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VOIDING STATUS AFTER RENAL TRANSPLANTATION WITH THE LONG-TERM ARRESTED BLADDER.

Hypothesis / aims of study

Voiding function of the patients with end-stage renal disease has been arrested for the period of anuria before renal transplantation. It will be a long time that they re-start to functional voiding after renal transplantation. It is reported that rehabilitation of defunctionalized bladder is useful for comfortable voiding function after the renal transplantation [1, 2]. However, very little is known about the recovery of voiding function in arrested bladder for long term after renal transplantation. In Japan, the number of donors for renal transplantation is a few, the recipients must be waited to be received transplantation for a long time and their bladder has been arrested for a long term. In this study, the recovery status of the voiding function was evaluated about the arrested bladder after renal transplantation.

Study design, materials and methods

Twenty-four chronic renal failure patients, 17 males and 7 femals, were performed renal transplantation and their voiding status was evaluated after the operation. The duration of hemodialysis was from 20 months to 158 months (mean: 76.8 months), and all patients was transplanted from cadaveric donor. Original disease of renal failure were chronic glomerulonephritis in 21 patients, systemic lupus erythematosus in 1 patient, polycystic kidney and unknown in 1 patient. There were 18 patients who were anuria and 6 patients who were less than 300 ml of 24-hour production of urine. All of them had no problem in neurological function. The admission period is from 46 to 130 days (mean: 71.9 days). When 24-hour production of urine was more than 1500 ml and serum creatinine was less than 4.0, patients was discharged.

Their voiding status was analyzed using the frequency - volume chart during hospitalization from the day that the first urine was produced after renal transplantation.

Results

After renal transplantation, voiding status is shown to the table. When 24-hour production of urine was less than 500ml, 24-hour frequency is from 3 to 17times (mean: 9.4 times) and nocturia was from 1 to 8 times (mean: 4.0times). Voided volume is from 37 to 138ml (mean: 65.7ml). In spite of the early stage to re-start from defunctionalized bladder, all the patients have no urinary incontinence. When 24-hour production of urine was more than 500ml and less than 1000ml, 24hr frequency is 6 to 17 times (mean: 12.1 times), nocturia is 2 to 17 times (mean: 4.7 times), voided volume is 58 to 205ml (mean: 102ml), and all the patient have no urinary incontinence. When all patients were discharged, mean voided volume is 187.6ml. At 24-hour production of urine was over than 1500ml, mean voided volume was more than 200ml on 13 of 22 patients (59.1%), and more than 300ml on 6 of 22 patients (27.3%). There is no significantly correlation between patient's age and mean voided volume. However, there was negative correlation between the duration of hemodialysis, same as the duration of bladder arrest and mean voided volume (Figure).

Interpretation of results

At the early stage to recover from defunctionalized bladder, voiding status was revealed pollakisuria except incontinence and urgency. It takes a long time to recovery of functional voiding in a long-term arrested bladder as to chronic renal failure patient. There was significant correlation between voiding function and the period of anuria.

Concluding message

These data suggest that bladder remodering may be involved during anuria.

References

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24-hour production of urine	<500ml	<1000ml
Mean 24 frequency(times)	9.4	12.1
Nocturia times	4.0	4.7
Mean voided volume (ml)	65.7	102
Urinary incontinence	no	no