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Research Article

**UROLOGICAL COMPLICATIONS WITH AND WITHOUT J
DOUBLE STENT KIDNEY TRANSPLANT PATIENTS:
EXPERIENCE IN ONE CENTER**

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Abstract:

Aim: To compare urological complications with and without DJ stents in a kidney transplant patient.

Placement and Duration: In the Department of Urology and Renal Transplant of Services Hospital, Lahore. Duration of the study was from January 2019 to December 2019.

Method: 300 transplants were included in the study. They were divided into two groups: DJ Stent and Group A ($n = 150$) and DJ without stents, Group B ($n = 150$). Two groups were randomized and urological complications were compared.

Results: The two groups were similar in age, sex, serum creatinine level and follow-up time. Ureteral leakage was 0.66% in group A and 1.33% in group B. Urinary tract infection was 8.0% and 6.0% in group A and group B, respectively.

Discussion: In our study, urological complications in live kidney transplantation with and without DJ stents were similar. Our study shows that urine leakage in group A and group B was low (around 66%) and (1.33%) between 2.9% and 21%, respectively (19). There was no significant difference in group A and group B.

Conclusion: Our study showed that there were no statistical differences between the two groups.

Keywords: urological complications, kidney transplant, DJ stent

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INTRODUCTION:

End-stage kidney disease is a debilitating disease for patients and their families. Kidney transplantation is the best treatment option among renal replacement therapy¹⁻². The first successful kidney transplant was carried out in 1954. From one twin to another. Advances and experience in surgical technique have been improved as a result of kidney transplantation through the use of a better immunosuppressive regimen and postoperative care³. Urological complications play an important role in patient outcomes, quality of life, loss of transplants, cost-effectiveness and hospitalization⁴. Many centers still use DJ stents for each patient, and some centers only use it in selected situations. Routine intraoperative use of a DJ stent is controversial and still controversial⁵. The main etiological factors include surgical technique; extraction of the transplant and ureter ischemia, gender and source of the corpse donor or live kidney. Urological complications range from 2.9 to 21% in different series⁶. Sansalone and colleagues suggested the routine use of stent placement, but this was not statistically significant. A meta-analysis⁴⁹ published by Georgiev P in 2007. It showed that randomized studies with urological complications with stents were 1.5% compared to 9% in non-stented patients⁷. In this series of meta-analysis cases, it was found that it was 4.8% compared with 3.2% of urinary complications using the additional vesiconeostostoi technique. All randomized studies are in favor of stents. Double J stent may increase the incidence of UTI, scabs, hematuria and LUTS⁸. The purpose of this study was to compare the frequency of urological complications in two groups: in group A with DJ Stent and in group B with DJ Stent.

MATERIALS AND METHODS:

This study was a prospective, randomized, controlled study that was conducted at the

Department of Urology and Renal Transplant in Services Hospital, Lahore. The study lasted from January 2019 to December, 2019. These transplants were performed by the same surgical team at this center. All these transplants were made with the appropriate living donors. They were divided into two groups. Group A n = 150 with a DJ stent and group B n = 150 without a DJ stent. No patient met the exclusion criteria such as hyperacute rejection or severe bladder abnormalities. These patients were observed for urological complications such as ureteral efflux, disruptive haematuria, ureteral stenosis, urinary tract infection, transurethral resection of the prostate and symptomatic vesicoureteral reflux (SVUR). All patients in both groups were given 3rd generation cephalosporin as a prophylactic antibiotic. The DJ stent was removed within 3-4 weeks, overall urological complications were observed and compared in both groups.

RESULTS:

These 300 subsequent patients were divided into two groups, group A n = 150 and group B n = 150 were compared, patients in both groups were 3.2% and 1.6% respectively. In the series described by Guleria (2005), ureter complications were 7.7% with better Politano3 derivative technique. A meta-analysis of 49 studies published by Georgiev P in over 30 years in 2007. It showed that stent urinary leakage (1.5%) and non-stent group (9%) and case series (3.2%) in randomized patients. Extravascular neocystostomy with (4.8%). All randomized trials favored stents, but in our study, there was no difference in any of the groups 5,12. We used additions regarding age, gender, donor sex, postoperative antibiotic and hospital stay. Of the total number of 300 patients, 207 are men and 93 women. The male to female ratio was 2.2: 1. The age range was 12 to 70 years. The average age was 35.85. The follow-up period was from 1 to 4 years, with an average of 2.12 years.

Urological complication	GROUP A (n=150)	GROUP B (n=150)	TOTAL (n=300)
Ureteric leakage	1=0.66%	2=1.33%	3=1%
Stent migration	1=0.66%	00	1=0.33%
Ureteric necrosis	1=0.66%	00	1=0.33%
Ureteric Stenosis	1=0.66%	2=0.66%	3=1%
Hematuria leading to intervention	1=0.66%	2=0.66%	3=1%
SVUR	00	00	00
UTI	12=8%	09=6%	21=7%
Lymphocele leading to obstruction.	00	1=0.67%	1=0.33%
LUTS	2=1.33%	1=0.66%	03=1.9%

Overall, urological complications occurred in 36 patients (12%), the total number of patients in group A was 19 (12.6%) and in group B 17 (11.33%). If we do not include UTI, 15 patients (5%) experienced general urological complications. Urological complications in group A (4.67%) were compared with group B (5.33%). Urine leakage in group A and group B was (0.67%) and (1.33%) respectively. One patient (0.66%) had ureteral necrosis. No symptomatic vesico-ureteral reflux was observed in either patient in both groups. The main complication was

urinary tract infection and was higher in group A (8%) than in group B (6%). Lower urinary tract symptoms (LUTS) (1.0%) and hematuria (0.33%) leading to urinary retention were observed in both groups. There was no statistically significant difference between urological complications in both groups. All complications were observed in the first 2 weeks with late admission of 01 lymphocele and 02 ureter stenosis.

DISCUSSION

In our study, urine leakage was 1.0% compared to 7.3% reported by Jacob AAkoh, Abdus S. Opaluwa and Dvid Weller (2009). According to Giakoustidis, in 2008 urine leakage was (2.3%) with a DJ stent and (4.1%) without a stent. In the Luna E10 study, the incidence of urinary fistula was 4.4%. Injuries were also reported during convalescence, but there were no ureteral injuries in our center. In this study, urine leakage in a series of 201 patients was 0.66% in group A, 1.33% in group B, leakage without stent and stent 8.9% and 0.9%. This low frequency in our study was due to the fact that we only had surgery with the right living donors⁹. Ureter complications are more common in corpse donors because the probability of ureter injury and cold ischemia is high. Better urine leakage and better technique and technique with fewer complications. It also depends on the experience and surgical technique that we have combined with ureter oil to maintain blood circulation. In our study, this 5% frequency of ZTI-free complications was comparable to 2.9-21% reported in various studies¹⁰. If we consider UTI, the complication rate was (12%).

Urinary fistula stent was 7% and the unmanaged group - 13 (6%). In our study, ureteral necrosis developed in one patient (0.33%). Then patients entered ATN and cause necrosis. Bovie Flap was done, but three months later we have to do a nephrectomy for another reason¹¹. Loss of transplant was reported in two patients with a Wilson CH stent (2005) 20. Delayed graft function was the main cause of both studies. Urethral stenosis was 3.5% 10 and 7.7% without stent and 00% with stent¹⁸. The double J stent significantly reduces leakage and clogging. These results may be due to lack of experience, because in our study it was 1%. This difference was due to the experience of the surgical technique and the surgical team. In our study, hematuria was 0.67%. This can occur from the lower end of the ureter to the bladder and even from adverse events¹². Positive culture urinary tract infection in patients with stents 13 was 46% and 29% without stents. Nicolson 1991 reported 27% urinary tract infection after a DJ, but in our study, it was very low with and without a stent, 8% and 6%, respectively. This may be due to early removal of the stent and prophylactic use of third generation antibiotics. Giakoustidis (2008) reported that there was no difference between UTI (20.4%) and (19.2%) in both groups with and without stents, respectively¹³. Urinary tract infections, especially when the stent was significantly longer than a month earlier. A living donor and stent placement reduce

urological complications, but female sex is responsible for urinary tract infection. LUTS in our study was reported as 1.9%. Only one patient required TURP within 6 months of transplanting a total of 300 patients¹⁴. The next series was 1.3%. These symptoms are expected due to prolonged anuria. These symptoms may be due to the presence of a DJ stent in the bladder. Some patients may have an enlarged prostate gland during evaluation and according to Streeter et al. He only needed 2% TURP within six months of transplantation. None of our patients had symptomatic vesico-ureteral reflux compared to other studies, which was 25.3%. This difference is due to surgery, and severe bladder abnormalities can cause reflux. Most 88.6% of complications were reported within the first 2 weeks after transplantation¹⁵. Careful surgery with postoperative care is the key to preventing, identifying and treating these complications. UTI DJ stent scaling may increase the incidence of hematuria and LUTS. Transplant, patient survival and serum creatinine were the same in both groups. In our study, urological complications were small and there was no difference in both groups.

CONCLUSION:

We suggest good surgical techniques, good ureter resection with sufficient length and fat, extravascular neocystostomy, less diathermy use and good antibiotic coverage can reduce complications and use by DJs.

REFERENCES:

1. Tyagi, Vipin, Saurabh Jain, Mahendra Singh, Mrinal Pahwa, Sudhir Chadha, and Shahnawaz Rasool. "Native ureteroureterostomy in renal allograft recipient surgery: A single-center 5-year experience." *Indian journal of urology: IJU: journal of the Urological Society of India* 35, no. 3 (2019): 218.
2. Soylu, Lutfi, Oguz Ugur Aydin, Muzaffet Atli, Ceren Gunt, Yakup Ekmekci, Nedim Cekmen, and Sedat Karademir. "Does early removal of double J stents reduce urinary infection in living donor renal transplantation?." *Archives of medical science: AMS* 15, no. 2 (2019): 402.
3. Nadjafi-Semnani, Mohammad, Nasser Simforoosh, Abbas Basiri, Ali Tabibi, and Ali Nadjafi-Semnani. "Comparison of Removing Double-J Stent With and Without Cystoscopy in Kidney Transplant Patients: A Randomized Clinical Trial." *Urology Journal* (2020).
4. Stensland, Kristian D., Todd M. Morgan, Alireza Moinzadeh, Cheryl T. Lee, Alberto Briganti, James WF Catto, and David Canes.

- "Considerations in the triage of urologic surgeries during the COVID-19 pandemic." *European urology* (2020).
5. Müller, P. F., M. Kunzelmann, K. Wilhelm, A. Miernik, C. Gratzke, A. Jud, P. Pisarski, and B. Jänigen. "Magnetic Ureteral Stents Are Feasible in Kidney Transplant Recipients: A Single-Center Experience." *Int J Organ Transplant Med (IJOTM)* 10, no. 4 (2019).
 6. Goldman, Jason D., and Kathleen Julian. "Urinary tract infections in solid organ transplant recipients: Guidelines from the American Society of Transplantation Infectious Diseases Community of Practice." *Clinical transplantation* 33, no. 9 (2019): e13507.
 7. Lee, Jennifer H., Thangamani Muthukumar, Jim Kim, Meredith J. Aull, Anthony Watkins, Sandip Kapur, and Choli Hartono. "Antibiotic prophylaxis for ureteral stent removal after kidney transplantation." *Clinical transplantation* 33, no. 3 (2019): e13491.
 8. Choate, Hannah R., Laura A. Mihalko, and Bevan T. Choate. "Urologic complications in renal transplants." *Translational andrology and urology* 8, no. 2 (2019): 141.
 9. Friedersdorff, Frank, Sarah Weinberger, Nadine Biernath, Henning Plage, Hannes Cash, and Nasrin El-Bandar. "The Ureter in the Kidney Transplant Setting: Ureteroneocystostomy Surgical Options, Double-J Stent Considerations and Management of Related Complications." *Current Urology Reports* 21, no. 1 (2020): 1-5.
 10. Sali, Gaurav Mohan, and Hrishikesh B. Joshi. "Ureteric stents: Overview of current clinical applications and economic implications." *International Journal of Urology* 27, no. 1 (2020): 7-15.
 11. Pesce, Francesco, Marida Martino, Marco Fiorentino, Tiziana Rollo, Simona Simone, Pasquale Gallo, Giovanni Stallone et al. "Recurrent urinary tract infections in kidney transplant recipients during the first-year influence long-term graft function: a single-center retrospective cohort study." *Journal of nephrology* 32, no. 4 (2019): 661-668.
 12. Sarier, Mehmet, Ibrahim Duman, Yucel Yuksel, Sabri Tekin, Meltem Demir, Fatih Arslan, Osman Ergun, Alim Kosar, and Asuman Havva Yavuz. "Results of minimally invasive surgical treatment of allograft lithiasis in live-donor renal transplant recipients: a single-center experience of 3758 renal transplantations." *Urolithiasis* 47, no. 3 (2019): 273-278.
 13. Cacciamani, Giovanni E., Zhamshid Okhunov, Aurus Dourado Meneses, Moises Elias Rodriguez-Socarras, Juan Gomez Rivas, Francesco Porpiglia, Evangelos Liatsikos, and Domenico Veneziano. "Impact of three-dimensional printing in urology: state of the art and future perspectives. A systematic review by ESUT-YAUWP group." *European urology* (2019).
 14. Berhe, Tekleberhan. "Surgical complications and outcomes of Living Kidney Recipients in a Novice Transplant Center in the Sub-Saharan African Country-Ethiopia: A two years experience." *Ethiopian Medical Journal* (2020).
 15. Ooms, L. S. S., R. C. Minnee, F. J. M. F. Dor, H. J. A. N. Kimenai, T. C. K. Tran, H. Hartog, J. van de Wetering, S. P. Willemse, J. N. M. IJzermans, and T. Terkivatan. "Stenting the ureteroneocystostomy reduces urological complications in kidney transplantation: a non-inferiority randomized controlled trial, SPLINT-trial." *Transplant International* (2020).