



## Total Urinary Incontinence Following Kidney Transplantation: A Rare Complication of Displaced Double-J Stents

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### ABSTRACT

Kidney transplantation is the gold standard treatment for end-stage renal disease globally. It offers recipients the best quality of life and better survival than other modalities of care. Double-j stents are routinely used intra-operatively during kidney transplantation at ureter-neocystostomy as they have been found to reduce the occurrence of ureteric complications following kidney transplantation. Rarely there can displacement of the stent following surgery into the posterior urethra leading to total urinary incontinence which can be quite alarming and embarrassing for the patient.

A retrospective review of all patients who developed total urinary incontinence following kidney transplantation in a high-volume Nigerian Kidney transplant centre over a 3-year period was done. Patients were divided into 2 groups with different lengths of stents. Only 2 out of 290 (0.69%) had total urinary incontinence in patients with stent of 12-16cm while 4 out of 14 (28.57%) had the same in patients with stent of 26cm.

In conclusion, there is a very low prevalence of stent displacement and total urinary incontinence among patients who were inserted with D-J stents of <16cm.

### INTRODUCTION

Kidney transplantation is the gold standard therapy for patients with end-stage renal disease [1, 2]. During kidney transplantation, there is a need to re-implant the ureter of the renal allograft to the bladder of the recipient in a procedure known as a uretero-neocystostomy [3]. This step usually follows vascular anastomosis of the allograft renal artery and vein to the respective iliac artery and vein. It is common practice in many transplant centers all over the world to make use of a ureteric double-J stent during uretero-neocystostomy as it is associated with less urologic complications after kidney transplantation [4, 5]. Some of these complications include urine leaks, ureteric stenosis and strictures. Use of ureteric stents especially the double J stent are however not without few attendant complications including infections, encrustation, irritative urinary symptoms and stent migration [4].

Total urinary incontinence following kidney transplantation is a very rare phenomenon and usually a cause of anxiety, agitation and embarrassment among patients who experience it. Displacement of the lower end of the double-j stent from the bladder to the urethra is the commonest cause of this rare occurrence. We report our experience with total urinary incontinence in the immediate post kidney transplant period among a cohort of Nigerian patients.

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## METHODS

A retrospective review of all patients who developed total urinary incontinence following kidney transplantation in a high-volume Nigerian Kidney transplant centre over a 3-year period was done. Patients were classified into 2 groups. Group A were patients who had size 5 French, 12-16cm Double-J stents inserted (290) and Group B had 5 French, 26cm Double J stents inserted (14). Socio-demographic characteristics, onset of symptom, size of double J stent used, urethrocystoscopy finding and outcomes were recorded in a proforma.

## RESULTS

A total of three hundred and four (304) patients had kidney transplantation during the study period. Six of these patients had total urinary incontinence (1.97%). Further breakdown revealed that 2 out of 290 in Group A had total incontinence (0.69%) while 4 of 14 in Group B (28.57%) developed total incontinence. Symptoms started within the 1st and 2nd weeks of transplantation in 100% of both groups. Urethrocystoscopy confirmed the lower part of the stent in the posterior urethra in all patients and symptoms stopped completely after removal of the stent at urethra-cystoscopy [6].

## DISCUSSION

Migration and inferior displacement of double stents post kidney transplantation is quite rare and has been reportedly found in 0-7% in literature<sup>4</sup>. Only few studies have reported these findings. The significantly higher prevalence of urinary incontinence from migrated stents when the longer 26 cm length stents were used in the index study was similarly mentioned in the study by Kumar et al<sup>4</sup>. This occurrence led to the limitation in the number of patients allocated to the Group B of the study. It is easy to rationalise that since the renal allograft is placed in the iliac fossa of the recipient, the ureteric length is significantly shorter than in a native kidney hence shorter lengths of double J stents are required. On the other hand, one would expect that the coiled ends of the double J-stent would be able to keep the stents from getting displaced but the constant peristalsis in the ureter could be the propulsive

force that enables displacement and migration.

Classically, the patients present within the first 2 weeks with embarrassment and anxiety<sup>4</sup>. Urethra-cystoscopy using either a flexible or rigid cystoscope is both diagnostic and therapeutic. The symptom resolves instantly as soon as the stent is removed at urethra-cystoscopy.

## CONCLUSION

Total urinary incontinence following kidney transplantation is usually as a result of inferior displacement of the double-j stent into the urethra. It is a very rare complication seen in about 1% of patients. The ideal stent length for uretero-neocystostomy in kidney transplant is between 12-16cm in adults. Longer stent lengths increase the chances of development of stent displacement/migration and incontinence.

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