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PHOTOQUIZ

An unusual cause of a usual presentation

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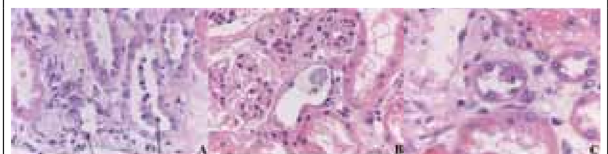
A 61-year-old HIV-positive male presented at the clinic complaining of a fever and extreme tiredness for a week. Additional complaints were myalgia, headache and macroscopic haematuria. On physical examination the patient was ill, with a temperature of 40 °C, blood pressure of 135/84 mmHg, pulse rate of 82/min and the patient had bilateral flank tenderness. The patient's medical history reveals a well regulated HIV status with an undetectable viral load and a repeated deep venous thrombosis necessitating lifelong anticoagulation. The antiretroviral therapy consists out of a combination therapy of abacavir, lamivudine, and zidovudine.

Table 1. *Laboratory results with patients normal test values, results at first presentation and results at the second presentation*

		'Last known'	1st presentation	2nd presentation
Haemoglobin	g/l	8.8	10.8	6.8
Leucocytes	x 10⁹/l	6.2	18.2	14.7
Thrombocytes	x 10⁹/l	306	137	327
ESR	mm/hr		24	89
CRP	mg/l		54	113
Creatinine	µmol/l	88	850	122
BUN	mmol/l	2.8	31.8	6.1
Sodium	mmol/l	138	126	136
Potassium	mmol/l	4.6	4.8	4.2
CD4	x 10⁹/l	1,23	1,18	
ANCA		Negative		
ANA		Negative		
Anti-GBM		Negative		

ESR = erythrocyte sedimentation rate; CRP = C-reactive protein; BUN = blood urea nitrogen; ANCA = antineutrophil cytoplasmic antibodies; ANA = antinuclear-antibody; Anti-GBM = antiglomerular basal membrane.

Figure 1. *Tubular lesions: The biopsy shows a patchy tubulo-interstitial lymphocytic infiltrate, but no tubulitis*



(A) Pleomorphic tubular epithelial cells with enlarged nuclei (black arrow). Sludging of necrotic epithelial cells in the tubular lumen (open arrow). (B) Cristallyne matter in tubular lumen. (C) Mitotis of tubular epithelial cells, indicative of epithelial repair in acute tubular necrosis

The patient had not been abroad, but had recently visited his holiday home in the eastern part of the Netherlands. Blood results are listed in *table 1*. Urinalysis showed proteinuria and haematuria. Empirical treatment with antibiotics was started after obtaining blood cultures. Although fever and other physical complaints resolved after a few days, renal function further deteriorated. To rule out a vasculitis, a kidney biopsy was performed, which demonstrated a nonspecific tubulo-interstitial lymphocytic inflammation and tubular necrosis, without evidence of glomerular disease (*figure 1*).

Within a few days the renal function improved spontaneously and the patient was discharged; there was no need to initiate renal replacement therapy. Several days later he visited the outpatient clinic with recurrent high fever and malaise. Second presentation laboratory test results are also listed in *table 1*.

WHAT IS YOUR DIAGNOSIS?

See page 289 for the answer to this photo quiz.

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Answer to photo quiz (page 285)

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Hantaviruses, a group of single-stranded RNA viruses of the *Bunyaviridae* family, are an important cause of severe disease around the world.[1] Depending on the sub-type of the virus, clinical manifestations may vary enormously. In the Netherlands the hantavirus sub-type *Puumala* causes a disease called nephropatia epidemica. Infection with a hantavirus can take place through the inhalation of virus containing aerosol from rodent excreta, mainly the *Myodes glareolus* in the Netherlands, whose natural habitat is in forested areas. The incubation time is around 2 to 3 weeks followed by a febrile period. After the febrile period four stadia can be recognised: a hypotensive, oliguric, diuretic and a convalescent period.[1] Environmental- and occupation-related factors can increase the risk of infection with a hantavirus.[2] In the Netherlands the number of confirmed hantavirus infections is limited, possibly due to unawareness and under-recognition. As the incidence is highest in the eastern parts of the Netherlands, hantavirus should be part of the differential diagnosis in patients presenting with fever and renal failure, either living or have recently visited this region.[2] The patient described in this paper had stayed at his holiday home in Twente 3.5 weeks prior to the start of his complaints. During this stay he had cleaned his barn where he probably inhaled the fumes of mice excrement. The suspicion of a hantavirus infection may be confirmed with serology or PCR. In the Netherlands these tests are available at the National Institute of Public Health and the Environment (RIVM) and the Erasmus Medical Centre. As in this case, renal failure in nephropathia epidemica is usually completely reversible and only 1% of cases require temporary dialysis.[3] While treatment of hantavirus infection primarily consists of supportive care, early diagnosis of the infection can significantly reduce the duration of any necessary hospital stay and the possible inappropriate use of antibiotics.[4]

References

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