Kidney biopsy is mandatory in cases of *silent* arterial hypertension in scleroderma renal crisis: a case report

Sirs,

Scleroderma renal crisis is classically characterised by a rapid and progressive renal failure associated with malignant hypertension, and occurs in 5–10% of the patients with diffuse systemic sclerosis (SSc) (1-3). Therapy with angiotensin-converting enzyme (ACE) inhibitors is mandatory, leading to stabilisation of the renal failure, decreasing mortality significantly, from 76% to 15% in the first year (4-6).

Nevertheless, it has been described some "silent" cases, without the characteristic malignant hypertension. This atypical clinical presentation can delay the diagnosis, and consequently the treatment with ACE-inhibitors, leading to an increased mortality (3, 7).

In December 2008, a 45-year-old white female with diffuse SSc was attended in our institution. She was previously treated with prednisone 40 mg/day, without improvement. The BP was 130 x 90 mmHg and laboratory tests were normal, with a positive antinuclear antibody (ANA) (1/160, speckled pattern). She was prescribed cyclophosphamide and prednisone was tapered. After 17 monthly infusions, she presented hemorrhagic cystitis, and cyclophosphamide had to be substituted by azathioprine 150 mg/day. Her BP stayed at a normal range during the entire treatment.

In May 2011, the patient presented a rapid decrease in renal function (creatinine = 4.66 mg/dL), associated with BP of 150 x 90 mmHg, and was hospitalised. Lab tests revealed no haemolytic anaemia, plaquetopenia, proteinuria or haematuria, with negative anti-dsDNA and ANCA, and positive anti-RNA polymerase III. Renal Doppler ultrasonography showed no stenosis of renal arteries. Although the patient normalised BP with captopril 100 mg/day, the progressive renal failure continued, and haemodialysis was initiated. A kidney biopsy was performed, confirming SRC (Fig. 1).

The patient was discharged on haemodyalisis, using captopril 150mg/day and mycophenolate mophetil 1.5g/day. After 3 years of dyalisis, she is clinically stable and the possibility of kidney transplantation is under discussion.

Several factors can be predictors of SRC, for example: disease duration ≤4 years, myopathy, digital ulcers, rapid skin thickening and positivity of anti-RNA polymerase III antibodies (3, 7). The use of prednisone ≥15 mg/day is also implicated as a "trigger" for SRC (1, 3, 8, 9).

Despite being an important clinical manifestation of SRC, arterial hypertension can be absent in around 10% of the patients (3). It can be speculated that many of these "normotensive" patients in fact present an elevation of the blood pressure levels, but within the normal range (1, 10). Other hypotheses were postulated to explain the normotensive SRC, like concomitant cardiac disease leading to hypotension, previous use of corticosteroids, and mild activation of the angiotensin-renin axis, but none were confirmed (10). The present patient presented with a predominantly normotensive course, with occasional situations of slightly elevated BP, while on ACE-inhibitors. As there are no evidences that ACE inhibitors are able to prevent SRC (5, 6), and as they could be the cause of normotensive SRC, they should be used carefully in patients with SSc without SRC who present risk factors for SRC.

Considering that an atypical clinical presentation can determine a late diagnosis, increasing the likelihood of requiring permanent haemodyalisis (85% of normotensive SRC *vs*. 50% of hypertensive) (5), the kidney biopsy can represent an important tool to confirm the diagnosis of SRC and exclude other causes of renal failure (3, 7, 10). The presence of obliterating endarteritis with onionskin appearance, narrowing of arterioles and glomerular ischaemia, without inflammatory changes or immune deposits, are characteristics of SRC (5). For diagnostic purpose in this patient presented here, kidney biopsy was fundamental to establish the diagnosis of SRC. It also helped to distinguish SRC from ANCA-associated glomerulonephritis, which has been reported in SSc, and should be treated with high doses of steroids and imunossupression (6). The early diagnosis and the subsequent start of the therapy with ACE-inhibitors are key for the success of the treatment of SRC.

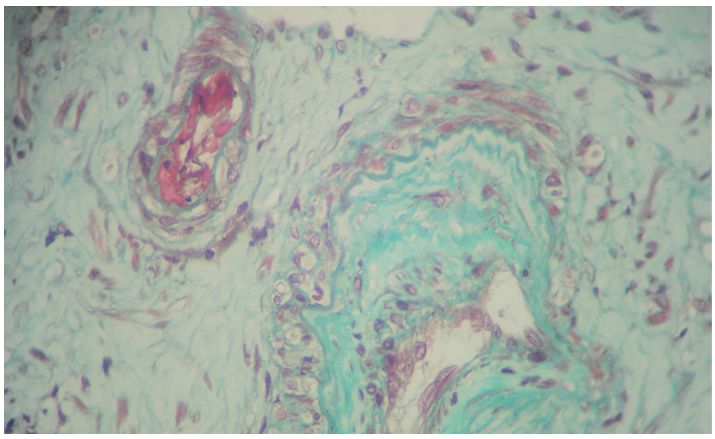

Fig. 1. Masson tricrome, 400x: arteriolar fibrinoid necrosis and intimal fibrosis in interlobular artery.

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