Nephrol Dial Transplant (1999) 14: 1574–1575

Nephrology
Dialysis
Transplantation

Case Report

Angiomyolipoma in a transplanted kidney

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Key words: angiomyolipoma; kidney; transplant

Introduction

Transplantation of organs from donors with occult tumours is well recognized [1], with an appreciable risk of transfer of the malignancy to the recipient [2]. We present a unique case with 5-year follow-up of a patient who received a cadaveric renal transplant containing an angiomyolipoma.

Case

A 60-year-old male with chronic renal failure following an episode of severe acute tubular necrosis received a cadaveric renal transplant in June 1993. The donor was a 67-year-old female who had died from a subarachnoid haemorrhage. The transplanted organ appeared macroscopically normal. Intraoperatively routine subcapsular wedge biopsy was performed at the site of a small tear in the renal capsule. Postoperatively the patient was commenced on triple immunosuppressive therapy of cyclosporin (5 mg/kg), azathioprine (2 mg/kg), and prednisolone (20 mg). The wedge biopsy measured $0.8 \times 0.3 \times 0.3$ cm. It was composed entirely of tumour, with no normal renal tissue included. The tumour consisted of multiple abnormal vessels, the walls of which merged with sheets of spindle cells. Immunohistochemistry showed positivity for α-smooth muscle actin (α-SMA). Scattered adipocytes were present throughout the tumour and the histological features were typical of an angiomyolipoma (Figure 1). Tumour extended into all margins of excision and it was evident that only a small part of the lesion was present in the biopsy. An ultrasound scan of the transplant kidney revealed a single echogenic focus, 4 mm in diameter, anteriorly beneath the renal capsule. These appearances were consistent with either a post-biopsy haematoma or residual tumour. No other focal lesions were identified. The findings were discussed with the patient. As small angiomyolipomas usually remain asymptomatic [3] and the potential for malignant transformation was known to be extremely remote it was decided not to resect the tumour. The patient was followed-up in the intervening 5 years with serial ultrasound scans and at 5 years post-transplantation remains asymptomatic with no evidence of tumour growth and a stable serum creatinine of 170 μmol/l.

Discussion

Angiomyolipoma is a rare and benign renal tumour, accounting for approximately 1% of surgically resected renal neoplasms [4]. They are usually single and unilateral, but multiple, bilateral lesions are commonly found, in particular in association with the syndrome of tuberous sclerosis [5]. Symptoms include haematuria, loin pain, palpable mass, and frank intra-renal haemorrhage presenting as loin pain or shock, although small lesions less than 4 cm in diameter are usually asymptomatic [3]. They have a rare sarcomatous transformation potential; several cases with pleomorphism and intravascular growth having been misinterpreted as representing malignant transformation [6]. Ultrasound scanning will pick-up most lesions because of their marked echogenicity [7].

To our knowledge transplantation of a kidney containing an angiomyolipoma with follow-up has not previously been reported in the literature. There have been two previous reports of angiomyolipoma in transplant kidneys [8,9]. In one case [8] the kidney was removed early post-transplant following an incidental finding of possible malignancy on routine biopsy and the tumour was subsequently found to be an angiomyolipoma. The second case [9] was an incidental finding on post-mortem examination. Other authors have reported transplanting a kidney following resection of an angiomyolipoma from the donor kidney immediately prior to transplantation [10]. Balligand *et al.* [11] have reported the case of a patient with tuberous sclerosis and angiomyolipomas in the native kidneys

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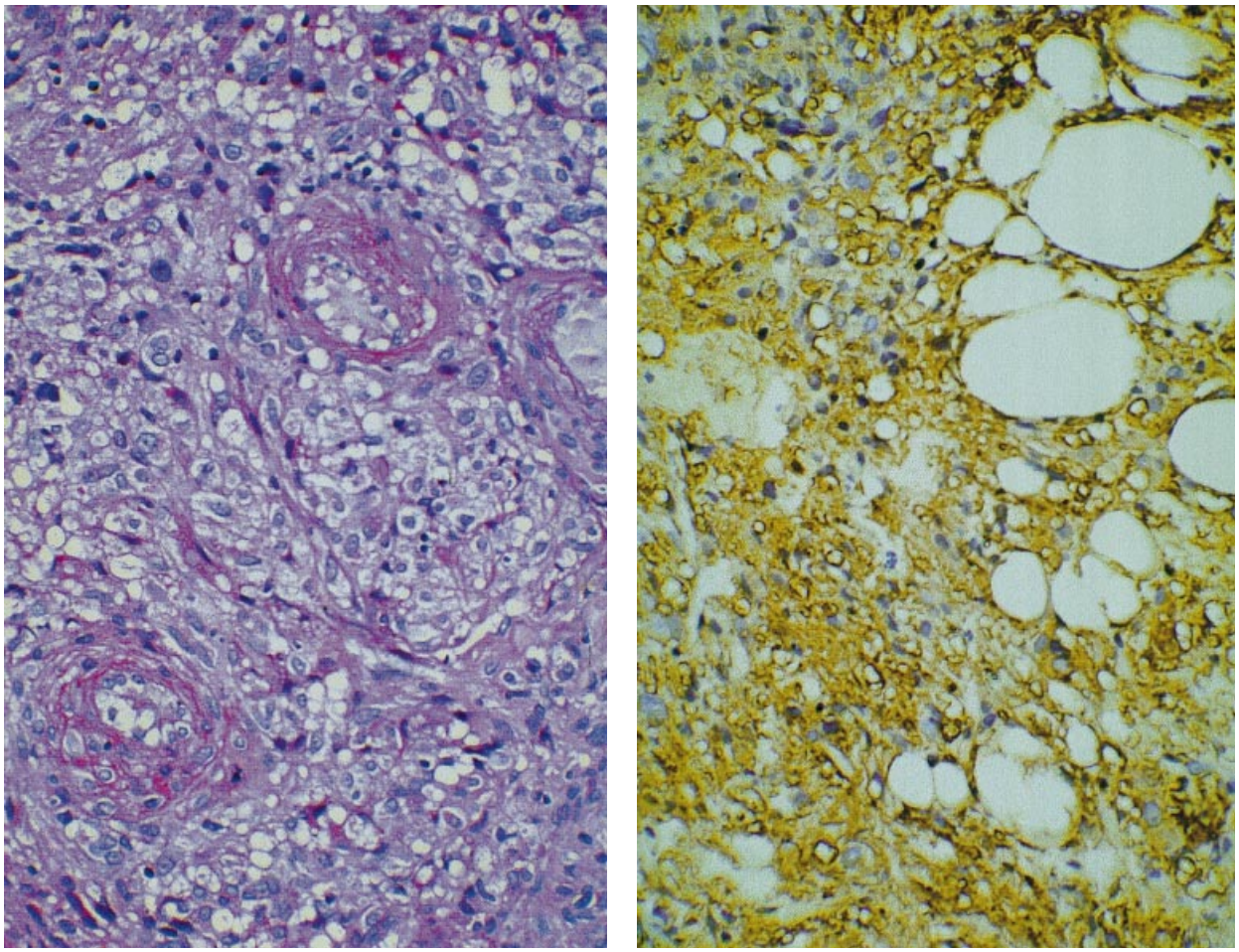

(a) (b)

Fig. 1. (**a**) Histology of the biopsy taken at the time of transplantation, showing abnormal vessels with surrounding plump spindle cells (PAS). (**b**) Immunohistochemistry for α-SMA shows positivity within the spindle cells. Scattered adipocytes are also present.

who received a cadaveric renal transplant. At 7 years follow-up the patient remained well with no adverse effects from her native kidneys. We felt that any risk to our patient from leaving the tumour in situ was very small, and that with regular follow-up with ultrasound scans any potential problems could be readily anticipated. Whilst a large, symptomatic, or growing mass should be explored, it is justified to leave a small, biopsy-proven angiomyolipoma in situ.

References

1. Kulien L, Poll R, Peto I. The incidence of tumor in human transplant recipients. *Transplant Proc* 1983; 15: 1039–1042
2. Wilson RE, Penn I. Fate of tumors transplanted with a renal allograft. *Transplant Proc* 1975; 7: 327
3. Oesterling JE, Fishman EK, Goldman SM, Marshall FF. The management of renal angiomyolipoma. *J Urol* 1986; 135: 1121–1124
4. Brecher ME, Gill WB, Strauss FH. Angiomyolipoma with regional lymph node involvement and long-term follow-up study. *Hum Pathol* 1986; 17: 962–963
5. Monteforte WJ, Kohnen PW. Angiomyolipomas in a case of lymphangiomyomatosis syndrome: relationship to tuberous sclerosis. *Cancer* 1974; 34: 317
6. Enzinger FM, Weiss SW. Soft Tissue Tumors, 3rd edn. Mosby, St. Louis USA, 1995; 405–409
7. Hartmann DS, Goldman SM, Freedman AC, Davis CJ, Madewell JE, Sherman JL. Angiomyolipoma, ultrasonic–pathologic correlation. *Radiology* 1981; 139: 451–458
8. Colman P, Gray DWR, Dunnill M, Morris PJ. Angiomyolipoma masquerading as malignancy in renal transplantation. *Nephrol Dial Transplant* 1993; 8: 642–643
9. Mosunjac M, Scukanec-Spoljar M, Popovic-Uroic T, Manojlovic M. Angiomyolipoma in the transplanted kidney. A case report. *Tumori* 1992; 78: 52–54
10. Bissada NK, Bissada SA, Fitts CT, Rajagopalan PR, Nelson R. Renal transplantation from living related donor after excision of angiomyolipoma of the donor kidney. *J Urol* 1993; 150: 174–175
11. Balligand J-L, Pirson Y, Squifflet J-P, Cosyns J-P, Alexandre GPG, Ypersele de Strihou, C van. Outcome of patients with tuberous sclerosis after renal transplantation. *Transplantation* 1990; 49: 515–518

Received for publication: 18.1.99
Accepted: 28.1.99