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Research Article

**STUDY TO DETERMINE THE UROLOGICAL
COMPLICATIONS WITH AND WITHOUT DOUBLE J
STENTING RENAL TRANSPLANT PATIENTS**

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Article Received: October 2020 **Accepted:** November 2020 **Published:** December 2020**Abstract:**

Objective: To compare urological complications with and without a DJ stent in a patient after kidney transplantation.

Place and Duration: In the Department of Urology, Allied Hospital Faisalabad for one-year duration from June 2019 to June 2020.

Method: A total of 300 transplants were included in the study. They were divided into two groups, group A [n = 150] with the DJ stent and group B [n = 150] without the DJ stent. Two groups were randomized and urological complications were compared.

Results: Both groups were comparable in terms of age, sex, serum creatinine level and follow-up period. In group A, ureter leakage was 0.66%, and in group B. 1.33%. Urinary tract infection was the major complication in both groups, 8.0% and 6.0% in Group A and Group B, respectively.

Discussion: In our study, urological complications following live kidney transplantation with and without DJ stent were comparable. Our study shows that urine leakage was low [0.66%] and [1.33%] in Group A and Group B, respectively, compared to other studies where it ranged from 2.9% to 21% [19]. There was no significant difference in Group A and Group B.

Conclusion: In our study it was found that there was no statistical difference 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 therapy [21]. The first successful kidney transplant was performed in 1954 from twin to twin. Thanks to advances and expertise in surgical technique, the use of a better immunosuppressive system and postoperative care, the results of kidney transplantation have improved. Urological complications have a significant impact on patient outcomes, quality of life, graft loss, cost effectiveness, and hospital stay. Many centers still use DJ stents for every patient, and some centers only use DJ stents in select cases. The routine intraoperative use of the DJ stent is controversial and still debatable. Major etiological factors include surgical technique; Collection of the transplant and ureteral ischemia Gender and source of kidney or living donor 5. Urological complications range from 2.9-21% in different series. Sansalone *et al.* Recommended routine use of stenting, but this was not statistically significant. A meta-analysis 49 published by Georgiev P in 2007 found that in randomized controlled trials with stent-related urological complications, 1.5% were found, compared with 9% in patients without a stent. In this meta-analysis of a series of cases it was found that 3.2% compared with 4.8% of complications in urination with an additional vesicocystostomy technique. All randomized trials supported stents. The Double J stent can increase the incidence of UTI, incrustation, hematuria, and LUTS. The aim of the study was to compare the incidence of urological complications in two groups: A with the DJ stent and B without the DJ stent.

MATERIALS AND METHODS:

This study was a prospective, randomized, controlled study conducted in the Department of Urology, Allied Hospital Faisalabad for one-year duration from June 2019 to June 2020. These transplants were performed by the same team of surgeons at the center. All these transplants were done with living related donors. They were divided into two groups. Groups A n = 150 with a DJ stent and Group B n = 150 without a DJ stent. None of the patients met exclusion criteria such as severe rejection or severe bladder defects. Urological complications such as ureteral leakage, interventional hematuria, ureteral stenosis, urinary tract infection, lower urinary tract symptoms leading to surgical intervention such as transurethral prostate resection and symptomatic vesicoureteral reflux [SVUR] have been observed in these patients. All patients in both groups were given prophylactic third generation cephalosporin. The DJ stent was removed within 3-4 weeks. All urological complications were recorded and compared in both groups.

RESULTS:

These 300 consecutive patients were divided into two groups, groups A n = 150 and group B n = 150 were compared. Patients in both groups were compared using the extra-bladder technique 3.2% and 1.6%, respectively. Out of 300 patients, 207 were male and 93 were female. The Male to female ratio was 2.2: 1. The age range was 12 to 70 years. The mean age was 35.85 years. The follow-up period ranged from 1 to 4 years, mean 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%

In total, urological complications occurred in 36 patients [12%], in group A 19 [12.6%], and in group B 17 [11.33%]. If UTIs are not taken into account, general urological complications occurred in 15

patients [5%]. Urological complications in group A were [4.67%] compared to group B [5.33%]. Urine leakage occurred in group A and group B [0.67%] and [1.33%], respectively. Ureteral necrosis occurred

in one patient [0.66%]. No patients in both groups had symptomatic vesicoureteral reflux. The main complication was urinary tract infection and it was higher in group A [8%] compared to group B [6%]. Lower urinary tract symptoms [LUTS] [1.0%] and hematuria [0.33%] leading to urinary retention were also noted in both groups. There was no statistically significant difference in urological complications in the two groups. All complications were recorded in the first 2 weeks except 01 lymphocele and 02 ureteral stenosis with late presentation.

DISCUSSION:

In our study, urine leakage was 1.0% compared to 7.3% reported by Jacob A Akoh, Abdus S Opaluwa, and Dvid Weller [2009]. According to Giakoustidis, in 2008, urine leakage occurred [2.3%] with the DJ stent and [4.1%] without the stent. In a study by Luna E. the incidence of urinary fistula was 4.4%. Injuries during retrieval were also reported, but no damage to the ureter was found in our center. In this study, leakage with urine was 0.66% in Group A and 1.33% in Group B. Tavakoli 2007 in a group of 201 patients, leakage was 8.9% and 0.9% without and with a stent. This low incidence in our study was due to the fact that we only operated on a living related donor. Ureteric complications are more common in cadaver donors because the likelihood of ureteral damage and cold ischemia is high. Leakage of urine with a better Politano lead and a technique that has fewer complications. It also depends on the experience and surgical technique in which we care for the ureteral fat in order to spare its blood supply. This 5% complication rate without a UTI in our study was comparable to 2.9-21% reported in the various studies. If UTIs are included, the complication rate was [12%]. The urinary fistula with a stent was 7%, and the unstented group was 13 [6%]. Ureteral necrosis occurred in one [0.33%] patient in our study. The patient was admitted to the ATN, followed by ureteral necrosis. Borie Flap was done, but three months later we have to go to nephrectomy for another reason. Wilson CH [2005] also described graft loss in 2 stent patients. Delayed graft function was the main cause in both studies. Ureteral stenosis was 3.5% and 7.7% without a stent and 00% with a stent. Double J stent significantly reduces leakage and obstruction. These results may be due to inexperience as it was 1% in our study. This difference resulted from the operating technique and experience of the surgical team. In our study, hematuria was 0.67%. This can happen from the lower end of the ureter and even from the bladder. Cultured positive urinary tract infections in patients with a stent were 46%, and without a stent - 29%. Nicolson 1991 reported a UTI of 27% after the DJ

stent, but in our study, it was very low 8% and 6% with and without the stent, respectively. This may be due to the early removal of the stent and the prophylactic use of a third-generation antibiotic. Giakoustidis [2008] reported that there was no difference in both stent and non-stent groups for UTI [20.4%] and [19.2%], respectively. The UTI was significantly high, especially when the stent remained for more than a month. Living donors and stenting reduce urological complications, but the female gender is responsible for the UTI. LUTS in our study was reported in 1.9%. Of a total of 300 patients, only one patient required TURP within 6 months post-transplant. In another series, it was 1.3%. These symptoms are expected because of prolonged anuria. These symptoms may be due to the presence of a DJ stent in the bladder. Some patients may have prostatic hyperplasia at the time of evaluation and according to Streeter et al. Only 2% needed TURP within six months post-transplant. None of our patients had symptomatic vesicoureteral reflux compared with other studies where it was 25.3%. This difference is due to surgery, and severe bladder defects can cause reflux. The majority of complications, 88.6%, were reported in the first 2 weeks after transplantation. Careful surgery with post-operative care is key to avoiding, recognizing, and treating these complications. The DJ stent may increase the incidence of UTI, incrustation, hematuria, and LUTS. Transplant, patient survival, and serum creatinine were the same in both groups. In our study, urological complications were minor and no differences were found in the two groups.

CONCLUSION:

We recommend that good surgical techniques, good ureteric resection with adequate length and fat, extravesical neocystostomy technique, less use of diathermy and good antibiotic cover can reduce the complications and use of DJ.

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