



# Comparison of Effectiveness of Pericatheter Retrograde Urethrography and Cystography in Detecting Urethrovesical Anastomosis

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## BACKGROUND

Radical prostatectomy(RP) is a challenging operation that demands high levels of surgical expertise and experience. RP can be accomplished with open or with minimally invasive laparoscopic or robot-assisted approaches. Regardless of the approach, complications of RP remain an important issue. Complication rates of the open approaches are approximately 2% to 10% for radical retropubic prostatectomy and 4% to 22% for radical perineal prostatectomy.<sup>1</sup> LRP (transperitoneal and extraperitoneal approaches) and RARP reach a complication rate of approximately 1.5% to 17.8% after the learning curve.<sup>2</sup> One of the most common short-term complications of RP is urinary urethrovesical anastomotic leakage.

## OBJECTIVES

Urethro-vesical anastomosis (UVA) is a critical point of prostatectomy. UVA leaking can prolong catheterization. Properly evaluation of UVA leaking is important to remove the catheter. We evaluate the method of confirming UVA leaking.

## VARIABLES / RESEARCH

### Controlled variables

- Retrograde urethrography

### Independent variable

- Cystography

### Dependent variable

- Minimal detectable volume of radiographic dye
- Pain scale during taking radiographic procedure

## MATERIALS & METHODS

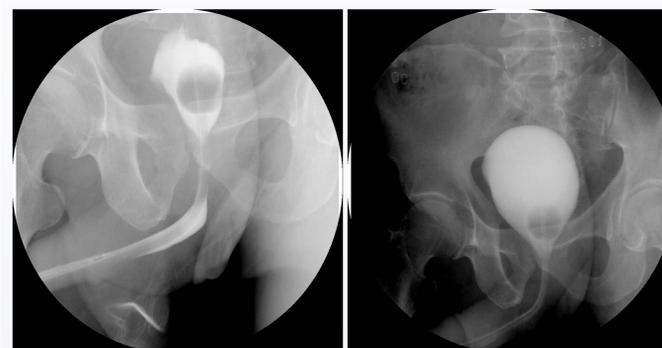
We prospectively analyzed 30 patients who underwent robot assisted laparoscopic prostatectomy for prostate cancer at our institute from march 2013 to February 2014. All patients underwent pericatheter retrograde urethrography(RGU) and cystography at postoperative days 7. We compared the ability of detection of UVA leaking at minimal filling of radiopaque dye and patient discomforts and ability of providing additional information about UVA. In cystography, bladder filling was stop at patients' urinary urge sense or 300cc of filling and 50cc dye was injected intraurethrally in pericatheter RGU. Patients discomfort was evaluated with visual analogue pain scale.

## RESULTS

Among 30 patients, UVA leaking was observed in 6 patients. Until postoperative 14 days, all patients could remove their urethral catheter without UVA leaking. Both methods detected UVA leaking of 6 patients at postop 7 days. RGU could detect UVA leaking at mean 15.6cc(10-25cc) of injection, cystography did it at mean 83.3cc(50-120cc). (P < 0.001). However, patient's pain scale during procedure were mean 6.45 in RGU, 3.75 in cystography (P <0.001). Cytography could understand the bladder shape and functional capacity more effectively rather than RGU.

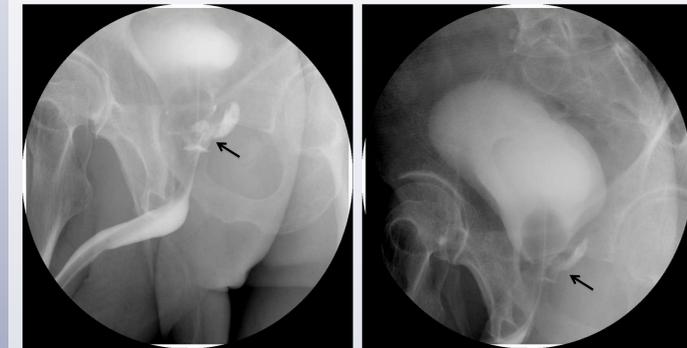
## RESULTS (Cont.)

Figure 1. Imaging studies in patient without urethrovesical anastomosis leaking at 8 postoperative days



Left: RGU with 25cc filling of dye, right: cystography with 350cc filling, there were no visible anastomosis site leaking

Figure 2. Imaging studies in patient with urethrovesical anastomosis leaking at 8 postoperative days



Left: RGU with 30cc filling of dye, right: cystography with 450cc filling, there were dye leaking in posterior aspect of urethrovesical anastomosis site

## CONCLUSIONS

RGU could detect the UVA leaking with less usage of filling fluid and finely described the pattern of leaking flow than cystography. However, RGU produced more pain during procedure and was less informative rather than cystography.

## REFERENCES

1. Lepor H and Kaci L: Contemporary evaluation of operative parameters and complications related to open radical retropubic prostatectomy. *Urology* 2003; **62**: 702.
2. Hakimi AA, Faleck DM, Sobey S et al: Assessment of complication and functional outcome reporting in the minimally invasive prostatectomy literature from 2006 to the present. *BJU Int* 2012; **109**: 26.

## ACKNOWLEDGEMENTS

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