

# Outlet Obliteration: *In search of Drano*

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# Disclosure of Financial Relationships

Ryan P Terlecki, MD, FACS

Has disclosed relationships with an entity producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients.

## Consultant

AMS/Boston Scientific

## Honoraria/Advisory Boards

Auxilium

AMS

## Research Grants/Contracts

AMS/Boston Scientific

Allergan

Department of Defense

# Objectives (in 20 minutes)

- Review of etiology and theories on spectrum of pathophysiology for bladder neck contractures
- Discuss outcomes of traditional management
- Highlight research on novel therapeutics to improve endoscopic management

# Audience Response Question 1

# Audience Response Question 2

# Bladder neck contractures

- Can be very problematic when recalcitrant
- Most commonly seen after prostate cancer therapy, but some are sequelae of TURP for benign disease
- Some patients go on to receive chronic catheters or a never-ending cycle of dilation

# Etiologies

- Can be seen after multiple modalities of cancer therapy
- The obstruction can be due to intrinsic and extrinsic fibrosis
- Ischemia through reduction in blood flow and inflammation from urinary extravasation have both been implicated

# CaPSURE data

TABLE 1. *Crude stricture rates stratified by primary PC treatment*

Treatment	No. Pts/No. Stricture (%)
RP	3,310/277 (8.4)
RP+EBRT	73/2 (2.7)
Cryosurgery	199/5 (2.5)
BT	799/14 (1.8)
BT+EBRT	231/12 (5.2)
EBRT	645/11 (1.7)
ADT	961/19 (2.0)
WW	378/4 (1.1)
Total	6,597/344 (5.2)

Followup not considered.



# Findings

- Range is 1.1-8.4%, depending on treatment type
- Risk highest after RP or Brachy+XRT
- Risk highest in older and more obese patients
- Stricture occurs within 24 months after RP, delayed after radiation

# In search of a solution...



# Management Strategies

Curr Urol Rep (2015) 16: 65  
DOI 10.1007/s11934-015-0536-4



LOWER URINARY TRACT SYMPTOMS & VOIDING DYSFUNCTION (H GOLDMAN AND G BADLANI, SECTION EDITORS)

## **Management Strategies for Post-Prostatectomy Bladder Neck Contractures**

Robert Caleb Kovell<sup>1</sup> · Ryan Patrick Terlecki<sup>1</sup>

# Transurethral Management

- DVIU/Dilation have a **single procedure success rate** of 25-73% for BNC after RP
- **27% are refractory to three or more trials**
- TUR of the bladder neck has good success in many patients, but some will still fail
- Urethral stents were promoted by some but not without significant problems and no longer on the market

# Transurethral Management

- MMC has been shown to reduce scarring in eye and laryngeal surgery
- Reduced recurrence in DVIU series (Mazdak et al. Eur Urol 2007)

# Mitomycin-C for BNC

- Vanni et al reported on a series of 18 patients treated with TUIBN and injection of MMC at injection site
- At median f/u of 12 months, 13 (72%) patent after one procedure, 3 (17%) after 2 procedures, and 1 after 4 procedures; 1 failed

Vanni et al. J Urol 2011. 186:156-60

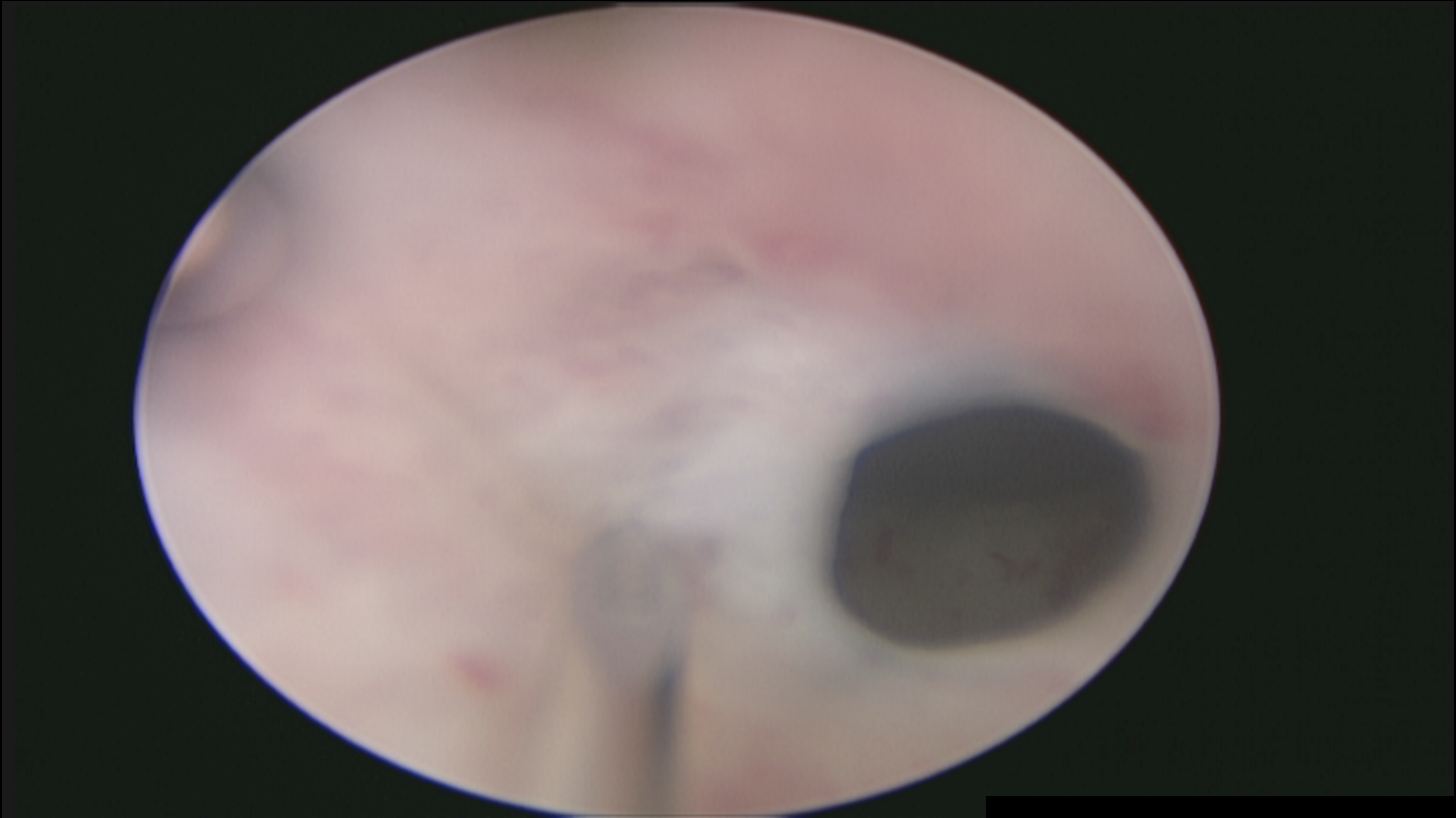
# Mitomycin-C for BNC

## **Adjunctive intralesional antifibrotics following transurethral incision of Bladder Neck Contractures**

**David S Koslov<sup>1</sup>, Robert Kovell<sup>1</sup>, Kyle D Wood<sup>1</sup>, Ilya Gorbachinsky<sup>1</sup>, Ryan Terlecki<sup>1</sup>**

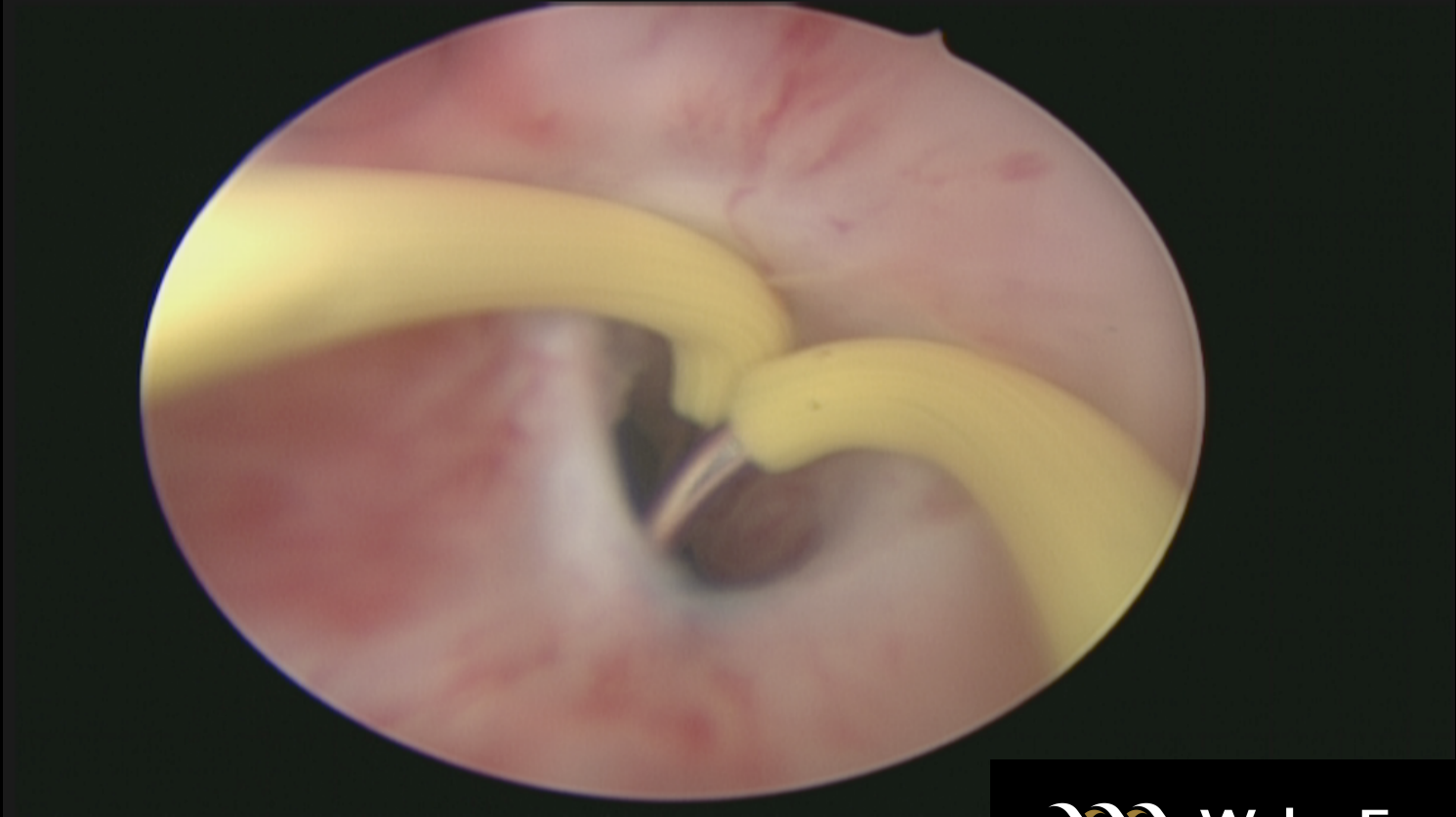
<sup>1</sup>Wake Forest School of Medicine, Winston-Salem, NC

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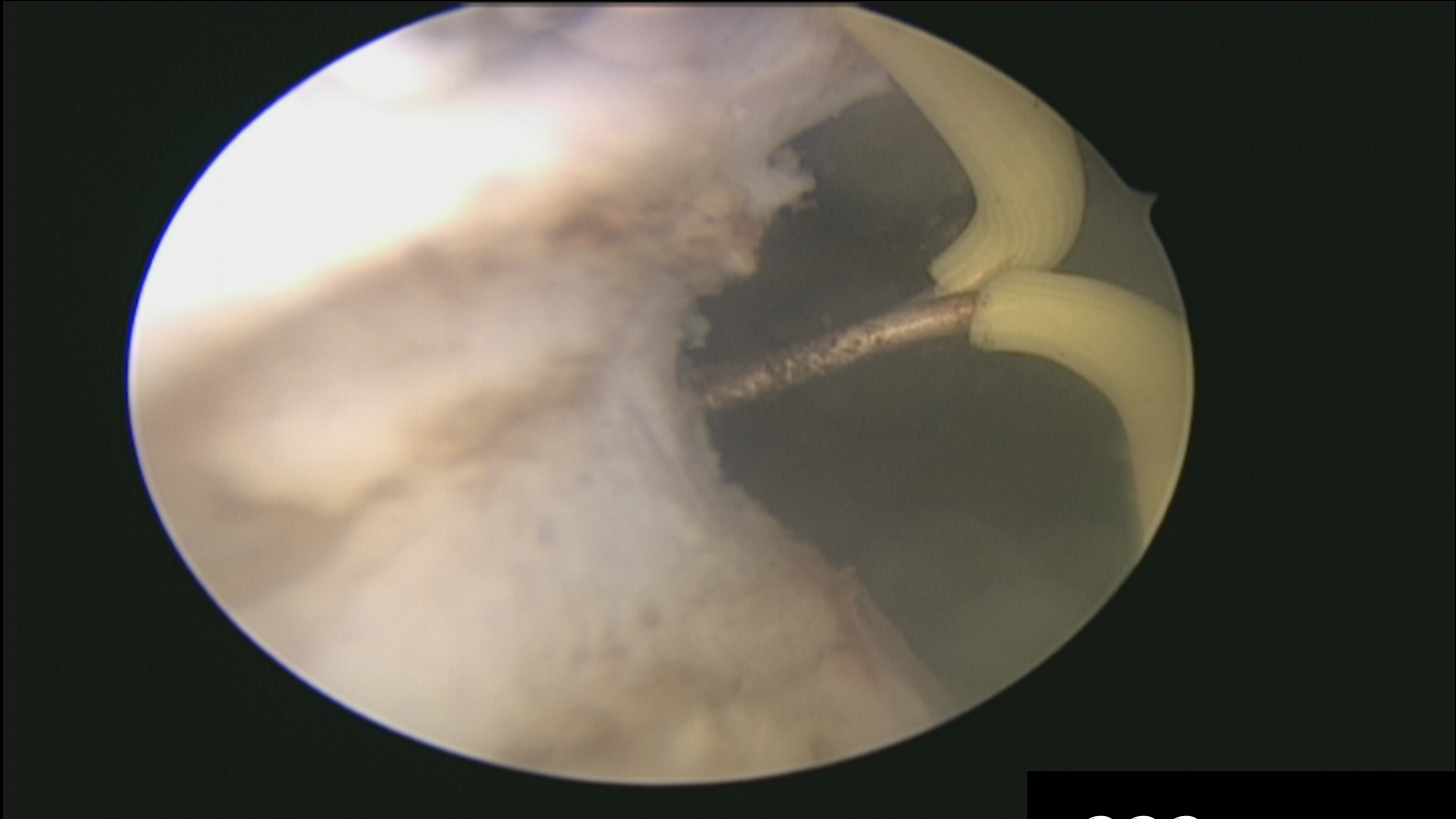


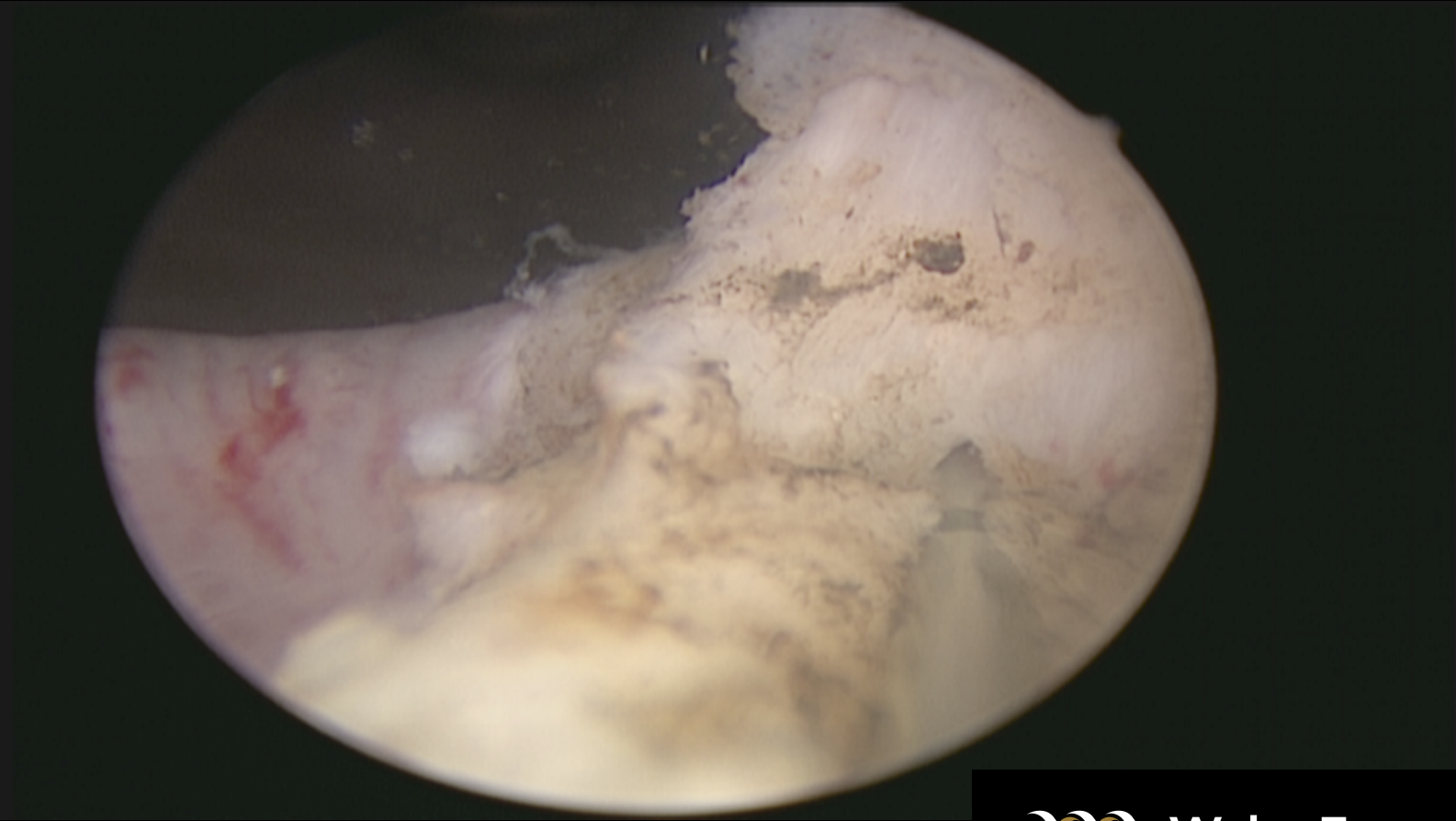
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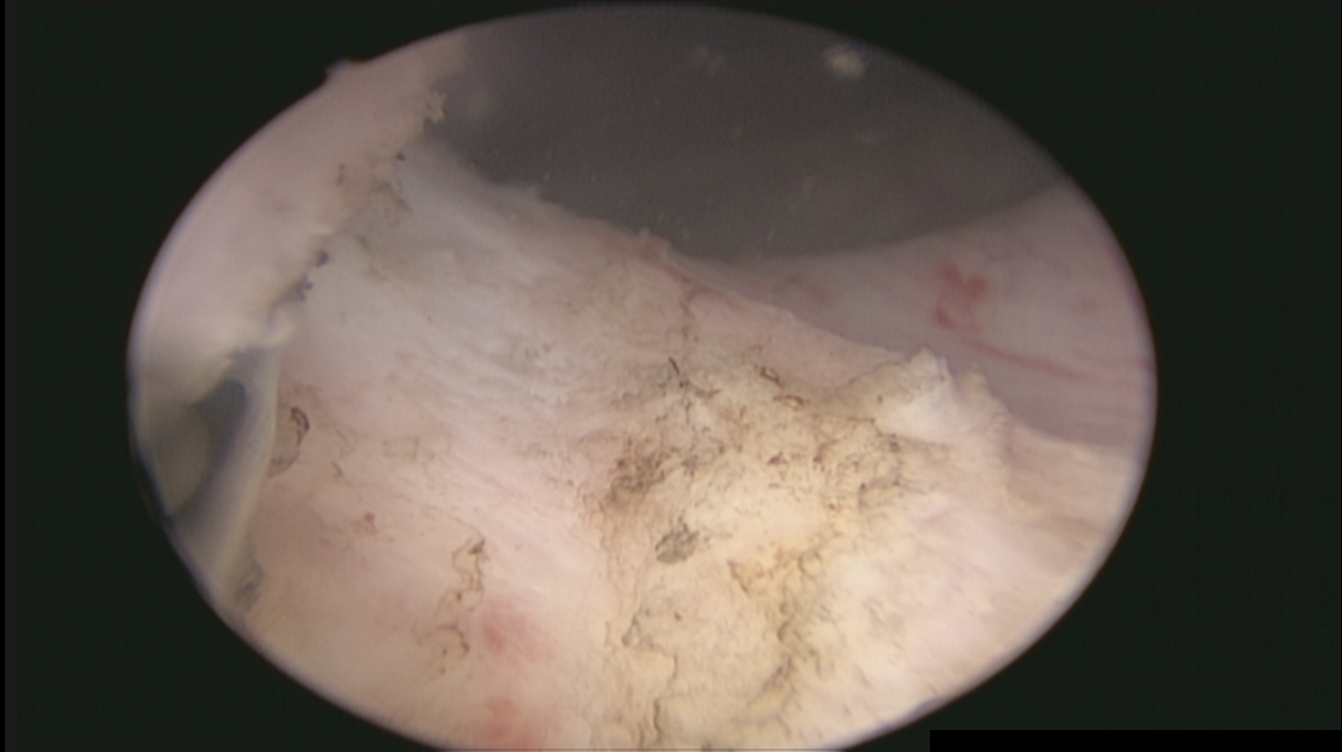




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# WF Experience w/refractory BNC

- Our initial report was only for 13 patients
- Mean age 69 yrs (55-85)
- Etiology
  - RP (7)
  - Brachy (3)
  - TURP (1)
  - XRT (1)
  - PVP (1)

# WF Experience w/refractory BNC

- Management
  - TUIBN with MMC (9)
  - TUIBN with tacrolimus (2)
  - Laser incision alone (2)
- All MMC patients patent at f/u, with 1 requiring 1 dilation at 10 months and repeat TUIBNC with MMC at 13 months

Patient	Age	Etiology	Modulator	Prior intervention	Follow Up (Months)	Outcome
1	82	PVP	None	None	7	Obliterated, kept suprapubic catheter.
2	85	RRP	None	None	2	Patient reports improved FOS. Pleased.
3	65	RRP and XRT	Tac	Dilation x 2, TUIBN	2	Remained obliterated, kept suprapubic catheter.
4	66	XRT	Tac	Dilation x 1, TUIBN	24	Cystoscopy at 11 months showed patent bladder neck, but obliterated at 24 months.
5	55	Perineal Prostatectomy	MMC	None	41	Cystoscopy at 7 months showed patent bladder neck, had AUS placed at 9 months.
6	68	RRP	MMC	Dilation x 2	14	Followed at Veteran's Affairs Hospital, voiding well.
7	72	RRP	MMC	TUIBN x 1	32	Required balloon dilation at 9 months.
8	55	TURP	MMC	TUIBN x 2	29	Cystoscopy at 11 months showed patent bladder neck.
9	70	RRP	MMC	None	14	AUS placed at 4 months, cystoscopy showed patent bladder neck at that time.
10	72	Brachy	MMC	TUIBN x 1	9	Cysto at 9 months, BN re-stenosed. Followed up at referring urologist.
11	68	PVP and Brachy	MMC	TUIBN x 1	22	11 months AUS/cysto showed BN patent
12	85	Brachy, XRT, TURP x 3	MMC	Resected x 3	13	Dilated at 8 months, repeat incision and injection with MMC at 10 months. AUS at 13 months, patent.
13	59	RRP	MMC	Incised x 2 with kenalog	9	Cystoscopy at 4 months during AUS placement demonstrates stable bladder neck.

# Multicenter Collaboration

- TURNS group retro review 55 patients with at 6 centers from 2009-2014, 80% of whom failed prior dilation or TUIBNC
- Overall success of TUIBNC was 75% (41/55 patients patent); 15 received 2 procedures
- 4 patients had serious AEs



# Self-dilation to maintain patency

## **Poor Quality of Life in Patients with Urethral Stricture Treated with Intermittent Self-Dilation**

Jessica D. Lubahn, Lee C. Zhao, J. Francis Scott, Steven J. Hudak, Justin Chee, Ryan Terlecki,\* Benjamin Breyer and Allen F. Morey†,‡

*From the Departments of Urology, University of Texas Southwestern Medical Center (JDL, LCZ, JFS, SJH, AFM), Dallas, Texas, Alfred Health (JC), Melbourne, Victoria, Australia, Wake Forest Baptist Medical Center (RT), Winston-Salem, North Carolina, and University of California-San Francisco (BB), San Francisco, California*

# Self-dilation/maintenance (CIC)

- 85 patients on dilation for stricture/BNC
- Median age: 68 yrs
- Median time on CIC (aka ISC-intermittent self catheterization): 3 yrs
- Median number per day: 1x

# Self-dilation/maintenance (CIC)

- Unlike in NGB, self-dilation was noted to be associated with moderate pain and poor QOL scores
- BNC was included in the group with posterior strictures, and this group noted the greatest degree of difficulty with self-dilation

# Open Reconstruction

Int Urol Nephrol (2014) 46:2147–2152

DOI 10.1007/s11255-014-0816-9

UROLOGY - ORIGINAL PAPER

## **Open reconstruction of recurrent vesicourethral anastomotic stricture after radical prostatectomy**

Dmitriy Nikolavsky · Stephen A. Blakely ·  
David A. Hadley · Paul Knoll · Andrew P. Windsperger ·  
Ryan P. Terlecki · Brian J. Flynn

# Open Reconstruction

- Series of 12 cases from 2004-2012
  - Abdominal (7)
  - Perineal (3)
  - Abdominoperineal (2)
- All cases after prior RP, 25% also w/rads
- 43% had complete obliteration
- 2 patients had anastomotic disruption in early post-RP period

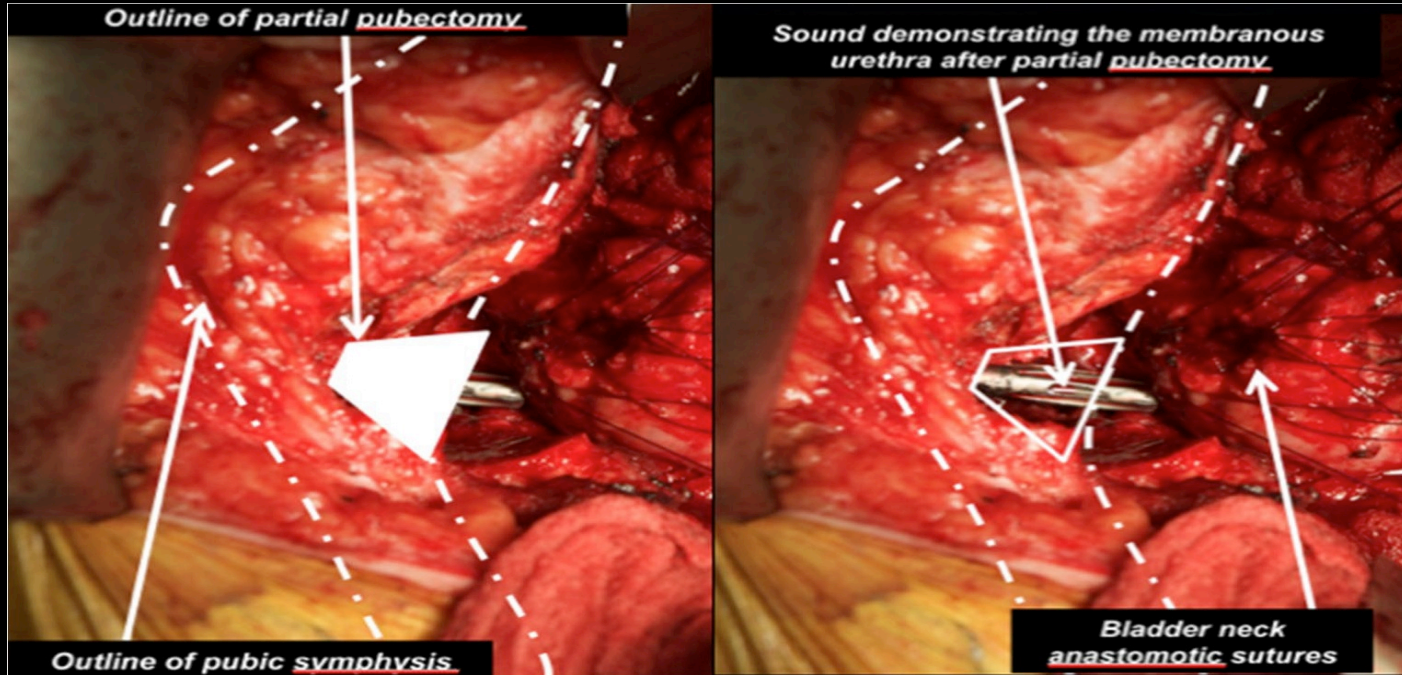
# Open Reconstruction

- Median length of stenosis: 2.5 cm (1-5 cm)
- Median LOS: 3 days (1-7)
- Median f/u: 75.5 months (14-120)
- Patency: 92%
- Continence: 25%

# Maneuvers for length

- Urethral mobilization (always)
- Corporal separation (often)
- Partial pubectomy/symphisectomy (rarely)
- Supracrural rerouting (never)

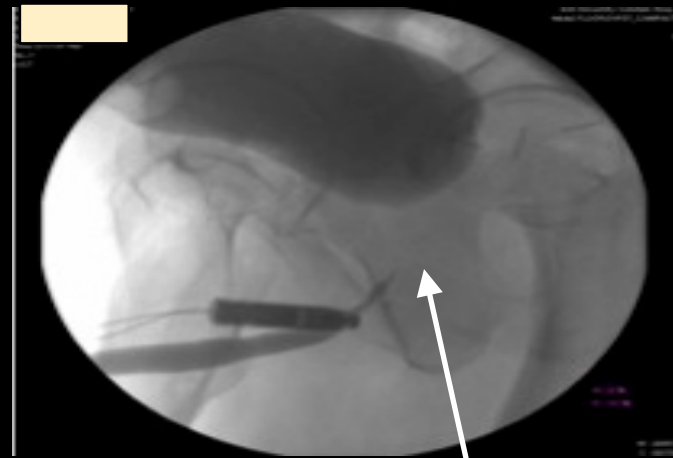
# Open Reconstruction





# Obliteration after lap RP

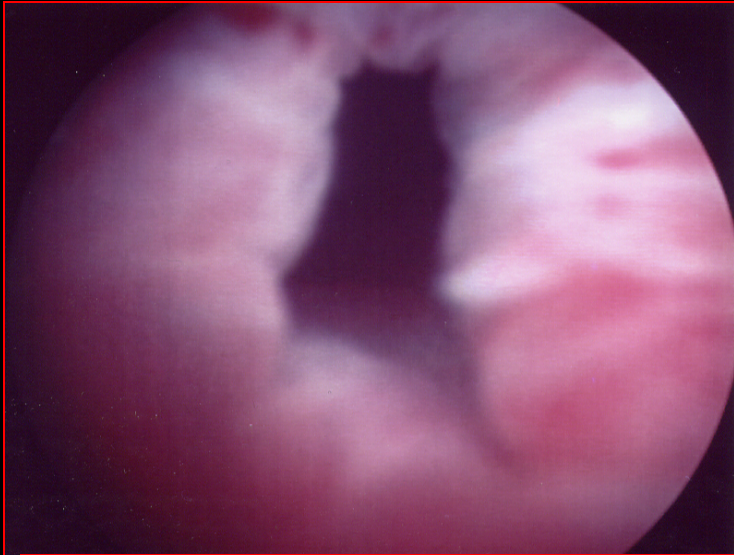
- Failed endoscopic management
- Abdominoperineal repair
- Sphincter divided at time of repair



VCUG-RUG demonstrating 4 cm defect

# VU Stricture after Lap RP

## Post-op Results



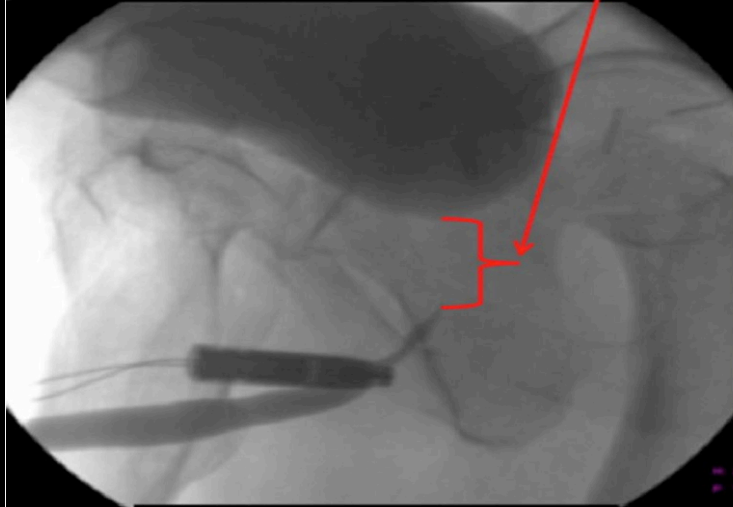
Post-op urethroscopy



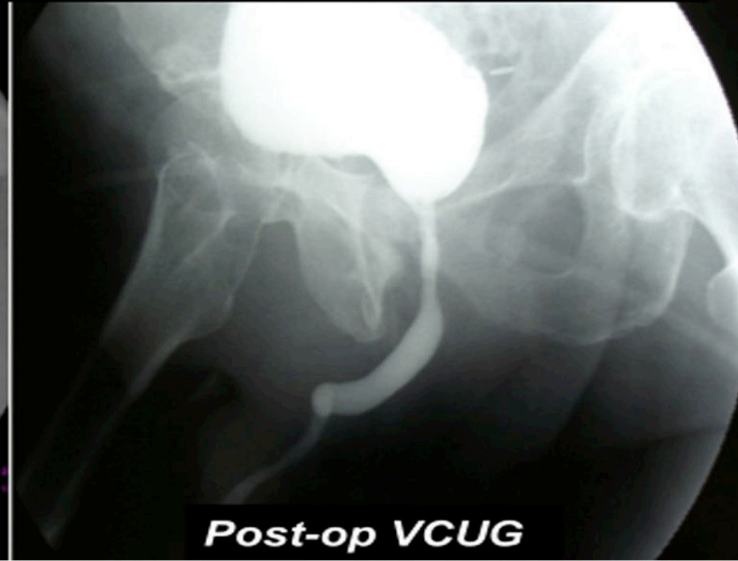
Post-op RUG showing  
successful repair

# Open Reconstruction

3.5 cm VUAS after laparoscopic radical prostatectomy



*Pre-op VCUG/RUG*



*Post-op VCUG*

# Urinary Diversion

- Initially seems like a drastic, ‘end of the road’ option
- The prospect of eliminating the need to change pads/diapers, having to deal with diaper rash, and having to undergo multiple transurethral procedures makes an ostomy not seem so extreme

# Urinary Diversion

- Ileal conduit +/- cystectomy
- Indiana Pouch +/- cystectomy
- Bladder neck closure with indwelling SPT or catheterizable channel +/- augmentation
- SPT alone if completely obliterated/continent

# Implications for Survivorship

- Continence restoration
  - Timing of anti-incontinence surgery
  - Management of recurrences after AUS
- Sexual health restoration
  - Issues with concomitant procedures
  - Some providers averse to placing two scrotal pumps

# Persistent Cancer

- Detectable PSA (stable or rising) can have implications for management of contractures and continence
- If a patient w/BNC has already received surgery/radiation, my approach is **not changed** by consideration of ADT or chemo if life expectancy is reasonable
- If a patient already has BNC and/or dystrophic calcifications after XRT +/- brachy, **salvage cryo is ill-advised in my opinion if the patient does not want a chronic SPT or urinary diversion**

# Audience Response Question 1



# Audience Response Question 2

# Conclusions

- The rate of BNC is low
- BNC are often managed well with TUR alone
- CIC is often not satisfactory for patients
- Some refractory cases can be managed with TUR + injection
- Open reconstruction is an option for some well-selected patients
- Urinary diversion is very reasonable for some patients