

cases that have been formally published, and this would be the fifth case [1,2].

A 46-year-old Caucasian woman presented to the emergency department with acute respiratory failure, petechiae, pulmonary hemorrhage, azotemia, proteinuria, and hematuria for 10 days. A ventilation/perfusion lung scan was read as low probability for a pulmonary embolism. Additional serologic examinations included negative ANA, anti-GBM, pANCA, cANCA, hepatitis B and HIV antibody. SPEP (serum protein electrophoresis) was also unremarkable. Hepatitis C antibody was positive, and quantitative testing for CG revealed type II (mixed CG, 0.2 g/dL). C3 and C4 complement levels were low. Renal biopsy revealed MPGN. Bronchoscopy did not demonstrate any endobronchial abnormality. The patient was treated with intravenous methylprednisolone, and both hemoptysis and renal function improved. She did not return for follow-up care.

CG associated with HCV has been recognized to cause pulmonary complications which are usually mild and without any significant signs or symptoms. Alveolar hemorrhage in CG is rare; there have been only 10 case reports in English medical literature [1]. Patients with the cryoglobulinemic pulmonary hemorrhage have an extremely poor prognosis and high mortality at presentation and even a poorer prognosis in survivors having further hemorrhagic episodes [1]. Diagnosis of pulmonary hemorrhage associated with HCV-associated CG requires a high index of suspicion; in this case, the patient presented to the emergency services with severe respiratory insufficiency and bilateral alveolar infiltrates on chest radiograph. Her acute respiratory decompensation with diffuse alveolar infiltrates and hemoptysis is indicative of alveolar hemorrhage syndrome [3]. The diagnosis can also be confirmed with the demonstration of hemosiderophages in alveolar lavage obtained by bronchoscopy. It has been established that patients with CG with chronic infection by HCV are sometimes linked to membranoproliferative glomerulonephritis with a survival rate of 33–49% after a mean follow-up of 10 years.

Managing an autoimmune manifestation of an infectious disease is complex. Although immunosuppressive agents may be needed to control potentially life-threatening autoimmune complications, there is a risk that the infection might get worse. A reasonable approach is first to control the acute autoimmune manifestations of disease with immunosuppressive therapy and then to deal with the underlying infection to prevent relapse [3].

We conclude that both alveolar hemorrhage and renal involvement associated with HCV-related type CG are exceptional entities. This poses problems regarding treatment as each patient may need a tailored treatment [1].

Conflict of interest statement. None declared.

Dayton Veteran's Affairs
Medical Center, Wright State
University, Boonshoft
School of Medicine, Dayton,
OH, USA
E-mail: drkhumabbass@gmail.com

Khurram Abbass
Jack M. Bernstein
Ali Ajam

1. Amital H, Rubinow A, Naparstek Y. Alveolar hemorrhage in cryoglobulinemia—an indicator of poor prognosis. *Clin Exp Rheumatol* 2005; 23: 616–620
2. Prasad M, Buller GK, Mena CI. Clinical problem-solving. Sum of the parts. *N Engl J Med* 2006; 355: 2468–2473
3. Iannuzzella F, Vaglio A, Garini G. Management of hepatitis C virus-related mixed cryoglobulinemia. *Am J Med* 2010; 123: 400–408

doi: 10.1093/ndtplus/sfq169

Advance Access publication 4 October 2010

Proteinuria-associated nutcracker syndrome: an amyloid-negative familial Mediterranean fever patient

Sir,

Familial Mediterranean fever (FMF) is an autosomal recessive disease, and the most important complication is amyloidosis which leads to end-stage renal disease [1]. Nutcracker syndrome (NCS) is a rare clinical condition manifested by haematuria, proteinuria, gonadal varicose veins and side pain, all due to compression of the left renal vein and renal congestion [2]. Not all the cases of proteinuria in familial Mediterranean fever are due to amyloidosis, and the 'nutcracker syndrome' can be one of the confounding causes.

Case

A 22-year-old female with an 11-year history of FMF was referred to our clinic for sustained proteinuria. The patient had undergone multiple kidney biopsies with no specific pathology and negative amyloid tests. Physical examination was unremarkable. Laboratory results revealed the following: white blood cells 6000/mm³, haemoglobin 10 g/dL, erythrocyte sedimentation rate 78 mm/h, creatinine 0.46 mg/dL, urea 12 mg/dL and albumin 3.2 g/dL. Urine sediment was normal, and 24-h urinary protein was 1.1 g/day. The immunological markers were negative. Renal Doppler ultrasound revealed a narrowing in diameter of the left renal vein at the aortomesenteric level and also mild dilation 2 cm distal to that level. The findings of the CT angiography study confirmed anterior NCS and compression of the anteroposterior and craniocaudal diameter of the left renal vein at the anterior aspect of the aorta as well as dilation of the left renal vein in the mid-section (Figure 1). Due to the lack of pathology in all three renal biopsies, it was found that the patient's proteinuria was due to NCS. Because of the mild symptoms, no invasive treatment was given, and treatment with an ACE inhibitor was initiated.

Discussion

The association between FMF and non-amyloid glomerulopathy is unusual. Previously, IgA and IgM nephropathies and polyarteritis nodosa (PAN) have been reported [3,4]. NCS, characterized by the compression of the left renal vein between the superior mesenteric artery and the ab-

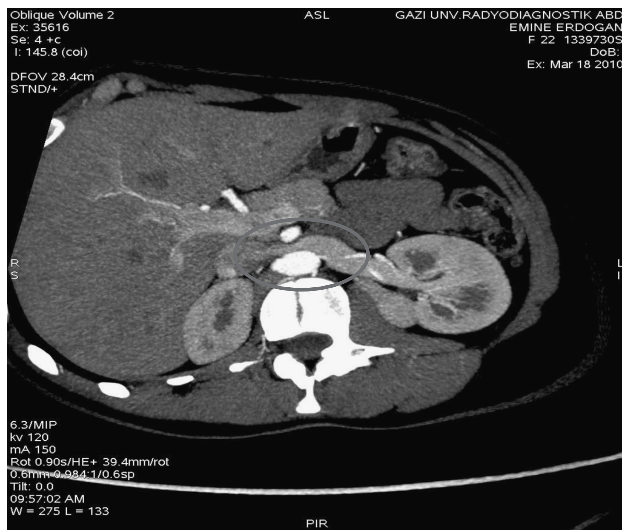


Fig. 1. CT angiography revealed a dilated left renal vein after passing between the aorta and superior mesenteric artery.

dominal aorta, was first named in 1972 by De Schepper [2]. Renal Doppler ultrasound, CT angiography, magnetic resonance angiography or venography can be used for the documentation of the degree of left renal vein compression [5]. NCS presented with FMF was first reported in 2009 by Ozcan *et al.*, which was similar to our case [6]. Here, we presume that actually, from the beginning, our patient's proteinuria was due to NCS. For mild haematuria or proteinuria, conservative treatment is proposed, whereas for recurrent severe haematuria or flank pain, endovascular stent surgical treatment is proposed for NCS [2]. Here, we proposed the conservative treatment. Mild proteinuria is a benign condition, but it can be persistent, and therefore, conservative treatment should be continued for several years. Although amyloidosis should be considered first in clarifying the aetiology of proteinuria in FMF, NCS, another rare entity, should be kept in mind and should also be excluded by non-invasive techniques when possible or by invasive techniques if necessary in FMF patients.

Conflict of interest statement. None declared.

¹Faculty of Medicine,
Department of Nephrology

²Faculty of Medicine,
Department of Internal
Medicine, Gazi University,
Ankara, Turkey

E-mail: serpilmugedeger@yahoo.com

Serpil Muge Deger¹
Fatih Karakaya²
Ulver Deric¹
Turgay Arinsoy¹
Sukru Sindel¹

1. Ben-Chetrit E, Toutou I. Familial Mediterranean fever in the world. *Arthritis Rheum* 2009; 61: 1447–1453
2. Ahmed K, Sampath R, Khan MS. Current trends in the diagnosis and management of renal nutcracker syndrome: a review. *Eur J Vasc Endovasc Surg* 2006; 31: 410–416

3. Peru H, Elmaci AM *et al.* An unusual association between familial Mediterranean fever and IgM nephropathy. *Med Princ Pract* 2008; 17: 255–257
4. Bakkaloğlu SA, Muzaç S, Akpek S *et al.* Polyarteritis nodosa in a case of familial Mediterranean fever. *Pediatr Nephrol* 2004; 19: 536–538
5. Cakir B, Arinsoy T, Sindel S *et al.* A case of renal vein thrombosis with posterior nut cracker syndrome. *Nephron* 1995; 69: 476–477
6. Ozcan A, Gonul II, Sakallioğlu O *et al.* Nutcracker syndrome in a child with familial Mediterranean fever (FMF) disease: renal ultrastructural features. *Int Urol Nephrol* 2009; 41: 1047–1053

doi: 10.1093/ndtplus/sfq171

Advance Access publication 5 October 2010

Blue toe syndrome as a clue to the underlying cause of acute renal failure

To the Editor,

We present here a scenario of acute renal failure in the setting of blue toe syndrome. A 62-year-old male with a past medical history of hyperlipidaemia, hypertension and stroke presented with a 2-week history of severe diarrhoea, generalized weakness and myalgias. His home medications included Lipitor, Coumadin, Lopressor, Aspirin and lisinopril. During his prior hospitalization, one and a half months ago, he had undergone coronary artery bypass graft which was complicated by an ascending and descending aortic dissection post-operatively. The ascending dissection was surgically repaired. The origin of the celiac axis, superior mesenteric artery and renal arteries was from the true lumen, and thus, the blood flow was not compromised from the descending aortic dissection (Figure 1a). On examination, the patient's blood pressure was 157/91 mmHg and pulse 85 beats/minute of equal strength in both upper and lower extremities. His systemic examination was significant for painful bluish discoloration of the toes bilaterally (Figure 1b). Initial laboratory results revealed blood urea nitrogen 111 mg/dL, serum creatinine 10.8 mg/dL, potassium 5.8 mEq/L, bicarbonate 15 mEq/L and creatinine phosphokinase 12 893 IU/L. Complement C3 level was decreased. Urine analysis did not reveal muddy brown casts. The remainder of the laboratory panel was also unremarkable. Lipitor was discontinued. Despite adequate hydration, the patient remained oliguric with no improvement in his renal function. In the setting of surgical history and blue toe syndrome, an atheroembolic phenomenon as the cause of renal failure was considered. Direct ophthalmoscopy and slit lamp examination of the eye revealed cholesterol crystal emboli in the retinal arterioles (Hollenhorst plaques, Figure 1c) and thus confirmed the diagnosis of atheroembolic disease. The patient was started on haemodialysis.

Atheroembolic disease may present with general symptoms of fever, myalgias, headache, weight loss and diarrhoea [1]. Though sometimes subtle, the pathological process of dislodging multitude of cholesterol crystals from atherosclerotic plaques in the arteries (often post-operatively) can manifest symptomatically diversely. The