Granulomatosis with polyangiitis presenting as a renal mass successfully treated with rituximab

Sirs,

Granulomatosis with polyangiitis (GPA) is a granulomatous disorder usually associated with vasculitis involving the small and medium-sized blood vessels that affects the upper and lower respiratory tracts and the kidneys, but almost any organ can be targeted (1). The typical renal involvement of GPA consists of a segmental necrotising glomerulonephritis, but, very rarely, renal disease could appear as an isolated or bilateral renal mass, requiring a differential diagnosis from neoplasms or granulomatous infections (2-4). We describe a patient who, during tests for a kidney mass, was found to have pulmonary nodules suspected to be metastasis, successfully treated with rituximab (RTX).

A 38-year-old man presented with a two month history of low grade fever, migrant arthro-myalgias and dry cough. Initial antibiotic treatment was unsuccessful. Chest x-rays and clinical evaluation of lung, ear, nose and throat were normal. Laboratory tests showed neutrophilic leukocytosis, C-reactive protein was 12.4 mg/dl (n.v. <0.5mg/dl) and antinuclear autoantibodies 1:80.

Over the following weeks the patient developed progressive loss of both conductive and sensorineural hearing, confirmed by audiometric curve and a CT scan which revealed massive opacification of the middle and inner ear. No bloody rhinitis was observed. Further evaluation with ultrasound of the abdomen revealed a solid, non-homogeneous mass in the left kidney (63x34 mm), confirmed by a subsequent abdominal CT scan (Fig. 1-A). A high resolution CT scan of the chest showed pulmonary micronodules in the right upper lobe and the left lower lobe. Whole-body positron emission tomography showed enhancement of the renal mass and of the pulmonary nodules. To exclude the hypothesis of underlying infection the following serological tests were performed resulting as negative: quantiferon test, HIV, EBV, HCV, HBV, CMV, Parvovirus B-19, Treponema Pallidum, Brucella, Borrelia, Salmonella and Schistosoma. A kidney neoplasia with pulmonary metastasis was suspected and a CT-guided biopsy of the left renal mass was performed. The histology revealed marked inflammation with foci of geographic basophilic necrosis and scattered multinucleated giant cells, but without well-formed granulomas or signs of glomerular vasculitis. Immunofluorescence assay for ANCA was found to be positive in a cytoplasmic (C-ANCA) pattern, with antibody specificity for proteinase-3 detected by enzyme-linked immunosorbent assay (49 UI/ml; normal values: 0.0-2.0 UI/ml). Urinalysis were unremarkable, urine sediment was inactive and proteinuria absent. Based on the histology of the kidney mass, and the presence of c-ANCA, lung nodules and ear involvement, the disease was interpreted as GPA. Treatment began with prednisone 48 mg per day. The patient refused proposed treatment with cyclophosphamyde owing to its gonadal toxicity. It was therefore decided to treat the patient with rituximab, two 1000-milligram doses given intravenously 15 days apart, based on the proven efficacy of this drug in GPA (5-6). Three months later, following the first cycle of Rituximab with 40 mg prednisone per day, abdominal CT showed significant reduction of the kidney mass (63x34 mm to 44x16 mm), resolution of the lung nodules and normalization of c-ANCA, CRP and ESR. Over the following months the prednisone was tapered down 4 mg every 8 days. Six months later the patient was being treated with 8 mg/day of prednisone and further reduction of the lesion (44x16 mm to 42x12 mm) was confirmed by abdominal CT scan (Fig. 1).

Rituximab is known to induce sustained remission in 64-93% of patients with ANCA-associated vasculitis in an average time of 2–6 months (5-10). The persisting left kidney mass is therefore most likely to be made up of fibrotic tissue and consequently it could be difficult to achieve a complete resolution.

Our case emphasises the importance of considering GPA in the differential diagnosis of a kidney mass. Furthermore, rituximab resulted in significant clinical and radiological improvement and it could be considered a valid therapeutic option in renal granulomatous masses in GPA.

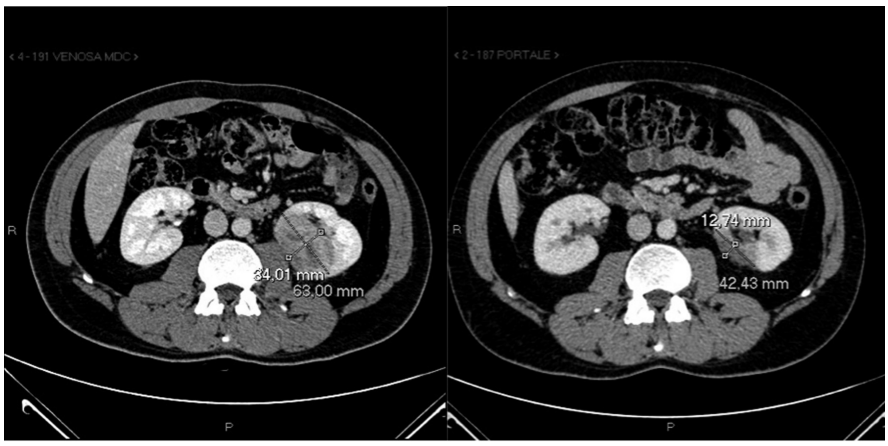

Fig. 1. Renal mass before and after therapy.
Panel A: Axial post-contrast portal phase at time 0 shows a heterogeneus hypoattenuating tumour in left kidney with transverse diameters of 63x34 mm; the lesion has discrete contrast enhancement (medium density 81 HU) with areas of necrotic degenerations inside.
Panel B: Axial post-contrast portal phase after 6 months shows dimensional reduction of the solid mass in left kidney with transverse diameters of 42x12 mm; the lesion is more homogeneous due to the reduction of the contrast enhancement (medium density 51 HU) and of the dimensions of the necrotic areas inside.

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