Normocalcaemic Nephrocalcinosis in Sarcoidosis

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Dear Sir,

Renal failure is uncommon in sarcoidosis [1] and is mainly due to hypercalcaemia [2]. Other rare causes described are granulomatous interstitial inflammation and various types of glomerulonephritis. We report a case of severe renal failure in sarcoidosis in which, despite normocalcaemia and lack of renal calcification on X-ray, renal biopsy showed diffuse nephrocalcinosis. Creatinine clearance and hypercalciuria returned to normal following treatment with oral prednisolone.

A 37-year-old man was referred in 1983 for investigation of renal failure. He had been investigated 4 years previously because of urinary calculi, at which time serum calcium was normal (2.21 mmol/l) and blood urea minimally elevated (7.8 mmol/l). In 1982 sarcoidosis had been diagnosed based on bilateral hilar adenopathy, non-caseating granulomata on supraclavicular lymph node biopsy, and a positive Kveim test. Other investigations in 1982 showed normal serum calcium (2.65 mmol/l), normal serum phosphate (0.9 mmol/l) and mild impairment of renal function (blood urea 15.4 mmol/l, serum creatinine 146 µmol/l, creatinine clearance 72 ml/min). Intravenous pyelogram showed no abnormal findings. In 1983 he was re-admitted to hospital because of nausea and vomiting. He was found to have hypertension (190/140), early pulmonary fibrosis, abnormal liver function tests and progressing uraemia (blood urea 21.6 mmol/l, serum creatinine 373 µmol/l, creatinine clearance 32 ml/min). Significant hypercalciuria was present (14.9 mmol/24 h), but serum calcium was normal (2.3 mmol/l) as were serum phosphate (0.87 mmol/l) and serum parathyroid hormone (0.2 µg/l), intravenous pyelogram showed only a small stone in the left kidney with no associated scarring, obstructive changes or nephrocalcinosis. Pulmonary function tests showed moderately reduced diffusion, normal spirometry and lung volumes.

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Fig. 1. Calcium deposits in tubular epithelium. Von Kossa.
×375.

In view of his progressive renal failure, oral prednisolone, 20 mg daily, was commenced in addition to anti-hypertensive treatment with atenolol 50 mg and cyclophen-thiazide 0.5 mg daily. Percutaneous renal biopsy showed nephrocalcinosis and mild interstitial fibrosis (fig. 1), with no

evidence of a glomerular lesion, vasculitis, granulomata or hypertensive nephrosclerosis. Four weeks after commencing treatment, repeat renal function tests showed creatinine clearance 67 ml/min, serum creatinine 164 $\mu\text{mol/l}$, proteinuria 0.18 g/24 h, serum urea 11.9 mmol/l. Serum calcium remained normal (2.59 mmol/l) and urine calcium excretion had fallen to within the normal range (6.1 mmol/24 h). Serum phosphate and serum parathyroid hormone were both within the normal range. After a further follow-up period of 12 months to date, creatinine clearance measures 114 ml/min, serum creatinine 118 $\mu\text{mol/l}$ and serum urea 9.0 mmol/l. Liver function tests remain mildly abnormal and pulmonary function tests are unchanged.

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We have been able to find only 1 other case in the literature where renal failure has occurred in sarcoidosis due to diffuse nephrocalcinosis despite absence of hyper-calcaemia [3] and radiologically evident renal calcification.

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References

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