

Acta Med. Okayama, 2007  
Vol. 61, No. 4, pp. 199–203  
Copyright©2007 by Okayama University Medical School.

Acta Medica  
Okayama

<http://www.lib.okayama-u.ac.jp/www/acta/>

*Original Article*

## Health-related Quality of Life after Radical Cystectomy for Bladder Cancer in Elderly Patients with an Ileal Conduit, Ureterocutaneostomy, or Orthotopic Urinary Reservoir: A Comparative Questionnaire Survey

Takashi Saika\*, Ryoji Arata, Tomoyasu Tsushima, Yasutomo Nasu,  
Bunzo Suyama, Katsuji Takeda, Shin Ebara, Daisuke Manabe,  
Tomoko Kobayashi, Ryuta Tanimoto, Hiromi Kumon and  
Okayama Urological Research Group

*Department of Urology, Okayama University Graduate School of Medicine,  
Dentistry and Pharmaceutical Sciences, Okayama 700-8558, Japan*

To compare the health-related quality of life of elderly patients after radical cystectomy for bladder cancer in urinary diversion groups: ileal conduit, ureterocutaneostomy, or orthotopic urinary reservoir. The 109 participating elderly patients aged 75 or older completed self-reporting questionnaires: the QLQ-C30, and on satisfaction with urinary diversion methods. Fifty-six patients had undergone constructions for ileal conduit diversion, 31 for ureterocutaneostomy, and 22 for orthotopic urinary reservoir (OUR). The median follow-up period for each group was 4.0 years (range 0.3–11.2), 4.5 years (range 0.3–18.0), and 3.3 years (range 0.3–6.7), respectively. Regardless of the type of urinary diversion, the majority of patients reported having good overall quality of life, although with some problem of pain. No significant differences among urinary diversion subgroups were found in any quality of life area in the QLQ-C30 questionnaire. More patients in the OUR sub-group felt disappointment than those in the ileal conduit or cutaneostomy sub-groups. However, a questionnaire which asked which diversion method would be preferable showed a trend that more patients in the OUR subgroup would have chosen the same one. Health-related quality of life appeared relatively good in these 3 groups. Patient demands and expectations may be so different from the results that the details of each urinary diversion method should be explained thoroughly. OUR construction could be a candidate even for elderly patients.

**Key words:** bladder cancer, cystectomy, neo-bladder, urinary diversion, QOL

The number of elderly patients who are candidates for radical cystectomy as treatment

for bladder cancer is increasing. For younger patients, orthotopic neobladder replacement following radical cystectomy has gained popularity; there are many reports of satisfactory post-operative quality of life [1–12]. In elderly patients with bladder cancer, however, the standard methods of urinary diversion

Received November 15, 2006; accepted February 8, 2007.

\*Corresponding author. Phone: +81-86-235-7287; Fax: +81-86-231-3986  
E-mail: saika@cc.okayama-u.ac.jp (T. Saika)

have been ileal conduit or ureterocutaneostomy. These methods, however, may cause pouch problems, such as the difficulty of self-pouching. Orthotopic urinary reservoir (OUR), on the other hand, may disturb the elderly patient's QOL by weakening abdominal pressure and causing urinary retention or increasing night time urine volume resulting in incontinence. To better inform elderly patients of their choices of urinary diversion, we investigated health-related quality of life in elderly patients who underwent OUR, ileal conduit, or ureterocutaneostomy following radical cystectomy for bladder cancer. To our knowledge, no such investigations to date have been reported.

### Patients and Methods

The 109 participating elderly patients aged 75 or older in our study had undergone radical cystectomy for bladder cancer at Okayama University Hospital and in 13 collaborating hospitals with a follow-up period of at least 3 months.

Two distinct types of urinary tract reconstruction were discussed with patients and their families: cutaneous diversion with ileal conduit or ureterostomy, and orthotopic urinary reservoir substitution. Patients with positive lesions at the bladder neck, renal dysfunction (creatinine clearance < 50 mg/dL), impaired heart function (ejection fraction < 45%), or senile dementia were excluded from consideration for orthotopic urinary reservoir reconstruction.

Fifty-six patients (42 male, 14 female) had undergone ileal conduit diversion, 31 (25 male, 6 female) uretero-cutaneostomy, and 22 (20 male, 2 female) orthotopic urinary reservoir. Age distributions of these groups were 75.0–92.0 years (median 80.1), 75.0–90.1 years (median 81.4), and 75.0–90.5 years (median 78.5), respectively. The median post-operative follow-up in each group was 4.0 years (range 0.3–11.2), 4.5 years (range 0.3–18.0) and 3.3 years (range 0.3–6.7), respectively.

Health related QOL (HRQOL) assessment was performed using the European Organization for the Research and Treatment of Cancer Quality of Life Core Questionnaire (EORTC-QLQ-30C) [13], developed to measure basic components of HRQOL that are similar for most malignancies, which comprises 5

functional scales covering physical, role, emotional, cognitive and social aspects, one scale of overall health status, and overall HRQOL. There are also 3 symptom scales of fatigue, nausea/vomiting and pain, and 6 single items that deal with dyspnea, insomnia, appetite loss, constipation, diarrhea, and financial difficulties caused by the disease or its treatment. Questions on the physical scale were answered by a dichotomous response scale (yes/no), while overall HRQOL was scored from 1 to 7 (very poor to excellent). The other items were answered through a Likert scale and responses graded from 1 to 4 (1 = not at all, 4 = very much). All scores were linearly transformed to a 0–100 scale. For functional and scales overall higher scores represent a better outcome on HRQOL, whereas for symptom and single-item scales higher scores correspond to more problems and a reduced HRQOL.

In addition to the above, a questionnaire designed by the Department of Urology in collaboration with the Department of Psychiatry was used for evaluating patient satisfaction with the selected urinary diversion. QOL questionnaires and a cover letter explaining the nature of the survey were mailed to all participants of the study. If there was no reply a reminding letter was sent, followed by a telephone call, if necessary.

The results of questionnaires were converted into scores and statistically analyzed using the Mann-Whitney U-test.

### Results

Regardless of type of urinary diversion a majority of patients reported good functional scoring (Fig. 1A). As for the symptomatic score, only the element of pain showed a mild degree problem in each group (Fig. 1B). No significant differences among urinary diversion subgroups were found in any quality of life area in the QLQ-C30 questionnaires.

The questionnaire "Does Urinary Diversion Disturb Your Life?" revealed that not many patients felt disturbance with their urinary diversion. Although no statistical difference between any urinary diversion group was recognized in this questionnaire, a small number of patients in both the ileal conduit and cutaneostomy sub-groups felt severe disturbance while no one in the OUR sub-group felt any (Fig. 2A).

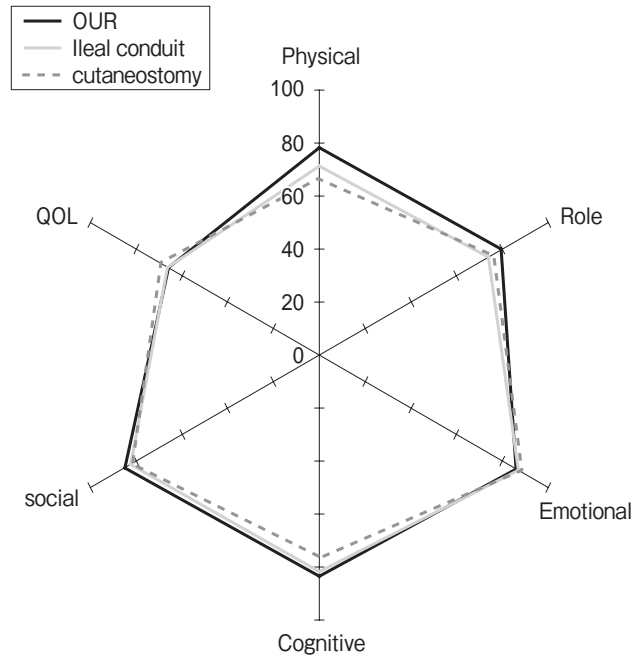


Fig. 1A EORTC QLQ-C30 Functional scales: A high scale score represents a high/healthy level of functioning (0-100). No statistically significant differences on any items.

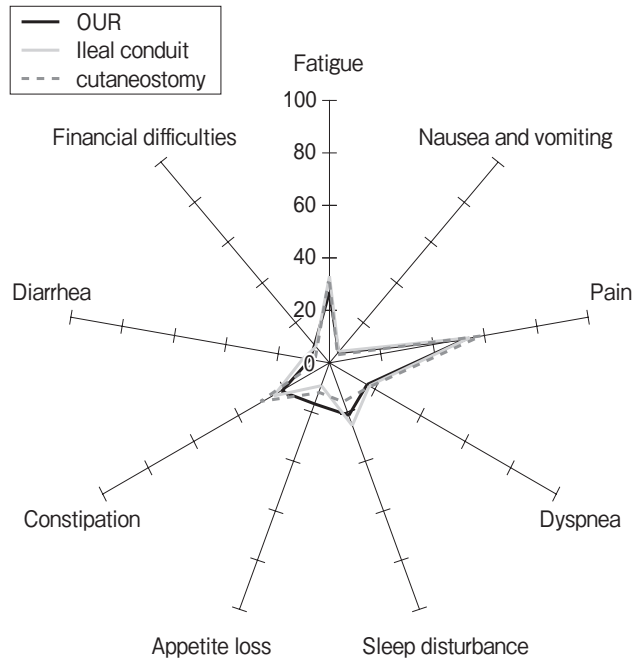


Fig. 1B EORTC QLQ-C30 Symptom scales: A high scale score represents a high level of symptomatic problems (0-100). No statistically significant differences on any items.

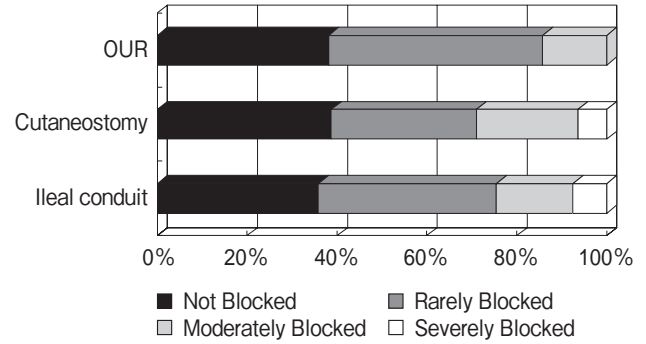


Fig. 2A Is urinary diversion an obstacle to patients' life?: In a questionnaire asking "Does Urinary Diversion Disturb Your Life?" patients selected 1 from 4 answers.

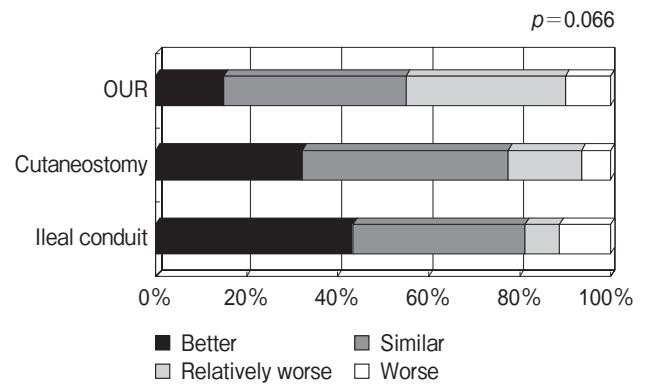


Fig. 2B Did urinary diversion meet patients' satisfaction as pre-operational expectations?: Patients selected 1 from 4 answers.

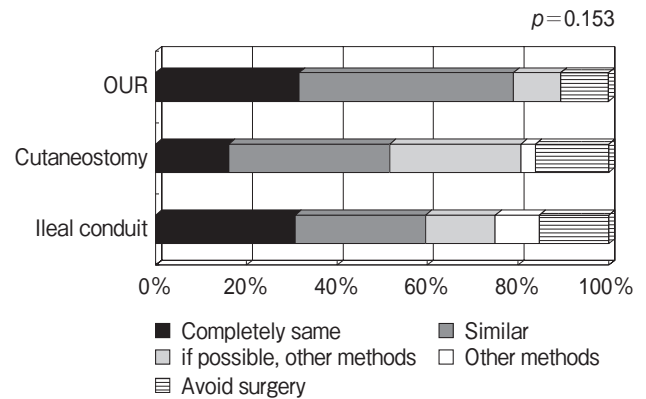


Fig. 2C Which urinary diversion method would be selected if it could be?: Patients selected 1 from 5 answers.

Regarding satisfaction with urinary diversion, more patients in the OUR sub-group felt disappointment than those in ileal conduit or cutaneostomy sub-groups (Fig. 2B). However, a questionnaire which asked which diversion method would be preferable showed a trend that more patients in the OUR subgroup would have chosen the same one (Fig. 2C).

## Discussion

It is commonly held by urological surgeons that there are quality of life differences between various diversions after radical cystectomy for bladder cancer. While we had concluded that neobladder reconstruction following cystectomy for bladder cancer is indicated in elderly patients, because age is not a critical factor in the selection of urinary diversion method [14], no study conclusively documents that one form of diversion is superior to another in terms of HRQOL in elderly patients.

In the current results of functional scoring in QLQ-C30, physical functioning of the OUR group showed a better trend ( $p=0.08$ ) than that of the cutaneostomy group. OUR construction may maintain better physical functioning in elderly patients in comparison to urinary stoma formation. One possible reason is that stoma management is difficult for elderly patients. However, since our study does not have baseline or pre-operative data, the possibility of baseline differences between sub-groups cannot be ignored. The lack of baseline assessment of HRQOL would need to be estimated before cystectomy and take place in a prospective study.

Despite the relatively high pain score in all sub-groups, the results of the symptom scores in QLQ-C30 showed good scoring in all patients. Radical cystectomy and urinary diversion may not cause symptomatic disturbance, even in elderly patients.

There was no significant difference in the QLQ-C30 scores among the urinary diversion methods. A similar trend has been reported in some comparative studies of post-operative QOL between OUR and ileal conduit in relatively younger patients, although incontinent urinary diversions compromised physical and psychological status [1-12]. The authors were unable to detect any difference in QOL between ileal conduit and OUR, with both groups younger than our patients having high scores despite urinary

incontinence being more common after OUR reconstruction. One possible reason discussed in the reports was that the instruments used were insufficiently sensitive to pertinent differences between the groups, especially if the effects were small.

Although questionnaires have been previously used in QOL studies of patients with bladder cancer, neither instrument was substituted for the other, so direct comparison of the results obtained with each is impossible [10]. Our results, therefore, can not be compared with prior reports with younger patients, especially, in terms aging.

In general, the limitation of this type of study design is selection bias, *e.g.*, the patient's preoperative health status may have been different prior to cystectomy which may in turn have affected the choice of diversion. However, since most functional/symptomatic factors of QLQ-C30 in the current results are relatively good and similar in all sub-groups, preoperative health status may have been similar between sub-groups.

Some patients in the ileal conduit and cutaneostomy sub-groups felt severe disturbance although no one in the OUR sub-group felt any. Fewer patients with OUR (14%) felt moderately severe disturbance than patients with stoma (25% moderately severe or severe). Stoma formation therefore might lead to some disturbance due to lost body shape or pouching.

On the other hand, lower satisfaction than pre-operative expectations in many patients with OUR might be the result of excessive positive expectations about OUR, such as "bladder substitution must be a brand-new bladder". The surgeon should inform patients about the merits and demerits of OUR. Our current results can provide additional information.

More patients in the OUR subgroup would chose the same urinary diversion than in other sub-groups. From these results, OUR construction can be one strong candidate for urinary diversion even in elderly patients with bladder cancer.

In conclusion, health-related quality of life appeared relatively good in these 3 groups. Although no obvious differences were recognized in functional and symptomatic QOL between the 3 urinary diversion methods, demands and expectations may be so different that the details of each urinary diversion method should be explained to elderly patients

thoroughly. OUR construction could be a candidate for even elderly patients.

### References

1. Madersbacher S and Studer UE: Contemporary cystectomy and urinary diversion. *World J Urol* (2002) 20: 151–157.
2. Hautmann RE: Which patients with transitional cell carcinoma of the bladder or prostatic urethra are candidates for an orthotopic neobladder? *Curr Urol Rep* (2000) 1: 173–179.
3. Hart S, Skinner EC, Meyerowitz BE, Boyd S, Lieskovsky G and Skinner DG: Quality of life after radical cystectomy for bladder cancer in patients with an ileal conduit, cutaneous or urethral Kock pouch. *J Urol* (1999) 162: 77–81.
4. Fujisawa M, Isotani S, Gotoh A, Okada H, Arakawa S and Kamidono S: Health-related quality of life with orthotopic neobladder versus ileal conduit according to the SF-36 survey. *Urology* (2000) 55: 862–865.
5. McGuire MS, Grimaldi G, Grotas J and Russo P: The type of urinary diversion after radical cystectomy significantly impacts on the patient's quality of life. *Ann Surg Oncol* (2000) 7: 4–8.
6. Hardt J, Filipas D, Hohenfellne R and Egle UT: Quality of life in patients with bladder carcinoma after cystectomy: first results of a prospective study. *Qual Life Res* (2000) 9: 1–12.
7. Conde Redondo C, Estebanez Zarranz J, Rodriguez Tovez A, Amon Sesmero J, Alonso Fernandez D and Martinez Sagarra JM: Quality of life in patients treated with orthotopic bladder substitution versus cutaneous ileostomy. *Actas Urol Esp* (2001) 25: 435–444.
8. Hobisch A, Tosun K, Kinzl J, Kemmler G, Bartsch G, Holtl L and Stezl A: Life after cystectomy and orthotopic neobladder versus ileal conduit urinary diversion. *Semin Urol Oncol* (2001) 19: 18–23.
9. Dutta SC, Chang SC, Coffey CS, Smith JA, Jack G and Cookson MS: Health related quality of life assessment after radical cystectomy: comparison of ileal conduit with continent orthotopic neobladder. *J Urol* (2002) 168: 164–167.
10. Mansson A, Davidsson T, Hunt S and Mansson W: The quality of life in men after radical cystectomy with a continent cutaneous diversion or orthotopic bladder substitution: is there a difference? *BJU Int* (2002) 90: 386–390.
11. Joniau S, Benijts J, Van Kampen M, De Waele M, Ooms J, Van Cleynenbreugel B and Van Poppel H: Clinical experience with the N-shaped ileal neobladder: assessment of complications, voiding patterns, and quality of life in our series of 58 patients. *Eur Urol* (2005) 47: 666–672.
12. Porter MP and Penson DF: Health related quality of life after radical cystectomy and urinary diversion for bladder cancer: a systematic review and critical analysis of the literature. *J Urol* (2005) 173: 1318–1322.
13. Aaronson NK, Ahmedjai S, Bergman B, Bullinger M, Cull A, Duez NJ, Filiberti A, Flechtner H, Fleishman SB and de Haes JC: The European Organization for research and treatment of cancer QLQ C-30: a quality-of-life instrument for use in international clinical trials in oncology. *J Natl Cancer Inst* (1993) 85: 365–376.
14. Saika T, Suyama B, Murata T, Manabe D, Kurashige T, Nasu Y, Tsushima T and Kumon H: Orthotopic neobladder reconstruction in elderly bladder cancer patients. *Int J Urol* (2001) 8: 533–538.