ORIGINAL ARTICLE

Urological Complications with and without Double J Stenting Renal Transplant patients - A single center experience

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ABSTRACT

Aim: To compare the urological complications with and without DJ stent in renal transplant patient.
Method: A total of 300 transplants were included in this study. These were divided into two groups, Group A (n=150) with DJ Stent and Group B (n=150) without DJ stent. The two groups were randomized and urological complications were compared.
Results: These both groups were comparable regarding age, sex, serum creatinine level and follow up period. Ureteric leakage was 0.66% in group A and 1.33% in group B. Urinary tract infection was the main complication in both groups 8.0% and 6.0% in group A and group B respectively.
Discussion: Urological complications in live renal transplant with and without DJ stent were comparable in our study. Our study shows that urinary leakage was low (o.66%) and (1.33%) in Group A and Group B respectively as compared to other studies where it was 2.9 to 21% (19). There was no significant different in Group A and Group B.
Conclusion: Our study concluded that there was statistically no difference between two groups.
Key wards: Urological complications, kidney transplant, DJ stent

INTRODUCTION

End stage renal disease is a devastating disease for the patients and their families. Renal transplant is the best treatment option among renal replacement therapy (21).First successful renal transplant was done in 1954 from one twin to another.With advances and experience in surgical technique,use of better immune suppressive regime and post- operative care, the outcome of renal transplant has improved[1].

Urological complications have significant role in the patient's outcome, quality of life, graft loss, cost effectiveness and hospital stay. Many centers are still using DJ stent in every patient[19] and some centers use this only in selective cases[1,10,19]. Routine intraoperative use of DJ stenting iscontroversial and still debatable. Major etiological factors include surgical technique; graft harvesting and ureteric ischemia[14] gender and source of kidney cadaveric or live donor[5].

Urological complications ranges from 2.9-21% in different series[19]. Sansalone et al recommended routine use of stenting but statistically it was insignificant[15]. Meta analysis of 49 published by Georgiev P in 2007 showed that in randomized trials with stent urological complications were1.5% vs 9% in non stented patients. In this Meta analysis case series reported that 3.2% vs 4.8% urinary complications with extra vesiconeocystostoy technique[5]. All randomized trials were in favor of stents. Double J stent can increase the incidence of UTI, encrustations, hematuria and LUTS[14]. The aim of this study was to compare the incidence of urological complications in the two groups, Groups A with DJ Stent and Group B without DJ stent.

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MATERIALS AND METHODS

This study was prospective randomized controlled trial and was done at the Department of Urology and Renal Transplant. SMDC, Lahore. Duration of the study was from January 2008 to 31st December 2012.These transplants were performed by the same surgical team at this center. These all transplants were done with live related donors. These were divided into two groups. Groups A n= 150 with DJ Stent and Group B n=150 without DJ Stent. No Patient met the exclusion criteria like hyper acute rejection or sever bladder abnormalities.

These patients were observed for urological complications, like ureteric leakage, hematuria leading to intervention, ureteric stenosis, urinary tract infection, lower urinary tract symptoms leading to surgical intervention like transurethral resection of prostate and symptomatic vesicoureteric reflux(SVUR). All patients in both group were given 3rd generation cephalosporin as prophylactic antibiotic. DJ stent was removed within 3-4 weeks. Over all urological complications were noted in both groups and were compared.

RESULTS

These 300 consecutive patients were divided into two groups, GroupsA n=150 and Group B n=150 were compared. Patients in both groups were compared with extravesical technique was 3.2% and 1.6% respectively[16]. In a series reported by Guleria (2005) ureteric complications were 7.7% with lead better Politanio technique[3]. Meta analysis by Georgiev P in 2007 of 49 published studies over 30 years showed that in randomized patients with stent had urinary leakage (1.5%) with stent and (9%)in non stented group and in case series it was (3.2%) and (4.8%) with extravesical neocystostomy. All randomized trial was in favor of stents but in our study there was no difference in both Groups[5,12]. We used extravesical regarding age, sex, donor gender, postoperative antibiotic and hospital stay.

Out of total 300 patients 207 were male and 93 were female. Maleto female ratio was 2.2:1. Age ranges was from 12to 70 years. Mean age was 35.85 years. Follow up period was 1year to 4 years with 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%

Over all total urological complications were in 36 patients (12%), in Group A total number of patients were 19 (12.6%) and in Group B 17(11.33%). If we do not consider UTI then the overall urological complications were in 15 patients (5%). Urological complications in Group A were (4.67%) verses group B (5.33%). Urinary leakage was (0.67%) and (1.33%) in group A and group B respectively. Ureteric necrosis was in one patient (0.66%). Symptomatic vesicoureteric reflux was not noted in any patient in both groups. Main complication was urinary tract infection and was more in Group A (8%) as compare to group B (6%). Lower urinary tract symptoms (LUTS) (1.0%) and hematuria (0.33%) leading to urinary retention was also noted in both groups. There was statistically no significant difference of urological complications in two groups. All complications were noted in first 2 weeks except 01 lymphocele and 02 ureteric stenosis with late presentation.

DISCUSSION

In our study urinary leakage was 1.0% as compared to 7.3% reported by Jacob AAkoh, Abdus S Opaluwa and Dvid Weller (2009)[1]. Acorrding to Giakoustidis in 2008 urinary leakage was (2.3%) with DJ stent and (4.1%) without stent[6]. Incidence of urinary fistula was4.4% in a study by Luna E[10]. Injuries during the retrieval were also reported but in our center there was no ureteric injury. In this study urinary leakage was 0.66% in Group A and 1.33% in Group B. Tavakoli 2007 in a series of 201 patients, leakage was 8.9% and 0.9% without and with stent. This low incidence in our study was because we were operating upon only live related donor. Ureteric complications are more in cadaveric donor as chances of ureteric injury and cold ischemia time is high. Urinary leakage with lead better Politano and technique, which has fewer complications. This also depends upon the experience and the surgical technique where we take care of ureteric fat to save its blood supply. This 5% incidence of complications without UTI in our study was comparable with 2.9-21% reported in different studies[1]. If we include UTI then complication rate was (12%).

Urinary fistula with stent was 7% and innon-stented group 13(6%). Ureteric necrosis occurred in one (0.33%) patient in our study. Patient went into ATN followed by the ureteric necrosis. Borie Flap was made but after three months we have to go for nephrectomy for some other reason. Graft loss was also reported in 2 patients with stent by Wilson CH (2005)[20]. In both studies delayed graft function was the main reason.

Ureteric stenosis was 3.5%[10] and 7.7% with no stent and 00% with stent[18]. Double J stent significantly reduces leakage and obstruction[2]. These results may be due to lack of experience because in our study it was 1%. This difference was due to surgical technique and experience of surgical team. Hematuria was in 0.67% in our study. This can occur from the lower end of the ureter and even from the bladder aea[8].

Urinary Tract Infection[13] with positive culture in stented patients was 46% and without stent was 29%. Nicolson 1991 reported UTI 27% after DJ stent[11] but in our study it was very low 8% and 6% with and without stent respectively. This may due to early removal of stent and prophylactic use of3rd generation antibiotic. Giakoustidis (2008) reported that there was no difference in both groups with

and without stent regarding UTI (20.4%) and (19.2%) respectively[6]. UTI was significantly high especially when stent was left more than one month. Living donor and stenting reduces the urological complications however female gender is responsible for UTI[5].

LUTS in our study were reported in 1.9%. Out of total300 patients only one patient needed TURP with in 6 month of post transplant. It was 1.3% in another series[1]. These symptoms are expected due to long standing anuria. These symptoms can be due to presence of DJ stent in the urinary bladder. Some patients may have enlarged prostate at the time of evaluation and according to Streeter et al only 2% needed TURP within six months of post transplant[17].

None of our patient had symptomatic vesicoureteric reflux as compared to other studies where it was 25.3%[9]. This difference is due to surgical procedure and sever abnormalities of urinary bladder can cause reflux.

Most of the complications 88.6% were reported in first 2 weeks of post-transplant. Careful surgery with post-operative care is the key to avoid, identify and treat these complications. DJ stent can increase the incidence of UTI, encrustations, hematuria and LUTS[14]. Graft, patient survival and serum creatinine were same in both groups. In our study urological complications were low and there was no difference in both 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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