Case Report

Incidental solid renal mass in a cadaveric donor kidney

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ABSTRACT

The number of patients living with end-stage renal disease (ESRD) is increasing in our country and demand for renal grafts is ever increasing. Cadaver renal transplantation is being established as a viable supplement to live transplantation. We present a case where a mass lesion was encountered in the donor kidney from a cadaver. Enucleation of the lesion was done and we proceeded with the grafting. Histopathological examination showed a 'Renomedullary interstitial cell tumour', a rare benign lesion. Post transplant, the renal function recovered well and the patient is asymptomatic. Such incidental renal masses present an ethical dilemma to the operating surgeon.

Key words: Benign renal mass, cadaver renal transplant, renomedullary interstitial cell tumour

INTRODUCTION

Cadaver renal transplantation is fast becoming an important modality in the management of end-stage renal disease (ESRD), in India. In the present scenario it is imperative that we improve the donor pool, such that more chronic kidney disease patients are benefited. The existing renal malignancy is a contraindication for renal transplantation, but data regarding graft kidneys with suspicious solid renal masses are not widely available. We present a case wherein an incidental renal mass was encountered during cadaver transplantation.

CASE REPORT

A 50-year-old man with a history of road traffic accident (RTA) was admitted to Intensive Care Unit (ICU) and declared brain dead. Formal consent for organ donation was obtained from the relatives and organ harvesting was done. Under the organ sharing network, a suitable recipient was selected. The liver, both kidneys, and both corneas were harvested. Our institution received the left kidney. A 36-year-old, same blood group, lady was identified as the optimal match. Cross-matching was 10 – 15% negative. Routine evaluation of the recipient was done. During bench dissection of the donor kidney, a 1.5 x 2 cm firm to hard nodule was palpable in the mid zone of the graft. Complete back table dissection was completed. C-arm screening was done and no radio opaque lesion was seen. As the cadaver transplantation was done in odd hours, frozen section facilities were not available. As the lesion was found in the mid zone of the graft kidney, partial nephrectomy was not attempted and we proceeded with enucleation of the solid lesion. The lesion was 5 mm deep to the capsule. There was no communication seen with the pelvicalyceal system. The nephrotomy wound was closed with absorbable sutures and the kidney was grafted to the recipient [Figure 1]. Post-operative recovery was uneventful and urine output improved to 150 - 200 ml / day from post operative day two. Serum creatinine touched a nadir value of 0.9 mg% on the fifth postoperative day. Donor autopsy was done and no evidence of any other malignant lesions or lesions suggestive of metastasis was found. The specimen histopathology proved it to be 'Renal medullary fibroma' or 'Renomedullary interstitial cell tumour', a benign lesion of the renal medulla [Figure 2]. Renal imaging with a plain CT scan done two months postoperatively, found no lesion in the kidney. A graft kidney ultrasonogram was also done, which found no suspicious lesion. The recipient is on follow-up for three months and is asymptomatic.

DISCUSSION

Ideal management of ESRD in a suitable patient is renal transplantation.[1] Although the number of live and cadaver

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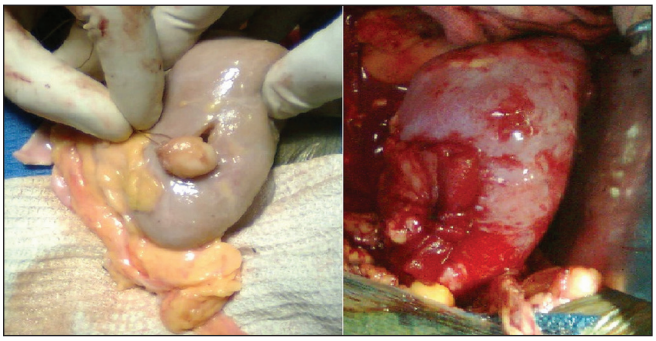

Figure 1: The lesion being enucleated and nephrotomy closed

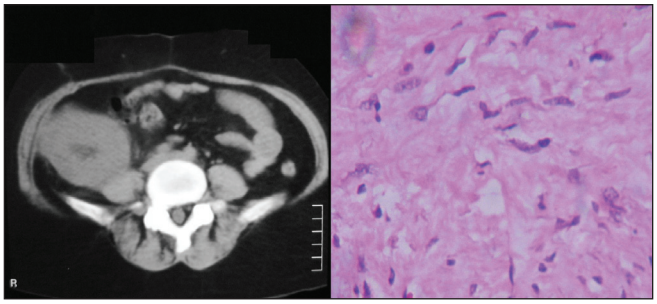

Figure 2: Postoperative CT and histopathological picture of the lesion

renal transplants have increased in recent years, there continues to be a significant deficit.[2] The increase in the donor pool is not able to match the ever increasing population with ESRD and many patients die each year waiting for a suitable graft. The presence of malignancy in a renal graft is considered to be a contraindication to renal transplantation. There are many studies that have studied the use of kidneys with incidental detected renal masses in renal transplantation.[2] Our decision in this case to go ahead with the transplantation of the graft after enucleation was due to the small size of the lesion, its grossly benign appearance, and to give the recipient a better chance of survival and quality of life.

Sener. A *et al*., in July 2009, reported a series of five cases where < 2.3 cm incidental renal masses were subjected to back table partial nephrectomy and transplanted into the matched recipients. Three of these lesions were renal cell carcinoma and two were angiomyolipoma. There was no evidence of cancer-specific mortality or recurrence at a 15-month follow-up. McHayleh *et al*.,[3] in 2008, reported two cases of metastasis from renal cell carcinoma in a kidney allograft. Hence, many articles have been published regarding the use of grafts with renal malignancies. However, data on the management of benign renal masses in donor kidneys are few.

Renomedullary interstitial cell tumour is a common autopsy finding in patients over 50 years, being found in about 30% of this group.[4] These lesions are usually round to oval, pale gray to yellow with a mean size of 3 mm. They are frequently located in the renal medulla and often escape clinical detection. Clinically symptomatic tumours are rare. The term 'Renomedullary interstitial cell tumour' was coined by Lerman *et al*., in 1972.[5] The previous terminology used was 'Renal medullary fibroma'.

The finding of a discrete renal mass during bench dissection for a cadaveric renal transplant raises many questions. Forty to fifty percent of renal masses less than 2 cm in size are benign. These small renal masses in the donor kidney should be investigated rather than rejected. Meticulous back table dissection and subsequent histopathological confirmation are necessary when such kidneys are transplanted. Immunosuppressive therapy is known to increase the incidence of malignancy after transplantation. Hence, such transplant recipients should be diligently followed up to look for recurrence of renal masses and also for occurrence of metastasis.

This situation also brings up the case of the need for imaging studies like a contrast-enhanced CT, for the evaluation of potential cadaveric donors. In some cases, it may not be possible to shift the brain dead donor with all supports to the CT room. Hence, at least a bedside ultrasound may add to our preoperative assessment of the kidney. Incidentalomas like in our case could have been picked up on imaging and the surgical team was better prepared to deal with the situation. Therefore, routine imaging studies like the CT or ultrasound may be advocated for all potential cadaveric donors, preoperatively.

The increase in ESRD population calls for novel methods to improve the donor pool. The increase in the use of imaging studies for a variety of abdominal conditions has increased the rate of detection of small clinically insignificant renal masses. These kidneys could be considered as potential grafts, rather than rejecting them altogether.

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