



# #142 Risk factors for acute urine retention after inguinal herniorrhaphy

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## INTRODUCTION

Acute urine retention (AUR) is a common postoperative complication in various surgeries. The incidence of AUR after inguinal herniorrhaphy was previously reported to range from 0.37% to 22.2%. [1] AUR may require urethral catheterization which causes significant discomfort, as well as increases the risk of catheter-related infection, risk for urethral trauma, and healthcare costs. [2]

Our study sought to determine the incidence of AUR and identify the risk factors for AUR following either open or laparoscopic herniorrhaphy.

## METHODS

Data for 475 male patients from a single center including baseline characteristics, comorbidities, and operative information were collected and reviewed retrospectively from the period of March 2018 to February 2019. AUR was defined as voiding difficulty after the surgery requiring catheter for bladder decompression. Statistical analysis was conducted for patient's characteristics, medical histories, anesthesia notes and postoperative notes to identify any risk factors that may lead to AUR. Variables tested against the dependent variable (AUR) were selected using chi-square tests for categorical variables and t tests for continuous variables.

Risk factors for the development of urinary retention in patients undergoing inguinal hernia repairs were deemed significant at  $P < 0.05$ . Multivariate logistic regression analysis was performed to examine the independent risk factors for AUR following inguinal herniorrhaphy.

## RESULTS

A total of 475 male patients were initially identified. 15 patients were excluded due to unstable vital signs at initial presentation (n=9), acceptance of local anesthesia (n=3), and other concurrent urolithiasis surgery (n=3).

Among 460 male patients who underwent inguinal repair (laparoscopic: 309; open: 151), 37 patients experienced AUR after the operation, which came to an incidence of 8%.

Old age, acceptance of open herniorrhaphy, spinal anesthesia, history of diabetes mellitus (DM), benign prostate hyperplasia (BPH) and usage of postoperative analgesics injection were statistically significant ( $P < 0.05$ ) upon univariate analyses. (Table 1. and Table 2.)

## RESULTS

Table 1.

Continuous variable	t value	p value
Age	4.67	<0.001
BMI	-1.83	0.07
Anesthesia time	0.14	0.89

Table 2.

Variable	POUR rate(%)	p value
DM Yes v.s No	15.7 v.s 7.1	0.03
HTN Yes v.s No	9.0 v.s 7.6	0.60
BPH Yes v.s No	15.4 v.s 4.5	<0.001
Operation method		
open	14.6	<0.001
TEP	4.9	
Spinal anesthesia		
GA	4.8	<0.001
SA	15.2	
Hernia site		
Bilateral	8.7	0.80
Unilateral	7.9	
Require analgesic injection (Yes v.s No)	17.5 v.s 4.7	<0.001

On multivariable analysis, old age (OR = 1.04, 95% CI = 1.00-1.07,  $P = 0.028$ ), DM (OR = 2.84, 95% CI = 1.09-7.39,  $P = 0.032$ ), BPH history (OR = 2.86, 95% CI = 1.24-6.56,  $P = 0.013$ ), acceptance of spinal anesthesia (OR = 2.67, 95% CI = 1.24-5.74,  $P = 0.012$ ), and postoperative analgesics injection use (OR = 3.98, 95% CI = 1.87-8.47,  $P < 0.001$ ) were identified as independent risk factors for postoperative urine retention.

## CONCLUSIONS

AUR occurs frequently after inguinal hernia repair and significantly causes patient discomfort and may delay patients discharge. In our study, 37 patients experienced AUR following either open or laparoscopic herniorrhaphy retrospectively, with an incidence of 8%.

Old age, history of DM and BPH, acceptance of spinal anesthesia and postoperative analgesics injection use were five independent risk factors for AUR following inguinal herniorrhaphy.

Predicting those who will develop AUR after the inguinal hernia repair can remind health care teams in the timely management of this complication and to help in prevention of this complication.

## REFERENCES

- [1] Darrah DM et al. Postoperative urinary retention. Anesthesiology Clinics 2009; 27:465-484
- [2] Stallard S, Prescott S (1988) Postoperative urinary retention in general surgical patients. Br J Surg 75:1141-1143