



Original article

Technique and outcomes of bladder neck intussusception during robot-assisted laparoscopic prostatectomy: A parallel comparative trial

Hung-Jui Tan, M.D.^{a,b}, Siwei Xiong, M.D.^b, Aaron A. Laviana, M.D.^b, Ryan J. Chuang, B.S.^b, Eric Treat, M.D.^b, Patrick C. Walsh, M.D.^c, Jim C. Hu, M.D., M.P.H.^{b,d,*}

^a VA/UCLA Robert Wood Johnson Clinical Scholars Program, University of California, Los Angeles, CA

^b Department of Urology, University of California, Los Angeles, CA

^c Brady Department of Urology, Johns Hopkins Medical Institute, Baltimore, MD

^d Brady Department of Urology, Weill Cornell Medicine New York, New York

Received 28 December 2014; received in revised form 14 January 2015; accepted 15 January 2015

Abstract

Introduction: Postprostatectomy incontinence significantly impairs quality of life. Although bladder neck intussusception has been reported to accelerate urinary recovery after open radical retropubic prostatectomy, its adaption to robotic surgery has not been assessed. Accordingly, we describe our technique and compare outcomes between men treated with and without bladder neck intussusception during robot-assisted laparoscopic prostatectomy.

Materials and methods: We performed a comparative trial of 48 men undergoing robot-assisted laparoscopic prostatectomy alternating between bladder neck intussusception ($n = 24$) and nonintussusception ($n = 24$). Intussusception was completed using 3-0 polyglycolic acid horizontal mattress sutures anterior and posterior to the bladder neck. We assessed baseline characteristics and clinicopathologic outcomes. Adjusting for age, body mass index, race, and D'Amico risk classification, we prospectively compared urinary function at 2 days, 2 weeks, 2 months, and last follow-up using the urinary domain of the Expanded Prostate Cancer Index—Short Form.

Results: Baseline patient characteristics and clinicopathologic outcomes were similar between treatment groups ($P > 0.05$). Median catheter duration (8 vs. 8 d, $P = 0.125$) and rates of major postoperative complications (4.2% vs. 4.2%, $P = 1.000$) did not differ. In adjusted analyses, Expanded Prostate Cancer Index—Short Form urinary scores were significantly higher for the intussusception arm at 2 weeks (65.4 vs. 46.6, $P = 0.019$) before converging at 2 months (69.1 vs. 68.3, $P = 0.929$) after catheter removal and at last follow-up (median = 7 mo, 80.5 vs. 77.0; $P = 0.665$).

Conclusions: Bladder neck intussusception during robot-assisted laparoscopic prostatectomy is feasible and safe. Although the long-term effects appear limited, intussusception may improve urinary function during the early recovery period. © 2016 Published by Elsevier Inc.

Keywords: Comparative study; Incontinence; Prostatectomy; Prostate neoplasm

1. Introduction

Despite the widespread adoption of the robotic platform, rates of postprostatectomy incontinence continue to vary widely, affecting 4% to 31% of men over the long term and even more individuals during the early recovery period [1].

This research was supported by funding from the VA Office of Academic Affiliations through the VA/Robert Wood Johnson Clinical Scholars Program (H.T.) and by the National Institutes of Health Training, Grant no. T32-DK-07789 (E.T.).

* Corresponding author. Tel.: +212-746-4600; fax: +212-746-8396.

E-mail address: jch9011@med.cornell.edu (J.C. Hu).

Postprostatectomy incontinence negatively affects patient satisfaction and quality of life, often leading to regret among men opting for radical prostatectomy as their treatment for prostate cancer [2]. Among those in need of definitive therapy, fear of temporary or lifelong urinary incontinence has led some men to bypass radical prostatectomy in favor of radiotherapy or newer therapies with limited long-term outcomes, such as high frequency intensity ultrasound or focal therapy with interstitial lasers. Additionally, urinary incontinence adds approximately \$5,477 in cost on a per person basis (adjusted for fiscal year 2013), highlighting both the financial- and health-related burden of this adverse outcome [3].

Although multiple factors (e.g., age, body mass index, prostate volume, and surgeon inexperience) have been associated with postprostatectomy incontinence, several technical modifications have been shown to enhance urinary control following radical prostatectomy. For example, a randomized controlled trial demonstrated that bladder neck preservation reduces urinary leakage, improves social continence, and enhances quality of life. Even so, a significant number of men fail to achieve these results during the early recovery period (i.e., within 3 mo of radical prostatectomy) [1,4,5]. In 2002, Walsh and Marschke [6] described bladder neck intussusception, which improved 3-month continence rates from 54% to 82%, with equivalent continence rates at 1-year when compared with historical controls. Despite these promising results, subsequent findings have been mixed [7,8]. In fact, a recent review assessed athermal division and selective suture ligation of the dorsal vein complex, bladder neck preservation, and posterior reconstruction as beneficial in reducing postprostatectomy incontinence, but there was no mention of bladder neck intussusception as a technical modification to improve urinary control [1,5,9].

Therefore, the purpose of our study was to adapt bladder neck intussusception to the robotic platform and determine whether this technique improves short-term urinary outcomes. In this context, we performed a parallel, comparative trial, alternating men undergoing robot-assisted laparoscopic prostatectomy between bladder neck intussusception vs. non-intussusception (i.e., standard vesicourethral anastomosis).

2. Materials and methods

2.1. Study cohort and surgical technique

From August 2013 through April 2014, 48 men underwent robot-assisted laparoscopic radical prostatectomy consecutively by a single surgeon (J.C.H.) and underwent bladder neck intussusception vs. nonintussusception on an alternating basis. The planned procedure was discussed with each patient and informed consent obtained. To adapt the open technique to the robotic platform, the study surgeon reviewed online videos of open radical prostatectomy bladder neck intussusception and a higher definition version provided by Dr. Walsh [6,10]. Before study enrollment, 10 subjects underwent bladder neck intussusception with robot-assisted prostatectomy during a run-in period. Deidentified, video recordings were uploaded to YouTube and reviewed by Dr. Walsh, who provided critical feedback to improve surgical technique.

All subjects underwent prostate removal via robot-assisted laparoscopic prostatectomy, as described previously [9,11,12]. Using a 4-armed da Vinci Si Surgical System (Intuitive Surgical, Sunnyvale, CA), we performed an antegrade approach in the following order: (1) bladder neck and seminal vesicle dissection with bladder neck sparing, (2) antegrade nerve sparing, (3) pelvic lymph node dissection, (4) apical dissection, and (5) anastomosis.

To ensure optimal identification of the bladder neck during intussusception, we slightly modified our previously described anastomotic technique [13]. First, after placement of the initial 6-o'clock anastomotic suture in the urethral stump before division of the posterior apical prostatic urethra, a stay suture is placed at the 6-o'clock position in the bladder neck. This aids in the identification of the bladder neck, as it often retracts during intussusception.

Next, a 3-0 polyglycolic horizontal mattress suture is placed in the perivesical fat at the edges of the posterior bladder wall where the bladder was previously attached to the prostate and then tied down completely (Fig. 1). Following posterior intussusception, the stay suture at the bladder neck is removed. The vesicourethral anastomosis is then completed in our customary manner using 3 posterior interrupted and 2 running 3-0 polyglycolic sutures that meet and are tied together at the 12-o'clock position. Finally, another 3-0 polyglycolic horizontal mattress suture is placed in the anterolateral perivesical adipose tissue and tied down completely, approximately 4 cm away from the anastomosis (Fig. 2). Visible on cystogram, bladder neck intussusception results in a more narrowed bladder neck, as initially described (Fig. 3). A video description with additional technical details is available for viewing online (<http://youtu.be/HrZYQsV3oRI>).

2.2. Outcome measures

Urinary function during the early recovery period served as our primary outcome. We used the urinary domain of the

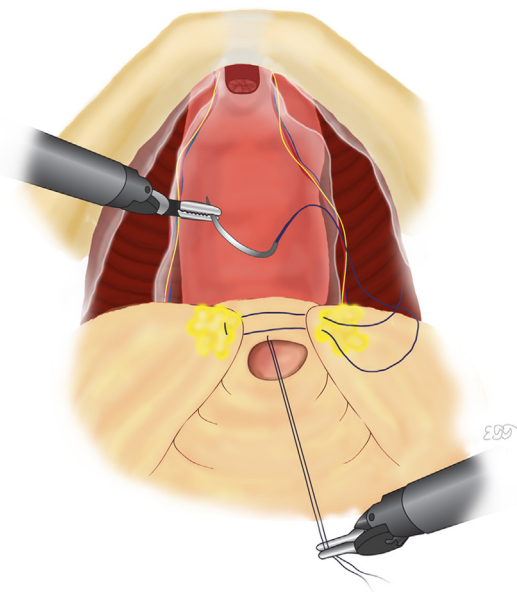


Fig. 1. Posterior bladder neck intussusception. An initial 6-o'clock anastomotic suture is placed inside-out on the urethral stump before division of the posterior apical prostatic urethra (not pictured). A second stay suture at the 6-o'clock position in the bladder neck is placed to prevent retraction of the bladder neck during intussusception. Next, a 3-0 polyglycolic horizontal mattress suture is placed posterolateral to the bladder neck in the perivesical fat and cinched down completely. (Color version of figure is available online.)

Download English Version:

<https://daneshyari.com/en/article/5702771>

Download Persian Version:

<https://daneshyari.com/article/5702771>

[Daneshyari.com](https://daneshyari.com)