

Daily urine loss immediately after urethral catheter removal may be an effective predictor of long-term urinary incontinence following robot-assisted laparoscopic radical prostatectomy

Yoshihisa Matsukawa¹, Yasushi Yoshino¹, Takashi Fujita¹, Yasuhito Funahashi¹, Tsuyoshi Majima¹, Shohei Ishida¹, Masashi Kato¹, and Momokazu Gotoh¹

¹Nagoya University Graduate School of Medicine Department of Urology

June 22, 2020

Abstract

Purpose: Some patients who undergo robot-assisted laparoscopic radical prostatectomy (RARP) continue to experience long-term urinary incontinence (UI). This study aimed to evaluate easily obtainable factors that can predict long-term UI following RARP. **Materials and Methods:** A total of 315 patients who underwent RARP for localized prostatic cancer were analyzed. We separated the patients into two groups, namely, the Continence group and the Incontinence group, according to the presence or absence of UI at 12 months after surgery, and we compared the patients' characteristics and operative data to identify clinical signs associated with long-term UI. Additionally, correlations between these factors and postoperative urethral function were evaluated. Urinary continence was defined as both the use of 0 pads/per day and <2 g of urine lost using the 24-h pad weight test. **Results:** Of 315 patients, 250 (79.4%) achieved urinary continence and 65 (20.6%) had UI. Age, storage-related lower urinary tract symptoms before surgery, nerve-sparing surgery, and the 24-h urine loss immediately after urethral catheter removal significantly affected long-term UI after RARP. Multivariate logistic regression analyses revealed that the 24-h urine loss after catheter removal was a significant predictor of long-term UI. Receiver operating characteristic curve analysis identified a urine loss of 330 g/day as the optimal cutoff value, which yielded 92% sensitivity and 84% specificity, and it showed significant correlations with postoperative urethral function and the time to recover urinary continence. **Conclusion:** The 24-h urine loss immediately after urethral catheter removal may be the most reliable and useful predictor of long-term UI following RARP.

Daily urine loss immediately after urethral catheter removal may be an effective predictor of long-term urinary incontinence following robot-assisted laparoscopic radical prostatectomy

Yoshihisa Matsukawa¹, Yasushi Yoshino^{1, 2}, Takashi Fujita¹, Yasuhito Funahashi¹, Tsuyoshi Majima^{1, 3}, Shohei Ishida¹, Masashi Kato¹, and Momokazu Gotoh^{1, 4}

1. Department of Urology, Nagoya University Graduate School of Medicine, Nagoya, Japan

2. Department of Urology, Nagoya Medical Center, Nagoya, Japan

3. Department of Urology, Aichi Medical University School of Medicine, Nagoya, Japan

4. Japan Community Health Care Organization Chukyo Hospital, Nagoya, Japan

Running head: Predictor of long-term UI following RARP

Address correspondence to: Yoshihisa Matsukawa, M.D.

Department of Urology, Nagoya University Graduate School of Medicine

65 Tsurumai-cho, Showa-ku, Nagoya 466-8550, Japan

Tel: +81 52 744 2985, Fax: +81 52 744 2319, E-mail: yoshi44@med.nagoya-u.ac.jp

Word count:

Main text: 2433 words, Abstract: 252 words

Keywords : urinary incontinence; prostatectomy; catheter removal; urethral function; prognostic factor

ACKNOWLEDGEMENTS

We thank all patients for participating and all trial investigators for their contribution to the data acquisition and patient care.

CONFLICT OF INTEREST

This study has been not funded or supported by any company. All authors declare that they have no conflict of interest.

The following is the specific contributions of all authors.

Matsukawa: Protocol/project development, Acquisition of data, Data analysis, Data management, Manuscript writing

Yoshino: Protocol, Critical revision of the manuscript

Fujita: Acquisition of data

Funahashi: Data analysis

Majima: Acquisition of data, Data management

Ishida: Data analysis

Kato: Data management

Gotoh: Protocol/project development, Manuscript editing, supervision

List of abbreviations

robot-assisted laparoscopic radical prostatectomy (RARP); stress urinary incontinence (SUI); quality of life (QOL); radical prostatectomy (RP); maximum urethral closing pressure (MUCP); functional profile length (FPL); urinary incontinence (UI); membranous urethral length (MUL); magnetic resonance imaging (MRI); lower urinary tract symptoms (LUTS); postoperative day (POD); International Prostate Symptom Score (IPSS); overactive bladder symptom score (OABSS); urethral pressure profile (UPP).

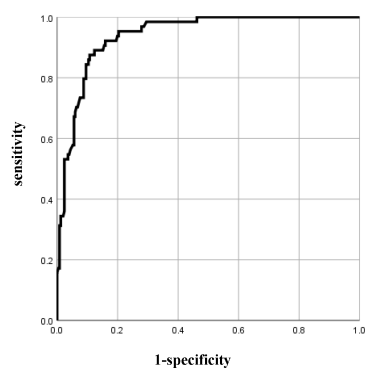
Hosted file

RARP_1\begin{CJK}{UTF8}{gbsn}\end{CJK}\selectlanguage{english}_main text0620.docx available at <https://authorea.com/users/335679/articles/461509-daily-urine-loss-immediately-after-urethral-catheter-removal-may-be-an-effective-predictor-of-long-term-urinary-incontinence-following-robot-assisted-laparoscopic-radical-prostatectomy>

Hosted file

table0620.docx available at <https://authorea.com/users/335679/articles/461509-daily-urine-loss-immediately-after-urethral-catheter-removal-may-be-an-effective-predictor-of-long-term-urinary-incontinence-following-robot-assisted-laparoscopic-radical-prostatectomy>

Fig. 1 (a)



(b)

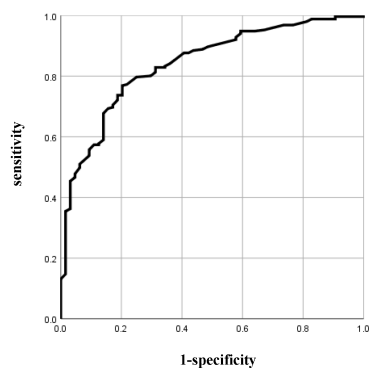
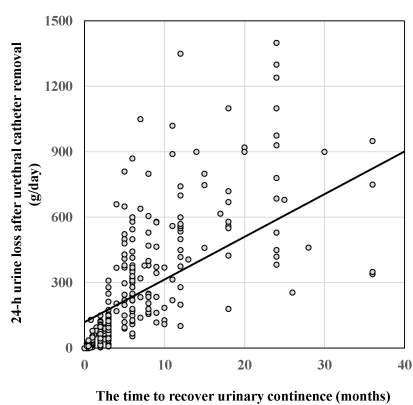


Fig. 2 (a)



(b)

