



Outcome of Renal Transplantation in Patients With Renal Calculus Disease

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WESTERN INDIA is endemic for renal stone disease.¹ Renal calculus disease is a common cause of end-stage renal failure in this region. Renal insufficiency in these patients is attributed to bilateral calculi, obstructive uropathy, pyelonephritis, and uncontrolled hypertension. Few data exist regarding renal transplantation in this population. We present our experience with renal transplantation in patients with renal calculus disease.

MATERIALS AND METHODS

Between 1980 and 1998, 17 patients with a history of renal calculus disease received 18 living donor renal transplants (one patient underwent two transplants). This constituted 2.5% of the total transplant done during this period. All were men, aged 28 to 62 years (mean age 40 years). Mean duration of the disease from recognition of renal stone to end-stage renal failure was 11 years (range 3 to 20 years).

Before reaching end-stage renal failure all patients underwent multiple urologic procedures for stone removal. None of the patients had underlying urologic abnormality or primary hyperoxaluria. For control of persistent infection eight patients required pretransplant unilateral nephrectomy, whereas three patients (two

bilateral and one unilateral) required posttransplant native kidney nephrectomy. Posttransplant maintenance immunosuppression consisted of azathioprine and prednisolone in three patients and cyclosporine, azathioprine, and prednisolone in the remaining 14 patients. Six patients required treatment for rejection, which was accomplished by high-dose intravenous steroids. Graft failure was considered to have occurred when a patient resumed dialysis, received a second transplant, or died. Graft survival was calculated by Kaplan–Meier analysis.

RESULTS

Overall 1- and 5-year actuarial patient survival was 80% and 71%, respectively. During follow-up there were five deaths. Four deaths were related to infectious complications: two due to pulmonary infection; one due acute cholecystitis;

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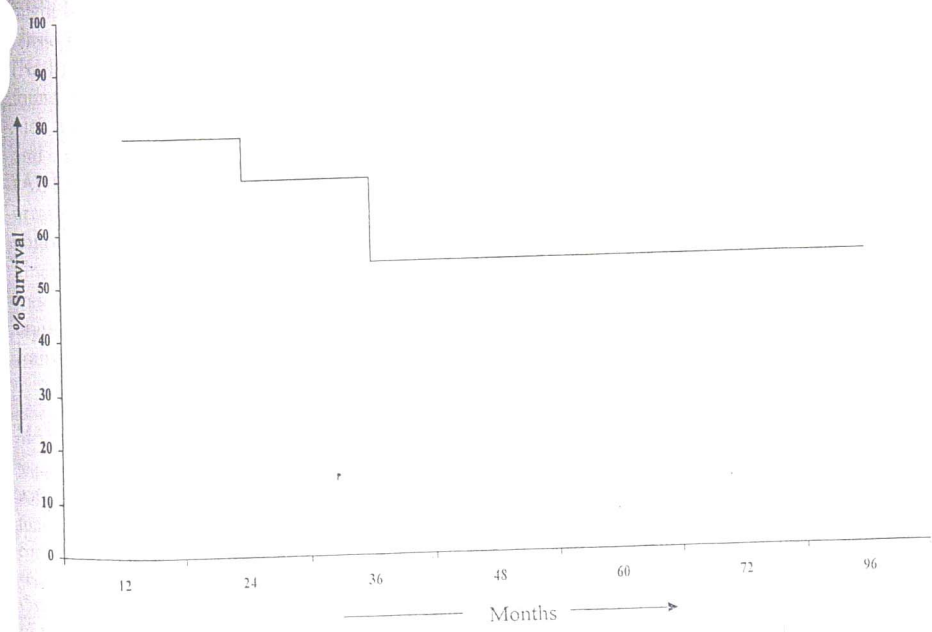


Fig 1. Kaplan–Meier survival of 18 grafts.

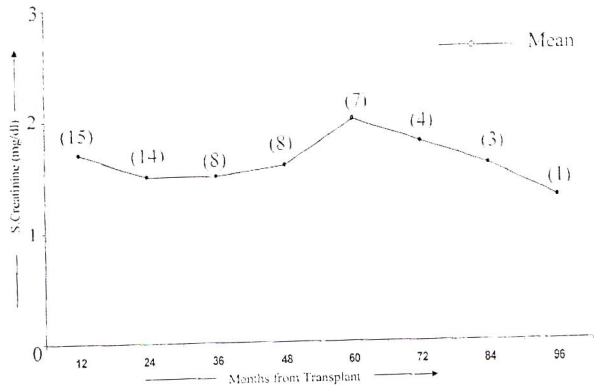


Fig 2. Graft function for all 18 grafts as average of serum creatinine at fixed intervals. Numbers in parentheses refer to number of grafts functioning at that interval.

and one due to sepsis of indeterminate origin. One patient died of massive gastrointestinal bleeding. The overall 1- and 5-year actuarial graft survival rates were 77% and 55%, respectively, as shown in Fig 1. A total of eight grafts were lost: two due to rejection; one due to graft artery thrombosis; and five due to death with functioning kidney. Long-term graft function following transplantation is shown in Fig 2. Overall graft function, as reflected by mean serum creatinine, remained stable throughout the extended follow-up period and seven grafts survived for >5 years. No patient developed recurrence of stone disease in the graft.

DISCUSSION

Despite renal stone disease being seen worldwide, end-stage renal failure has been described only infrequently.² Western India is endemic for renal stones disease. Due to the high frequency of bilateral renal stones, inadequate and often late urologic intervention, and inadequate follow-up, many patients progress to end-stage renal failure. The appropriate form of renal replacement therapy in these patients has not yet been established. This experience of renal transplantation in patients with renal calculus disease shows good graft and patient outcome in short- and medium-term follow-up. One of the concerns in renal transplantation is the possibility of recurrence of native kidney disease in the graft. We found no recurrence of stone disease in the graft even after prolonged follow-up. The native kidney often continues to harbor infection despite stone clearance. Hence, native kidney nephrectomy is often required to render the patients free of infection.

In summary, our data show that renal transplantation in patients with renal calculus disease has good short- and medium-term patient survival, graft survival, and function. There is little risk of recurrence.

REFERENCES

- Colabawalla BN: Technical Report Series No 8. Study Group in Urolithiasis. New Delhi: Indian Council of Medical Research 1971
- Vargas AD, Bragin SD, Mandez R: J Urol 127:860, 1982