

Diagnosis of prostatitis by 18-F-fluorodeoxyglucose positron emission tomography

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A 74-year-old man, who underwent renal transplantation in April 2007 for end-stage renal failure caused by chronic glomerulonephritis, was admitted in August 2008 for fever (38.5°C) without orientation symptoms. He had history of essential hypertension, diabetes and ischaemic cardiopathy. The patient had presented two episodes of isolated fever in June 2007, with negative bacteriology, which responded to large spectrum antibiotics. He reported cloudy urines, but no mictalgia nor pelvic pain. Physical examination was unremarkable, and the renal transplant was not painful. Initial blood tests showed a high C-reactive protein (33 mg/dL), a white blood cell count of 18 000/ μ L (85% neutrophils) and a mild increase in plasma creatinine (1.6 mg/dL). There was no leucocyturia, but urine culture was positive for *Enterococcus faecalis*. The prostate-specific antigen (PSA) was normal at 0.14 ng/mL. Eight blood culture pairs remained sterile. Renal ultrasonography was unremarkable. An 18-F-fluorodeoxyglucose (FDG) positron emission tomography (PET) scan revealed an intense prostatic fixation, compatible with prostate abscess (Figure 1). The diagnosis was confirmed by painful digital rectal examination. Appropriate antibiotherapy was initiated, resulting in the disparition

of fever and normalization of inflammation and renal function.

The association between fever and bacteriuria in a renal transplant recipient can be caused by transplant pyelonephritis or prostatitis. The diagnosis of prostatitis may be difficult in the absence of specific symptoms or with normal PSA levels [1,2] causing delay in treatment. In our patient, the PET scan focused intensely on the prostate, leading to the diagnosis of prostatitis despite normal PSA level. This case, the first documented in a renal transplant recipient, confirms the value of 18-FDG PET scan in a fever of unknown origin and, more precisely, in the diagnosis of bacterial prostatitis. The differential diagnosis of increased FDG uptake in the prostate includes inflammatory and malignant processes [3].

Conflict of interest statement. None declared.

References

1. Palou J, Morote J. Elevated serum PSA and acute bacterial prostatitis. *Urology* 1999; 35: 373
2. Pansadoro V, Emiliozzi P, Defidio L *et al.* Prostate-specific antigen and prostatitis in men under fifty. *Eur Urol* 1996; 30: 24–27
3. Kao P, Chou Y, Lai C. Diffuse FDG uptake in acute prostatitis. *Clin Nucl Med* 2008; 33: 308–310

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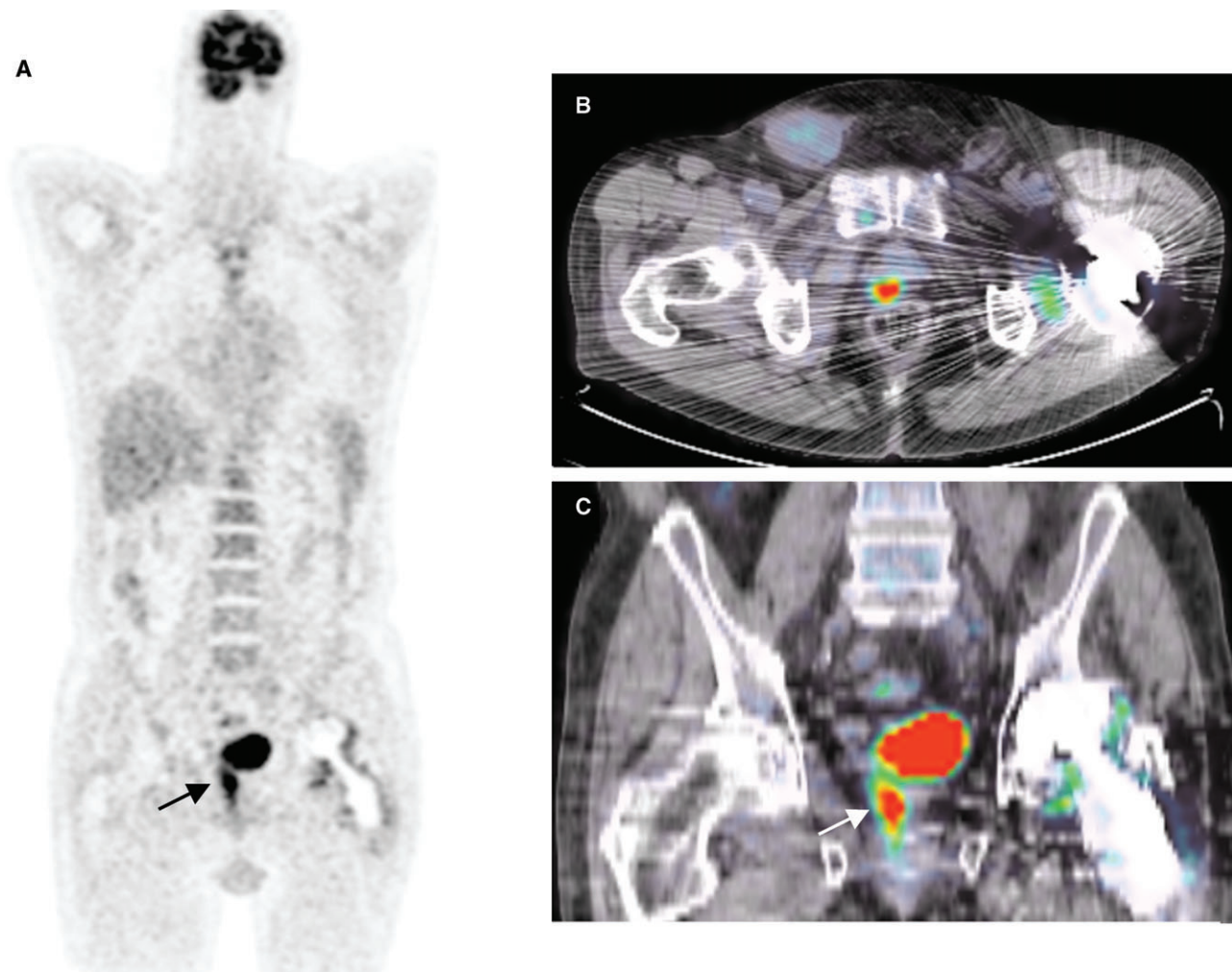


Fig. 1. Coronal (A, C) and axial (B) sections of FDG PET (A) and FDG PET scan (B, C) showing the intense FDG uptake in the prostate (arrow), in addition to the normal captation in the brain and urinary bladder. The image indicates the presence of a prostate abscess, starting in the seminal vesicle and fusing with the left lobe of the prostate. The artefacts in panel B are caused by the left hip prosthesis.