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Dear Editor,
In November 2011, a 31-year-old man was admitted to our hospital with fever and acute renal failure. Two months before, he had been diagnosed with methicillin-resistant Staphylococcus aureus aortic valve endocarditis requiring valve replacement. Heart surgery was performed without complications, and antibiotic therapy was started. 40 days after surgery, he became febrile and a diagnosis of prosthetic valve endocarditis was suspected. A transesophageal echocardiogram did not reveal new signs of endocarditis. Blood cultures were negative. The initial antibiotic therapy was empirically changed, and gentamicin was administered. After 2 weeks the patient developed acute anuric renal failure. At this time he was transferred to our hospital. On arrival the patient was febrile. Physical examination showed neither new cardiac abnormalities nor signs of systemic embolization. Blood test yielded a leucocytosis, renal failure and mild elevation of procalcitonin levels. CT scan of his head, chest and abdomen were negative for septic emboli. Transesophageal echocardiogram revealed the aortic prosthesis to be functioning normally in the absence of clear vegetations. Blood cultures were negative.
Although there was no evidence of sources of infection, fever was considered to be of infectious origin, and the renal failure was attributed to aminoglycoside nephrotoxicity.
Gentamicin was discontinued, antibiotic therapy waschanged again, and hemodialysis was started.
Over the following days, the patient had one episode ofsevere hemoptysis associated with respiratory failure and blood loss. A CT scan of the chest showed diffuse interstitialand alveolar infiltrates suggestive of alveolar hemorrhage. At this point, a diagnosis of a pulmonary renalsyndrome was suspected. Autoimmune tests were performed showing high titers of anti-glomerular basement membrane (anti-GBM) antibodies. A diagnosis of Goodpasture syndrome was made. The patient was administered prednisone and rituximab (preferred to other immunosuppressive drugs to minimize the risk of infection) and underwent a series of 19 plasma-exchange treatments.
Clinical conditions improved, no further episodes of hemoptysis occurred, and, at the time of discharge, anti-GBM antibodies were undetectable. However, the patient became dependent on chronic hemodialysis.
Goodpasture syndrome is an autoimmune disease characterized by pulmonary hemorrhage, glomerulonephritis and the presence of circulating anti-GBM antibodies.
Infection may be an initiating event or a precipitating factor for relapse. Identifying Goodpasture syndrome following an infectious event is challenging and high procalcitonin values may be observed even in the absence of infection [1]. In presence of a typical presentation including alveolar hemorrhage and renal failure, the evidence of circulating anti-GBM antibodies may confirm the diagnosis.

Life-saving treatment includes plasma-exchange toremove circulating antibodies and immunosuppressive medications to stop the production of the antibodies.
Occam's razor, also known as principle of parsimony, is a cognitive shortcut commonly used by physicians in their diagnostic reasoning. This logical device advocates that the doctor should not search for multiple causes of any condition if a single cause can provide a suitable explanation.
As well as other cognitive shortcuts, Occam's razor may help physicians when they are making decisions in the presence of multiple clinical informations [2]. Unfortunately sometimes this diagnostic approach may lead to a misdiagnosis [3].
In our case, although no sources of infection were identified, fever of infectious origin was considered as the most probable diagnosis for a patient recently undergoing cardiac surgery because of endocarditis. The correct diagnosis was not considered until our patient developed a further complication. This approach led to a treatment delay resulting in poor renal outcome and need for chronic hemodialysis.

Our case constitutes a diagnostic challenge and raises the problem of cognitive errors in medical diagnostic reasoning.

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