,5–7} The abnormal air seen in the soft tissue of the lumbar spine on plain film was suggestive of an emphysematous infection. The CT scan was indispensable for investigating the infectious foci and associations with the adjacent structures.^{3,7} A total of 54 078 emergency visits were analyzed in a retrospective study, and among 5628 febrile adults, 214 (3.8%) had an elevated CRP level of more than 10 mg/dl and a normal WBC count. Sixty-six (30.8%) of these 214 patients had diabetes mellitus. CRP has been found to be more sensitive than the WBC count for distinguishing bacterial infection from other causes of fever.⁸ It is speculated that the possible cause of the elevated CRP level with normal WBC count in the patient presented herein was the severe infection with a chronic course and the patient's immunocompromised status.

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Consent: Written informed consent was obtained from the patient's adult son for publication of this case report and all accompanying images.

Conflict of interest: No competing interest declared.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.ijid.2016.09.012>.

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Sung-Yuan Hu^{a,b,c,d,*}

Bor-Jen Lee^{b,e}

Che-An Tsai^f

Ming-Shun Hsieh^{g,h,**}

^aDepartment of Emergency Medicine, Taichung Veterans General Hospital, 1650 Taiwan Boulevard Sect. 4, Taichung 40705, Taiwan

^bSchool of Medicine, Chung Shan Medical University, Taichung, Taiwan

^cInstitute of Medicine, Chung Shan Medical University, Taichung, Taiwan

^dDepartment of Nursing, College of Health, National University of Taichung Science and Technology, Taichung, Taiwan

^eDepartment of Critical Care Medicine, Taichung Veterans General Hospital, Taichung, Taiwan

^fDivision of Infection, Department of Internal Medicine, Taichung Veterans General Hospital, Taichung, Taiwan

^gDepartment of Emergency Medicine, Taipei Veterans General Hospital, Taoyuan Branch, No. 100, Sec. 3, Cheng-Kung Road, Taoyuan 330, Taiwan

^hInstitute of Occupational Medicine and Industrial Hygiene, College of Public Health, National Taiwan University, Taipei, Taiwan

Corresponding Editor: Eskild Petersen, Aarhus, Denmark

*Corresponding author. Tel.: +886 4 23592525 ext. 3670; fax: +886 4 23594065

**Corresponding author. Tel.: +886 3 2868001; fax: +886 3 3335211

E-mail addresses: song9168@pie.com.tw (S-Y. Hu), simpleabei@yahoo.com.tw (M-S. Hsieh)

Received 14 July 2016