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Original Research

The impact of Double J stent on the quality of sexual life and job performance

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Summary

Introduction: Double-J ureteral stents (DJ) are commonly used in urological surgeries. This material averagely remains in the body for four to ten weeks. *Objective:* In this prospective study, the effect of these catheters on the sexual life, the quality of life (QoL), business performance, pain, and urinary symptoms were investigated. *Material and Methods:* The data of the patients operated between September 2012 and September 2014 were evaluated. The Ureteric Stent Symptom Questionnaire (USSQ), the questionnaires of the QoL, job performance, pain, urinary symptoms, and the sexual quality of life were separately obtained two weeks after implantation and two weeks after removal of DJ. *Results:* The median age of 90 patients (38 females, 52 males) was 40 (range 23-60) years of age. There was a significant difference between the results obtained with and without DJ stent for all the assessed parameters ($p < 0.05$). *Conclusions:* Double-J ureteral catheter adversely affects the life of the patients. Different treatment modalities are required to reduce the adverse effects of this procedure.

Key words: Ureter; Stent; Quality of life; Sexual life.

Introduction

Double-J ureteral stents (DJ) are commonly used in percutaneous nephrolithotomy, pyeloplasty, open and endoscopic ureteral surgeries, and as a prophylactic modality in the risk of upper urinary tract obstruction due to internal and external reasons. Besides the benefits of these ureteral stents, there are some undesirable side effects such as urinary tract infections, pain, and hematuria. These symptoms significantly affect the quality of life (QoL) of patients, general health, work performance in both sexes, and cause serious effects on sexual life [1-3]. Pathophysiology of stent-related symptoms are not clearly known. In some studies, several factors related on stent length, diameter, material, softness, position and loop's integrity, and the procedure of stent implantation were investigated [4-7]. However, these related studies are limited in explaining the pathophysiology. In the present study, the effect of these catheters on sexual life, (QoL), business performance, pain, and urinary symptoms were investigated.

Materials and Methods

The present study was approved by the present hospital local ethics committee (Number 2012-01196). Patients who underwent a 9F rigid ureteroscope, through the orifice, the stone was visualized. Via the working channel of ureteroscope, with a 560 micron laser probe, lithotripsy was performed. Ureterorenoscopic surgery (URS) for ureteral stones (5-15mm) and had double-J (D-J) stents (6F 24-26 cm poliuretan) implanted between September 2012 and September 2014 were included in the study. However, patients with complicated procedures, postoperative complications, previous open surgeries, chronic diseases, and drug addictions were excluded. The Ureteric Stent Symptom Questionnaire (USSQ) and questionnaires related to QoL, and six questions score rated from 6 (QoL is very good) to 30 (QoL is very poor), job performance, and three questions score rated from 3 (jop performance is very good) to 15 (jop performance is very poor), pain, and 10 cm linear visual analogue scale (VAS) score rated from 0 (no pain) to 10 (unendurable pain), and body ache eight questions score rated from 8 (no pain or discomfort) to 40 (excessively over pain or discomfort), urinary symptoms and 11 questions score rated from 11(no urinary symptom) to 54 (urinary symptom is excessively over), sexual quality of life and six questions score rated from 5 (sexual quality of life is very good) to 19 (sexual quality of life is very poor) were separately obtained two weeks after implantation and two weeks after removal of the D-J stents.

The data median (minimum–maximum) was determined after repeated operations and after differences in stents were detected via use of the Friedman test. Using a Bonferroni correction for multiple comparisons, the Wilcoxon test was used. $P < 0.05$ was considered significant. The data were analyzed using the SPSS software program version 22.0.

Results

Between September 2012 and September 2014, 90 patients were enrolled in the study. Of the participants, 42.3% (38) were female, and 57.3% (52) were male; the mean age was 44 (23– 70 years). With respect to education level, 33% (30) of the patients had a university education, 41.8% (37) had a high school education, 3.3% (3) had a secondary

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Table 1. — *Patient characteristics.*

Age (years)	44 (23-70)
Gender	38 Female, 52 male
Weight (kg)	78 (51-100)
Size (cm)	167 (150-185)
Education level	3 (0-4)
Stone sizes (mm)	10 (5-15)
Operation time (min)	15 (5-30)

Education level: 0 - literate, 1- elementary school, 2 - middle school, 3 - high school , 4 - University.

school education, 18.6% (17) had an elementary school education, and 90 3.3% (3) were literate (Table 1).

Most of the D-J stent patients were in general health: 40.3% were able to perform light physical activity with no effort, while 79.2% stated that they had some difficulty while performing heavy physical activity. The proportion of patients who were satisfied with their social lives was 29.2%, while 70% expressed dissatisfaction. The proportion of patients who stated that they felt "peaceful and quiet" was 62.5%, while 15.3% of the D-J stent patients said that they needed help. Patients found that the D-J stents adversely affected their quality of life ($p = 0.002$) (Table 2).

Kidney pain was associated with 90.3% of the patients who stated that they had D-J stents. While the percentage of patients who complained of flank pain was 45.8%, the proportion of patients with grade 7, and above visual pain was calculated as 72.1%. Of the patients included in the study, 37.5% of the division of sleep occasionally complained because of the D-J stents. The proportion of patients with D-J stents who experienced burning or pain during urination was 90.3%; as a result, 26.4% used painkillers, and 51.4% of patients who experienced pain associated with their D-J stents independently of other complaints stated that the stents affected their daily lives. Some patients complained that the D-J stent increased their pain ($p < 0.001$) (Table 2).

Due to the stent in patients less than an hour to an hour and 71.3% said they felt the need to urinate. Although they already complained of nocturia without the DJ present at. Moreover, 76.1% of the patients developed urination urgency due to the stent, 23.6% developed urge incontinence, and 47.3% developed urinary incontinence without sensation. The proportion of those who felt unable to empty their bladder was calculated to be 70.1%, while the percentage of patients who experienced burning and hematuria during urination in 77.8% of the patients 114 was 91.7%. Of the D-J stent patients, 88.9% stated that they were uncomfortable about processing their D-J stents at work ($p < 0.001$) (Table 2). Of those employed, 87.5% of the patients worked full time, 70% of which conducted their work and 30% requested permits of which 20.9% requested 1-4 days, and 22.3% with DJ they had permission to use more than five days. Of the patients, 59.6% reported having difficulty performing daily activities. In addition, D-J stents were found to affect work performance in poor patients ($p < 0.001$) (Table 2). Of the precipitants, 79.2% stated that they had an active sex life despite the D-J stent, while 12.5% said that they did not have an active sex life. In 81.4% of the patients, sex lives suffered from pain during sexual intercourse that was associated with the D-J stent. DJ's sexual satisfaction included 41.7% that were undecided and dissatisfied, while 15.1% were calculated to be 37.5%. It was observed that D-J stents adversely affected the participants' sex lives ($p < 0.001$) (Table 2).

Discussion

In urologic practice, the insertion of D-J stents causes discomfort in about three-quarters of the patients. Ureteral stents implanted in patients are generally associated with the following side effects: issues with storage and/or voiding, over-active bladder symptoms, hematuria, and a variety of other symptoms, such as pain. These are believed to be inevitable stentrelated symptoms that may impair the patient's quality of life [2]. The pathophysiology of the symptoms associated with stenting is uncertain. With low probability, these symptoms may be due to smooth muscle spasm as a result of local irritation of α-1D-receptor-rich nerve tissues which are located at the bladder mucosa and the lower end of the ureter, as in benign prostatic hyperplasia [8-10].

The length of the stent to overcome the discomfort associated with the stent crimped diameter and the diameter and angle of the bladder is made of different stents. In previous studies, a tail stent model (stent of a proximal 7F medium diameter, which, even at a lower 3F is a decrease in normal diameter) standard 7F D-J stent compared to 60 diseased working tail stents, have found a significant reduction in the symptoms of patients who used [11–12]. In contrast, other studies using the DJ stent diameter associated with the described symptoms could not find a relationship between stent lengths. The symptoms associated with D-J stent may be due to movement of the D-J stent at the lower end of the ureter or within the bladder in relation to body movements or position[13–15].

In a study by Joshi *et al.*, urinary symptoms, including incontinence and hematuria, were observed in 78% of patients with stents [16]. In the same study, more than 80% of the patients experienced pain that affected their daily lives, 38% experienced sexual dysfunction, and 58% reported de-terioration in their work performance. The work we are doing and where they need 90% of patients affected by the pain of everyday life and hence physicians a 70.6% was de-tected in 91.7% of urinary incontinence. Of the 79% of study participants with active sex lives, 12% reported that their D-J stents had a disturbing influence on their sexual activity; the ratio of those experiencing impaired sexual function was found to be 37.5%. For the most part, patients suffered from pain in the groin and flank areas during sexual intercourse. After

Table 2. — *Comparison of symptoms and quality of life scales in patients with stent and stent removal .*

Total number of patients = 90	With D-J	After removal of the D-J	*p* value ($p < 0.05$)
Quality of life (QoL)	15.56 (11-20)	14.4 (8-17)	0.002
Urinary symptoms	34.69 (16.5-42.7)	17.13 (12-28.75)	< 0.001
Body ache	28.18 (12-50)	11 (8-43)	< 0.001
Jop performance	14 (5-69)	6.5 (5-23)	< 0.001
Sexual quality of life	12.26 (6-24)	10.2 (6-17)	< 0.001
Visual analogue scale (VAS)	8 (2-10)	0 (0-7)	< 0.001

complete removal of the D-J stent, the pain symptoms associated with the stent disappear. The patient's psychological state affects the quality of his or her sex life. Psychology and foreign body sensation, illness, and personal factors may have effects on the body. The D-J stent may have been the underlying cause of these complaints, and, as a result, increased their importance or occurrence. As a result, the D-J stent itself can affect the sexual lives of people in negative ways, both directly and indirectly. This finding was found to be statistically significant in the present study ($p < 0.001$).

In a previous study, it was found that 58% of stent patients experienced deterioration in their work performance [16]. Of the participants in the present study, 79.2% worked full-time, 2.8% worked part-time, and 18% were retired or did not work for other reasons. Of these participants, 46.8% stated that they were annoyed because they had to stay in bed one or more days as the result of their D-J stents. In addition, other people were forced to decrease their work in 30% of the employed people participating in this study and stated that they had to use permits. The rate of use was calculated as 43.2% and therefore was allowed. Though efforts were made to make up for the missed work hours, as much as 70% of the work time of these patients were missed as a result of issues related to their D-J stents; the proportion of time including short breaks were found in 30%. About 21%–22% of D-J patients who were employees were using five work permissions between one to four days and stated that they use even more permissions. Permission use and full-time employees in 33.4% in the workplace said they made some changes. In this study, it was found that D-J stents had statistically significant adverse effects ($p < 0.001$) on the participants' work performance and work quality.

Conclusions

This study revealed that irritative, D-J stent-related symptoms negatively affect every aspect of people's lives. Therefore, these symptoms must be considered when contemplating D-J stent insertion. The present authors believe that personal factors significantly affect the formation of these symptoms; therefore, a variety of treatment modalities are needed to reduce these unpleasant symptoms.

References

[1] Joshi H.B., Stainthorpe A., Keeley F.X. Jr., Macdonagh R., Timoney A.G.: "Indwelling ureteral stents: evaluation of quality of life to aid outcome analysis". *J. Endourol.*, 2001, *15*, 151.
[2] Joshi H.B., Newns N., Stainthorpe A., MacDonagh R.P., Keeley F.X. Jr., Timoney A.G.: "Ureteral stent symptom questionnaire: development and validation of a multidimensional quality of life measure". *J. Urol.*, 2003, *169*, 1060.
[3] Sighinolfi M.C., Micali S., de Stefani S., Mofferdin A., Grande M., Giacometti M., *et al.*: "Indwelling ureteral stents and sexual health: a prospective, multivariate analysis". *J. Urol.*, 2007, *178*, 229.
[4] Rane A., Saleemi A., Cahill D., Sriprasad S., Shrotri N., Tiptaft R.: "Have stent-related symptoms anything to do with placement technique?" *J. Endourol.*, 2001, *15*, 741.
[5] Erturk E., Sessions A., Joseph J.V.: "Impact of ureteral stent diameter on symptoms and tolerability". *J. Endourol.*, 2003, *17*, 59.
[6] Lennon G.M., Thornhill J.A., Sweeney P.A., Grainger R., Mc-Dermott T.E., Butler M.R.: "'Firm' versus 'soft' double pigtail ureteric stents: A randomised blind comparative trial". *Eur. Urol.*, 1995, *28*, 1.
[7] Liatsikos E.N., Gershbaum D., Kapoor R., Fogarty J., Dinlenc C.Z., Bernardo N.O., *et al.*: "Comparison of Urinary Symptoms and Ureteral Double-J Stenting symptoms related to positioning of double-pigtail stent in upper pole versus renal pelvis". *J. Endourol.*, 2001, *15*, 299.
[8] Thomas R.: "Indwelling ureteral stents: impact 207 of material and shape on patient comfort". *J. Endourol.*, 1993, *7*, 137.
[9] Duvdevani M., Chew B.H., Denstedt J.D.: "Minimizing symptoms in patients with ureteric stents". C*urr. Opin. Urol.*, 2006, *16*, 77.
[10] Damiano R., Autorino R., de Sio M., Giacobbe A., Palumbo I.M., D'Armiento M.: "Effect of tamsulosin in preventing ureteral stent-related morbidity: a prospective study". J. *Endourol.*, 2008, *22*, 651.
[11] Beiko D.T., Knudsen B.E., Denstedt J.D.: "Advances in ureteral stent design". *J. Endourol.*, 2003, *17*, 195.
[12] Dunn M.D., Portis A.J., Kahn S.A., Yan Y., Shalhav A.L., Elbahnasy A.M., *et al.*: "Clinical effectiveness of new stent design: randomized single-blind comparison of tail and double-pigtail stents". *J. Endourol.*, 2000, *14*, 195.
[13] Ho C.H., Chen S.C., Chung S.D., Lee Y.J., Chen J., Yu H.J., Huang K.H.: "Determining the appropriate length of a double-pigtail ureteral stent by both stent configurations and related symptoms". *J. Endourol.*, 2008, *22*, 1427.
[14] Damiano R., AutorinoR., De Sio M., Cantiello F., Quarto G., Perdonà S., *et al.*: "Does the size of ureteral stent impact urinary symptoms and quality of life? A prospective randomized study". *Eur. Urol.*, 2005, *48*, 673.
[15] Chew B.H., Knudsen B.E., Nott L., Pautler S.E., Razvi H., Amann J., Denstedt J.D.: "Pilot study of ureteral movement in stented patients: first step in understanding dynamic ureteral anatomy to improve stent comfort". *J. Endourol.*, 2007, *21*, 1069.
[16] Joshi H.B., Stainthorpe A., MacDonagh R.P., Keeley F.X. Jr, Timoney A.G., Barry M.J.: "Indwelling ureteral stents: evaluation of symptoms, quality of life and utility". *J. Urol.*, 2003, *169*, 1065.

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