

Lower Urinary Tract: an Achilles' heel for success renal transplant.

Kidney Transplantation into a bladder akin to 'coconut shell' and the nightmare that followed

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Introduction

Kidney transplantation is the preferred treatment for patients with end-stage renal disease (ESRD). Surgically, a successful renal transplant depends upon an effective arterial inflow, an obstructed venous outflow and a safe lower urinary tract. The lower urinary tract is often not thoroughly investigated. Unknown etiology of ESRD, and oligo-anuria on dialysis may contribute to missed lower urinary tract pathology. In patients with lower urinary tract abnormalities, corrective measures should be undertaken prior to transplant or a plan made to deal with the pathology at the time of transplant. We present a case where a massively thick-walled bladder was encountered at the time of transplant causing a decision dilemma and an extremely difficult Vesico-ureterostomy. We explore the unique considerations and approaches to kidney transplantation and subsequent management in these patients.

Case History

A 51-year-old male with end-stage renal disease (ESRD) secondary to dysplastic atrophic right pelvic kidney with overlap of diabetic nephropathy and secondary FSGC was evaluated for kidney transplantation. Preoperative imaging revealed a thick-walled bladder (Figure 1a), prompting a referral for urological assessment. A cystoscopy and bladder biopsy was undertaken suggesting a diagnosis of cystitis cystica glandularis.

A urodynamic study was not performed, and no remedial measure was deemed necessary prior to transplant. The patient underwent deceased donor renal transplantation in the left iliac fossa. A small capacity, thick-walled bladder was encountered consistent with preoperative imaging. A decision dilemma between primary bladder anastomosis and diversion (ureterostomy, ileal conduit) was considered. After a consensus decision a difficult primary Vesico-ureterostomy was performed 4 cm deep to the detrusor surface using interrupted 4/0 PDS (Figure 1b).

After initial smooth recovery (period of catheterisation) The patient experienced a complex course with multiple hospital admissions for recurrent urinary tract infection and sepsis. urinary retention, fluctuating allograft function and hydronephrosis (Figure 3) necessitated antegrade double-J stenting. He underwent a period of self-catheterisation and bladder hydro-distention to improve bladder capacity. Suspected prostate enlargement, was managed with the Rezūm procedure. Despite these interventions, 19 months post renal transplantation, recurrent UTIs persist and patient undergoing cystistat instillation and CIC.

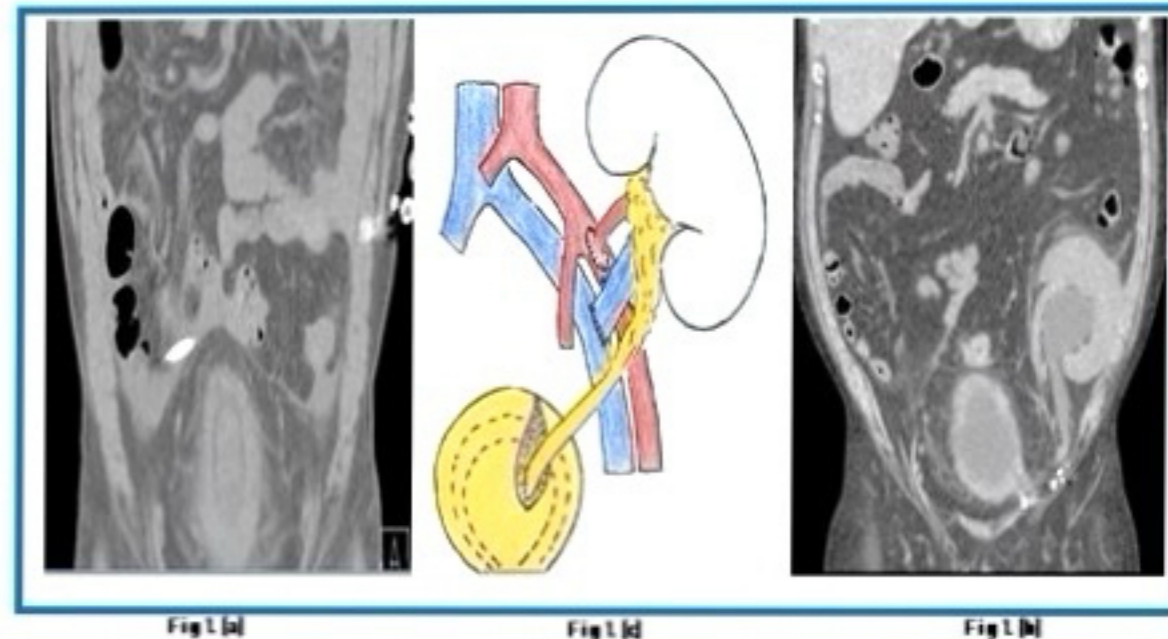


Fig 1. [a] Preoperative CT demonstrating a thick-walled bladder, [b] LIF transplant with vesico ureterostomy, [c] Hydronephrosis secondary to non-compliant bladder. Illustration by Niaz Ahmad.

Discussions

Lower urinary tract abnormalities do not constitute a contraindication for renal transplantation. Diagnosis can often be difficult in an oligo-anuric patient with insufficient history. Any corrective measure should be undertaken prior to transplant or planned management at the time of transplant in a multidisciplinary setting. This patient has a thick-walled stiff bladder which can be closely related to a 'coconut shell'.

A preoperative urodynamic study may have been useful. Measures to increase bladder capacity, drainage or a urinary diversion (ileal conduit) may have been taken pre-operatively. Intraoperatively, a ureterostomy may have been more appropriate as a definitive procedure or until a more suitable alternative was determined. A personalized preoperative planning in a multidisciplinary setting, is crucial to a successful outcome.