Dear Sir,

Pulmonary lymphangitis carcinomatosa, caused by diffuse metastatic infiltration of pulmonary lymphatics, is a rare cause of dyspnoea, especially in the young [1]. Diagnosis is often very difficult when patients present with progressive dyspnoea and pulmonary infiltrates in the absence of a known primary tumour. We present an instructive case.

A 33-year-old man presented with a 2-month history of dry cough, progressive dyspnoea, malaise and weight loss. He had a past history of heavy smoking and gastric ulceration. On examination, he was unwell and dyspnoeic (respiratory rate 28/min), with a pulse of 100/min and temperature of 37.3 °C. Inspiratory crepitations were heard in both lung bases and the midzones. The abdomen was mildly tender with voluntary guarding, and a tender spleen was palpable 3 cm below the costal margin. Ward urinalysis showed 2+ proteinuria.

Initial investigations revealed plasma creatinine 0.14 mmol/l (1.6 mg/dl), urea 8.7 mmol/l (24 mg/dl), normal electrolytes and liver function tests (apart from an alanine aminotransferase of 75 IU/l; normal < 55). Haemoglobin was 123 g/l (12.3 g/dl), white cell count 11.3 × 10^9 with neutrophilia and mild left shift, platelet count 249 × 10^9 and erythrocyte sedimentation rate 42 mm/h. Arterial pH was 7.48, pO2 6.5 kPa (49 mm Hg), pCO2 4.6 kPa (33 mm Hg) and bicarbonate 25 mmol/l. Urinary microscopy showed 16,000 white cells/ml, 25,000 glomerular red cells/ml and 14,000 casts/ml (comprising granular casts and hyaline casts variously containing red cells, epithelial cells and granules). Urinary protein excretion was 0.73 g/day (normal < 0.15). The chest X-ray was reported as showing widespread interstitial lines and nodules with prominent Kerley lines and hilar adenopathy. Over the following 2 days, the patient’s condition deteriorated inexorably. An attempt at bronchoscopy and biopsy had to be abandoned due to acute arterial oxygen desaturation. Empirical treatment with prednisolone 100 mg daily was commenced. In view of the marked abnormalities in renal function and urine microscopy and the desire to avoid the hazards of lung biopsy, a percutaneous renal biopsy was carried out.

Preliminary examination of the histology showed mild patchy interstitial fibrosis and tubular degeneration. An urgent open-lung biopsy was then performed because of the patient’s rapid and relentless deterioration with progressive hypoxia and the frozen section showed lymphangitis carcinomatosa. The patient continued to deteriorate, suffered on hypoxic asystolic arrest and died.
Subsequent examination of deeper levels of the renal biopsy showed infiltration of lymphatic spaces with adenocarcinoma cells (fig. 1). The lung biopsy showed lymphatic infiltration by a mucin-secreting adenocarcinoma most likely to be of gastric origin (fig. 2). The dangers of open-lung biopsy would have been avoided if the renal biopsy had been performed early enough to allow thorough examination of all levels before the patient’s clinical state deteriorated.

Renal metastases are seen in between 2 and 20% of autopsies of those with disseminated, usually haematological, malignancy [2]. Renal lymphatic invasion found at autopsy in disseminated gastric carcinoma has been well described [3] and was, in fact, useful in early studies of renal lymphatic anatomy [4]. Renal failure due at least in part to renal metastases has been described in at least 5 cases [5]. Most cases of malignant lymphatic invasion of the kidney are detected at autopsy and, to our knowledge, such microscopic invasion has not been reported in renal biopsy tissue obtained during life.

This case demonstrates that malignant infiltration of renal lymphatics can result in significant renal impairment, proteinuria and abnormalities of the urinary sediment. In patients with undiagnosed pulmonary infiltrates whose respiratory state makes lung biopsy hazardous, abnormal urinary sediment and renal impairment may suggest renal involvement. In this setting, renal biopsy may offer a safer avenue to diagnosis.

Fig. 1. A group of adenocarcinoma cells in a renal lymphatic. Fig. 2. Groups of adenocarcinoma cells lying within peribronchial lymphatics. Silver Masson. × 220. HE. × 220.

References

