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EFFECT OF ENDOUROLOGICAL PROCEDURE WITH OR WITHOUT DOUBLE-J STENT ON SEXUAL FUNCTION

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ABSTRACT

Background: Endourological surgery is a common practice in the management of urinary tract stones and double-j stents are commonly inserted in the ureter to prevent obstructions and complications. Nevertheless, the placement of stents has been linked to pain in the urinals and the possible effect on sexual performance. There is still limited evidence on this effect especially on local populations.

Objective: To compare the effect of endourological procedures performed with and without double-J stent placement on sexual function.

Methods: The present study was a quasi-experimental one that was done at the Department of Urology and renal transplant, Jinnah hospital, Lahore from August 2025 to November 2025. One hundred and ten patients (20-60 years) undergoing endourological procedure were recruited and included two groups; Group A (n=55) had a double-J stent procedure and Group B (n=55), did not receive the stent. Demographic and clinical information regarding preoperative was taken. At 3 months, the outcomes of postoperative, such as lower urinary tract symptoms (as measured by IPSS) and sexual function scores were observed. Analytics was conducted on the independent samples t-test, stratified analysis, and the level of p 0.05 was taken as significant.

Results: There was no difference in operative time and intraoperative blood loss. The IPSS scores were much better in the stent group than in the non-stent group (13.90 ± 5.03 vs 9.75 ± 4.06; $p < 0.001$). In the same vein, there was a lower postoperative sexual function in stent patients (12.42 ± 4.26 vs 10.48 ± 2.69; $p = 0.005$). Such results indicate that the installation of stents is connected with the emergence of additional urinary symptoms and a temporary decrease in sexual activity.

Conclusion: Enduring effects of lower urinary tract symptoms and temporary effects on sexual functioning with double-J stents postoperative endourology procedures are proven but have no effect on the time of operation and blood loss. It is suggested to use selective stenting and proper patient counseling that would reduce the morbidity and enhance the quality of life after the operation.

KEYWORDS: Double-J stent, endourological procedure, urinary symptoms, sexual functioning, IPSS.

INTRODUCTION

The endourological practices are usually applied in treatment of benign urinary tract conditions and application of a double-J ureteral stent has been a norm in the contemporary urology [1]. Ureteral stents are commonly used to alleviate a ureteral obstruction that is due to a number of conditions, such as hydronephrosis due to the presence of urinary stones, ureteral stricture, pregnancy, malignancy, or fibrosis of the retroperitoneum [2]. Moreover, stents made of double-J are commonly placed in the postoperative period following various urological procedures including open or endoscopic ureteral operations, percutaneous nephrolithotomy, and pyeloplasty, or even as a prophylaxis to ensure sufficient urinary drainage and to avoid obstruction in the postoperative era [3]. Although the ureteral stents have been of considerable clinical benefit their widespread use has led to concerns about stent morbidity. Patients can also have various negative effects, including mild and reversible symptoms like urinary frequency, urgency, and pain in the

lower abdomen on the one hand, and more serious complications, which can have an adverse impact on their quality of life, on the other hand. The effect of ureteral stents on sexual functioning is among such complications, which have acquired more and more significance in recent years. [4]. A large number of patients that have undergone endourological operations complain of the potential sexual dysfunction after surgery. But scanty evidence exists to give a decisive evidence-based answer to whether the endourological operations especially insertion of double-J stents have an impact on sexual performance [1]. According to some studies, the existence of a ureteral stent can have a temporary adverse impact on sexual performance because of urinary symptoms, pivotal discomfort, or even nervous strain relating to the gadget [5]. Camtuson et al. had documented that the sexual function mean score stood at 12.26 with a standard deviation of 4.5 in patients with a double-J stent, and at 10.2 with a standard deviation of 2.75 in patients who did not receive any stent [6]. Though these effects are usually short-term and usually clear at the time of stent removal, patients can have significant decrease in sexual function at the beginning of the postoperative period. Consequently, it has been proposed that the application of the double-J stents should be done when it is clinically necessary, and within the shortest period possible. Also, it should be counselled to the patients appropriately regarding temporary sexual dysfunction that may occur within the first month of the procedure but which normally disappears after three months [7]. Despite those effects being temporary and therefore most resulting in a normalization of sexual functioning upon removal of the stents, there is a possibility that the patients might experience a drop in sexual functioning as the early postoperative stage. Thus, it is suggested that the use of the double-J stents is only to be applied when clinically necessary and within the minimal time possible. Temporary sexual dysfunction is another condition that should be properly counselled to patients, and usually, it goes away in a few months following the surgery [8].

Even though some studies conducted internationally have investigated this problem, not much can be given by the local population. The assessment of the effect of the use of the double-J stents on sexual functioning is of value in enhancing patient counselling and the management of patients postoperatively. Thus, the current research study was carried out to assess the impact of endourological procedures that were carried out on sexual functioning with and without the usage of the double-J stents. The results of the present study can be used to inform clinical decision making and assist in the better outcome of surgery and life quality of patients receiving endourological interventions.

METHODS

This quasi-experimental study, conducted in the Department of Urology and Renal Transplantation at Jinnah Hospital, Lahore, from August 2025 to November 2025, following the approval of the institutional ethical review committee of the study protocol. The number of patients who participated in the study was 110 and 55 patients in each group. The sample size was determined as 80% power of the test and the level of confidence of 95 percent based on the earlier reported mean scores of sexual functioning of 12.26 + 4.5 in patients with double-J stents and 10.2 + 2.75 in patients without any stents [7]. The sampling method used was non-probability consecutive sampling, where the patients were recruited. The study included patients aged between 20 and 60 years with kidney stones who had endourological procedures under spinal anaesthesia and a physical status of the American Society of Anesthesiologists (ASA) I or II. Patients who had a history of an endourological procedure, neurogenic bladder dysfunction, history of carcinoma, erectile dysfunction or reported hormonal or metabolic distortions were excluded. Demographic and clinical data were collected after receiving the written informed consent comprising age, gender, body mass index (BMI), stone size, stone location, hypertension, diabetes mellitus, smoking status, and alcohol consumption. Prior to surgery, the International Prostate Symptom Score (IPSS) was used to measure the severity of lower urinary tract symptoms, and validated questionnaires: the International Index of Erectile Function (IIEF) in men and Female Sexual Function Index (FSFI) in women were used to measure sexual functions. The surgical team was the same in all procedures. Operation time and blood estimated to be lost was recorded during surgery. Group A (had double-J stent) consisted of patients with incomplete stone clearance, or those who sustained ureteric traumas or pyonephrosis, whereas Group B (no double-J stent) consisted of those patients who had complete clearance of stones and no ureteric trauma or pyonephrosis. After the procedure, the patients were transferred to the operating ward and given conventional antibiotics to avoid infection. Patients were discharged after 24-48 hours and the patients were followed in the outpatient department over three months. The IPSS and sexual function scores were re-evaluated during the follow-up process based on the established operational definitions. All the pertinent information was documented on a structured pro forma.

The SPSS 26.0 was used to analyze the data. Quantitative variables were tested on their normality by the use of histograms and Shapiro-Wilk test. Mean and standard deviation were used to represent quantitative variables (age, BMI, size of the stone, time taken to operate, blood loss, pre and postoperative IPSS, and sexual function score), frequencies and percentages were used to represent categorical variables (gender, location of the stone, hypertension, diabetes mellitus, smoking status and alcohol consumption). Independent samples t- test on the mean scores of pre and postoperative IPSS and sexual function were compared and a p-value below 0.05 was regarded as significant.

RESULTS

One hundred and ten patients were used in the study, of which 55 were the patients in the double-J stent group and 55 were the patients in the non-stent group. The stent population had a mean age of 41.91 + or - 9.81 years, and that of the non-stent population was 43.80 + or - 9.21 years. The average BMI of the stent and non-stent group was 25.63 meant ± 4.36 kg/m 2 and 25.73 meant ± 3.67 kg/m 2 respectively. The mean size of the stones was 11.62 and 3.62 mm in patients that had stents and those that did have no stents respectively. The majority of the participants were males (75.5), and both groups were similar. Hypertension amongst patients was 27.3 percent and diabetes was 24.5 with no significant difference between the groups. The smoke was noted among 36.4, and the alcohol among 15.5% of the participants (Table 1).

Table 1. Baseline demographic characteristics of patients undergoing endourological procedures with or without double-J stent (n = 110)

Variable	DJ Stent (n = 55)	No Stent (n = 55)	Total (n = 110)
Age (years)	41.91 ± 9.81	43.80 ± 9.21	42.85 ± 9.52
BMI (kg/m²)	25.63 ± 4.36	25.73 ± 3.67	25.68 ± 4.01
Stone size (mm)	11.62 ± 3.62	10.93 ± 3.93	11.27 ± 3.78
Male	42 (76.4%)	41 (74.5%)	83 (75.5%)
Female	13 (23.6%)	14 (25.5%)	27 (24.5%)
Hypertension – Yes	16 (29.1%)	14 (25.5%)	30 (27.3%)
Hypertension – No	39 (70.9%)	41 (74.5%)	80 (72.7%)
Diabetes – Yes	14 (25.5%)	13 (23.6%)	27 (24.5%)
Diabetes – No	41 (74.5%)	42 (76.4%)	83 (75.5%)
Smoking – Yes	15 (27.3%)	25 (45.5%)	40 (36.4%)
Smoking – No	40 (72.7%)	30 (54.5%)	70 (63.6%)
Alcohol use – Yes	9 (16.4%)	8 (14.5%)	17 (15.5%)
Alcohol use – No	46 (83.6%)	47 (85.5%)	93 (84.5%)

On the issue of the stone location, 30.0% of those were found in the kidney, 27.3% in mid ureter, 22.7% in upper ureter and 20.0% in lower ureter. The stent group had a higher number of kidney stones and the non-stent group had a higher number of upper ureter stones (Figure 1).

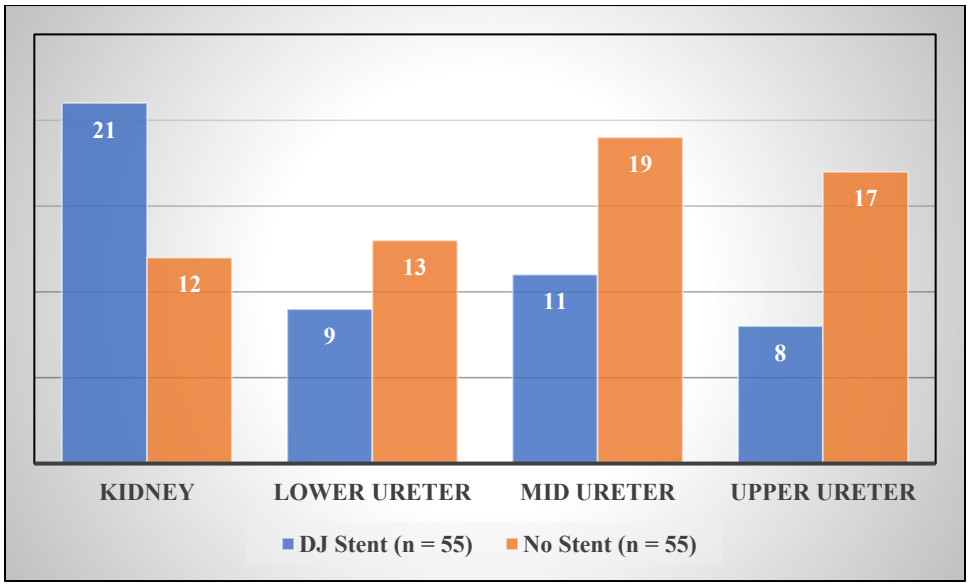

Figure 1: Distribution of stone location among patients in both study groups (n = 110)

Operative times of (52.91 ±14.95 vs 55.78 ±15.59) and blood losses of (66.36 ±32.83 vs 67.53 ±32.11) were not significantly different between the DJ stent and non-stent groups (p =0.326 and 0.851, respectively). But the IPSS scores after the operation were significantly high in the DJ stent group than the non-stent group (13.90 ± 5.03 vs 9.75 ± 4.06, $p < 0.001$) showing more intense lower urinary tract symptoms. On the same note, the scores of postoperative sexual function were significantly lower in the DJ stent group (12.42 ± 4.26 vs 10.48 ± 2.69, $p = 0.005$) indicating transitory sexual dysfunction that accompanies the insertion of the stent. (Table 2)

Table 2. Comparison of operative outcomes, IPSS, and sexual function scores between DJ stent and non-stent groups at 3 months (n = 110)

Variable	DJ Stent (Mean ± SD)	No Stent (Mean ± SD)	t	P-Value
Operative Time (min)	52.91 ± 14.95	55.78 ± 15.59	0.986	0.326
Blood Loss (ml)	66.36 ± 32.83	67.53 ± 32.11	0.188	0.851
Postoperative IPSS (3 months)	13.90 ± 5.03	9.75 ± 4.06	4.763	0.001
Postoperative Sexual Function Score (3 months)	12.42 ± 4.26	10.48 ± 2.69	2.865	0.005

DISCUSSION

This research compared the endourological procedures with or without the insertion of the double J ureteral stents on the postoperative lower urinary tract symptoms and sexual function. The results show that; similarities in the duration of operative time and intraoperative blood loss were not significant between groups, however, patients with a double J stent have poorer lower urinary tract symptoms (increased IPSS scores) and an increased reduction in overall sexual function scores at three months after the procedure [911]. In line with the earlier reports, the insertion of a double J stent did not significantly extend the duration of operation or augment the loss of blood during the operation, which affirmed that the insertion of stents is a low-load, routine action of endourological surgeries [1,2,12]. This reinforces the clinical perspective that the placement of a stent ought to be founded on clinical requirement and not the issue of operative complexity.

Nevertheless, the IPSS score of patients in the stent group was much higher than that of the non stent group (13.90 ± 5.03 vs 9.75 ± 4.06; $p < 0.001$) indicating stronger irritative urinary symptoms. This observation is in line with the literature that ureteral stents usually result in lower urinary tract effects (frequency, urgency, dysuria, and flank pain) which negatively impact patient quality of life [10,1315]. The symptoms of ureteral stent discomfort syndrome have been sufficiently detailed and the symptoms continue to persist up to the time the stent is removed [14,16].

Notably, the postoperative sexual functioning scores also showed a considerable drop in stent patients (12.42 ± 4.26 vs 10.48 ± 2.69; $p = 0.005$). The same has been observed in both men and women, in which the existence of a ureteral stent was linked to temporary sexual dysfunction, probably because of the urinary symptoms, pelvic pain, and psychological torture [17-19]. Although these effects are normally short-lived, they emphasize a crucial aspect of postoperative morbidity to be considered when counseling patients [18,21]. These findings have serious clinical implications. Routine stenting can be avoided in patients whose stents may not be necessary like in the case of complete stone clearance without ureteric damage that would lead to postoperative urinary complaints and avoid reduction in sexual functioning [19].

The strengths of this study are that it can be characterized by prospective data collection and standardized and validated tools that were used to measure urinary and sexual outcomes. Its weaknesses, however, are that it is a single center design with a relatively brief follow-up period and may not be able to reveal the full course of stent-associated symptoms. More comprehensive understanding will be made through future studies that have longer follow-up and assessment of the quality of life in general. Conclusively, despite the fact that the stent insertion of double J insertion does not have any significant effects on the length of operation or blood loss, it is correlated with the emergence of more lower urinary tract symptoms and temporary sexual dysfunction. These findings substantiate the selective application of stents and emphasize the necessity to counsel the patients concerning the potential postoperative urinary and sexual side effects.

CONCLUSION

Endourological procedures with the placement of a double J ureteral stent does not significantly influence the time spent and blood loss during the operation. It is however linked with greater postoperative lower urinary tract symptoms and temporary loss of sexual ability as opposed to patients who do not get a stent. This evidence suggests that the double J stents are selectively and carefully used, but preoperative counseling of the patients with regard to urinary and sexual side effects is important. It may be beneficial to avoid placing stents that are not clinically needed, or reduce the stent dwell time, to enhance postoperative comfort, quality of life, and sexual life.

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