Letters to the Editor

(3.1). Similarly, we do not know if the presence of peaks characteristic of MSU crystals in one control patient with OA who did not meet the classification criteria for gout [6] is a false positive or a true positive finding suggesting asymptomatic MSU crystal deposition. However, as this patients’ serum uric acid was 306 µmol/l, we believe that this could be a false positive finding.

The sensitivity of RS in detecting MSU crystal deposits in the first MTP joint in this study is comparable to that of US scans [7, 8]. However, we were unable to examine the dorsal aspect of the first MTP joint because the RS device could not be positioned on this surface due to its weight (9 kg) and the need to keep it absolutely still during RS. Therefore it is possible that RS may have an even higher sensitivity for detecting MSU crystal deposits than US. Thus further research is required to compare RS using a fibre-optic probe to allow examination of the dorsal aspect of the foot against US, joint aspiration or dual-energy CT in order to determine if it is able to reliably detect MSU crystal deposits in vivo.

Acknowledgements

The authors would like to acknowledge Dr Lawrence Rubin, Consultant Rheumatologist, St Michael’s Hospital, Toronto, ON, Canada, for donating the gouty tophus discharge from one of his patients and Wendy Jenkins and Sally Doherty for their help recruiting the study participants.

Funding: This research was funded by the Natural Sciences and Engineering Research Council of Canada Discovery for permission to conduct research and departmental research funds at the University of Nottingham.

Disclosure statement: The authors have declared no conflicts of interest.

Abhishek Abhishek1, Declan J. Curran2,3, Faizan Bilwani2, Adrian C. Jones2, Mark R. Towler2,3,8 and Michael Doherty1
1Academic Rheumatology, University of Nottingham, Nottingham, UK, 2Department of Mechanical & Industrial Engineering, Ryerson University, 3International Knowledge Institute, St Michael’s Hospital, Toronto, ON, Canada, 4Department of Rheumatology, Nottingham University Hospital NHS Trust, Nottingham, UK and 5Department of Biomedical Engineering, University Malaya, Kuala Lumpur, Malaysia

Supplementary data

Supplementary data are available at Rheumatology Online.

References

7 Naredo E, Uson J, Jimenez-Palop M et al. Ultrasound-detected musculoskeletal urate crystal deposition: which joints and what findings should be assessed for diagnosing gout? Ann Rheum Dis 2014;73:1522–8

IgG4-related disease associated with renal microaneurysms and polycythaemia

Rheumatology 2016;55:380–382
doi:10.1093/rheumatology/kev365
Advance Access publication 13 October 2015

IgG4-related disease associated with renal vasculitis mimicking polyarteritis nodosa revealed polycythaemia.

Sirs, In this report, we describe the first case of IgG4-related disease (IgG4-RD) revealed by renal involvement mimicking polyarteritis nodosa with secondary polycythaemia. A 60-year-old Tunisian man was admitted for suspicion of primary SS (pSS) based on sicca symptoms and bilateral parotid gland swelling. His medical history was characterized by high blood pressure and type 2 diabetes. He presented with xerostomia and, for several weeks, unusual headache. Clinical examination revealed Schirmer’s test <5 mm in both eyes, keratoconjunctivitis sicca, painless swollen parotid glands, cervical lymphadenopathy and palmar erythrosis. Biological tests showed polycythaemia, with a haemoglobin level of 20.6 g/dl, haematocrit 60%, 225 000 platelets/mm³, 6180 leucocytes/mm³, including 1220 lymphocytes/mm³. Mutations in the JAK2 V617F gene and exon 12 were not found. The erythropoietin (EPO) level, expected to be very low due to polycythaemia, was within the normal range: 6.3 IU/l (normal 5–25). Creatininemia was normal (87 µmol/l) with a glomerular filtration rate (Modification of Diet in Renal Disease method)
estimated at 78 ml/min/1.73 m², with no proteinuria and no haematuria. Other biological examinations showed hyper-
gamma-globulinemia (21 g/l), normal serum free light chain
κ/λ ratio, low C4 level (0.12 g/l; normal 0.18–0.42), but normal C3 level. RF was positive at 189 IU/ml, as well as ANA at 1/320, without specificity. The cryoglobin tests were negative. HIV, HBV and HCV serologies were negative. Labial minor salivary gland biopsy (MSGB) showed lymphocytic sialadenitis with a focus score of 1.32 without any germinal centre. A computed tomography (CT) scan showed bilateral defects in renal perfusion, associated with micro-aneurysms, without other aortic and periaortic disease (Fig. 1A). Positron emission tomography-CT showed a diffuse abnormal accumulation of ¹⁸F-fludeoxyglucose in the kidneys. Renal arteriography confirmed the presence of micro-aneurysms and multiple renal infarctions suggestive of polyarteritis nodosa (PAN)-like renal involvement (Fig. 1B). Renal biopsy was not performed because of the haemorrhagic risk linked to micro-aneurysms.

IgG4-related disease was suspected because of the parotid gland swelling in a 60-year-old man with multi-
systemic manifestations. Diagnosis was confirmed by an increase in the IgG4 serum level to 3.70 g/l (normal 0.04–0.86) and a high IgG4+/IgG+ plasma cell ratio (80%) on histological and immunohistochemical examinations of the MSGB (Fig. 1C–E) and parotid gland. Cervical lymph node biopsy showed an aspect of lymphadenitis with an IgG4+/IgG+ plasma cell ratio of 50%.

Glucocorticoids were initiated with prednisolone at a dose of 1 mg/kg body weight/day. Two phlebotomies were necessary to decrease the haematocrit level to <50%. At 6 weeks, his general health and haemoglobin level were normalized (14 g/dl) without any additional phlebotomy. Parotid gland swelling had decreased by 50%. At 6 months, rituximab was initiated at a dose of 1 g 2 weeks apart as a corticoid-sparing agent, because of relapsing parotid gland swelling with a dosage <10 mg/day.

(A) Abdominal CT showing infiltration of the renal parenchyma and multiple renal infarctions. (B) Renal arteriography showing the presence of micro-aneurysms (arrows) and kidney ischaemic lesions with multiple renal infarctions (stars). (C) Minor salivary gland biopsy showing dense periductal lymphoplasmacytic infiltrate on haematoxylin and eosin saffron staining (HES, 400×). Immunostaining for (D) IgG and (E) IgG4 (400×). The majority of IgG⁺ plasma cells express IgG4.
IgG4-RD is defined by histopathological analysis of biopsy specimens showing lymphoplasmacytic infiltrate rich in IgG4+ plasma cells that is organized in a storiform pattern [1]. An IgG4+/IgG+ plasma cell ratio >40% is mandatory for histodiagnostic diagnosis of IgG4-RD. In our observation, swelling parotids in a 60-year-old man suffering from xerostomia and the absence of anti-SSA and anti-SSB antibodies was suggestive of IgG4-RD [2].

In this case, renal PAN-like disease with micro-aneurysms and renal infarction was confirmed by arteriography. In the literature, IgG4-RD arterial lesions may occur, but are located in the thoracic aorta, abdominal aorta to iliac arteries, superior mesenteric artery, inferior mesenteric artery and splenic artery [3]. IgG4-RD may also manifest as idiopathic retroperitoneal fibrosis, inflammatory aortic aneurysm and inflammatory pericarditis [4]. Otherwise, tubulo-Interstitial nephritis is the most dominant feature of IgG4-RD kidney involvement and may cause acute or chronic renal dysfunction, although some glomerular lesions such as membranous nephropathy are sometimes found [5, 6]. To our knowledge, PAN-like renal involvement has never been described in IgG4-RD. Interestingly, in a recent review, Saeki et al. [5] stated that most common findings of renal involvement are multiple low-density lesions seen on enhanced CT scans, but our observation is the first to describe micro-aneurysms confirmed by renal arteriography.

Moreover, our patient presented with polycythaemia probably due to non-adapted secretion of EPO, in the absence of JAK2 mutations. It is probable that this EPO abnormal secretion was due to IgG4-RD renal involvement, but this hypothesis could not be demonstrated since a renal biopsy was not performed because of the haemorrhagic risk. Normalization of the haemoglobin level with steroid therapy favours this hypothesis [7]. However, renal imaging favoured renal infarction. We hypothesized that renal interstitial macrophages stimulated local renal EPO-producing cells. Interestingly, it was recently demonstrated that renal EPO-producing cells could also be responsible for fibrosis synthesis [8]. Therefore these cells could be responsible for both renal fibrosis, a key feature in renal IgG4-RD, and the increased EPO production found in our patient. IgG4-RD is a systemic disease with pleomorphic manifestations, including renal PAN-like disease complicated by symptomatic secondary polycythaemia.

**Funding:** No specific funding was received from any funding bodies in the public, commercial or not-for-profit sectors to carry out the work described in this article.

**Disclosure statement:** The authors declare no conflict of interest.

François-Xavier Danlos1, Fadela Daoued-Keffi1, Julien Rohmer1, Guillaume Cluzel2, Estelle Blanc-Autran3, Hélène François4, Thierry Lazure5, Raphaelle Seror5,6 and Xavier Mariette1,5,6

1Service de rhumatologie and 2Service de radiologie, Hôpital Bicêtre, Le Kremlin Bicêtre, 3Service de médecine nucléaire, Centre Chirurgical Marie Lannelongue, Le Plessis-Robinson, 4Service de néphrologie and 5Service d’anatomopathologie, Hôpital Bicêtre, Le Kremlin Bicêtre, France

Revised version accepted 2 September 2015

Correspondence to: François-Xavier Danlos, Hôpitaux Universitaires Paris-Sud, Assistance Publique des Hôpitaux de Paris, Hôpital Bicêtre, Service de Rhumatologie, 78 rue du Général Leclerc, Le Kremlin Bicêtre 94275, France. E-mail: xavier.mariette@bct.aphp.fr

Raphaëlle Seror and Xavier Mariette contributed equally to this study.

**References**


Rheumatology 2016;55:382–384
doi:10.1093/rheumatology/kev371
Advance Access publication 15 October 2015

**A case of relapsing and refractory catastrophic anti-phospholipid syndrome successfully managed with eculizumab, a complement 5 inhibitor**

**Rheumatology key message**

- In patients with refractory catastrophic APS, eculizumab may be a useful and cost-effective alternative.

Sir, Catastrophic anti-phospholipid syndrome (CAPS) is the most severe and rare form of APS, presenting with acute multiple-organ involvement, small-vessel thrombosis and visceral damage [1]. We present a case of CAPS that was refractory to conventional therapy. For the sake of clarity, our patient’s platelet counts over the years are represented in Fig. 1.