Illustration by courtesy of Fabrizio Dal Moro

The 5th course on LUTD and urodynamics:

The price of the cure

The 5th course on LUTD and urodynamics:

The price of the cure

Male urinary incontinence

Primary assessment and surgical options

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Postprostatectomy incontinence (PPI)

- Background, epidemiology
- Risk factors and pathophysiology
- Preoperative evaluation and investigation
- Surgical treatment options
- Outcome
- Summary and conclusions

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Background, epidemiology

- Stress incontinence
- Urgency incontinence
- Mixed incontinence
- Overflow incontinence
- Post micturition dribble

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Background, epidemiology

THE JOURNAL of UROLOGY®
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How Should Continence and Incontinence after Radical Prostatectomy be Evaluated? A Prospective Study of Patient Ratings and Changes with Time

Henriette Veiby Holm,*,† Sophie D. Fosså, Hans Hedlund, Alexander Schultz† and Alv A. Dahl

Incontinence 12 months after radical prostatectomy

Definition	Previous studies [a]	Current study
Any leakage	11 - 90 %	73 %
Use of pads	2 - 35 %	40 %
Frequent leakage	10 % [b]	8 %
'Total incontinence'	5 - 10 %	3 %
'Severe incontinence' [c]	6 %	25 %
Moderate/big problem	22 %	18 %
Surgically treated PPI	4 - 9 %	7 %

[a] Rates from several studies and review articles: Ellison et al. 2013, Ficarra V et al. 2012, Flynn BJ et al. 2007, Herschorn et al. 2010, *Incontinence* 5th ed. 2013, Krane RJ 2000, Resnick MJ et al. 2013, Wallerstedt A et al. 2012, Nam RK et al 2012.
[b] Reported 24 months after RP [c] EPIC-26 Urinary Incontinence Domain score 0-49 ('severe incontinence', Ellison et al.)

Postprostatectomy incontinence (PPI)

- Background, epidemiology
- Risk factors and pathophysiology
- Preoperative evaluation and investigation
- Surgical treatment options
- Outcome
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Risk factors for PPI

- **Pre-RP**
  - Low/moderate risk cancer – investigate more before RP?
  - Length of membranous urethra – MRI pre-RP?
  - Obesity, comorbidities
- **RP technique**
  - "Intended" nerve sparing? High anterior release?
  - Rocco stitch vs. CoRPUS vs. ARVUS vs. others?
  - water-jet dissection? v-lock vs. monocryl?
  - Simultaneous RP and autologous sling?
  - ORP vs. RALP?
- **Salvage RP after radical radiotherapy**

Pre-RP risk factors

Influence of secondary diagnoses in the development of urinary incontinence after radical prostatectomy.

Padilla-Fernández et al Arch Ital Urol Androl. 2017 Mar 31;89(1):34-38.

- 430 men – RP due to localized prostate cancer – 9 hospitals
- Risk factors for PPI:
  - hypertension
  - lower urinary tract symptoms
  - dyslipidemia
  - diabetes mellitus
  - erectile dysfunction

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Variables associated with PPI 12 months post-RP (N=735)

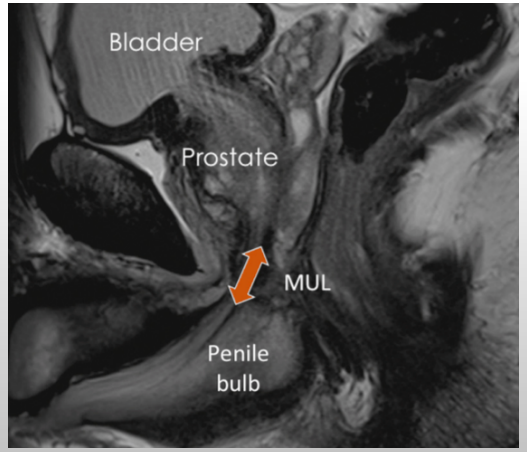
	Bivariate analysis	Multivariate analysis
Variables	**p value**	**p value**
Pre-RP		
Higher age	**<0.001**	0.70
Currently not working	**<0.001**	0.20
Comorbidity present	0.07	0.20
Erectile dysfunction	**<0.001**	**<0.001**
Incontinence	**<0.001**	**<0.001**
Clinical T stage:		
≤T2a (reference)		
T2b-T2c	0.15	0.25
≥T3	0.08	0.05
Surgical approach:		
RALP (reference)		
ORP	0.14	0.11
Nerve sparing	0.14	0.41

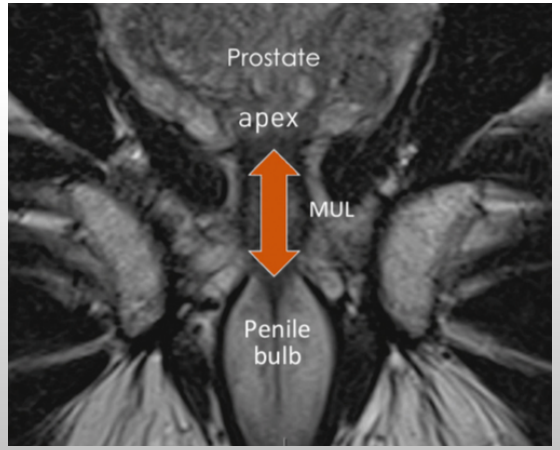
Linear regression analysis based on patients' UID score, simplified table

Pre-RP risk factors

Preoperative Membranous Urethral Length Measurement and Continence Recovery Following Radical Prostatectomy: A Systematic Review and Meta-analysis

Mungovan SF et al. Eur Urol. 2017 Mar;71(3):368-378





Pre-RP risk factors

EUROPEAN UROLOGY 71 (2017) 936–944

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Review – Incontinence

Pathophysiology and Contributing Factors in Postprostatectomy Incontinence: A Review

John Heesakkers[a], *Fawzy Farag*[b,*], *Ricarda M. Bauer*[c], *Jaspreet Sandhu*[d], *Dirk De Ridder*[e], *Arnulf Stenzl*[f]

Pre-RP risk factors

Table 1 – Biological factors contributing to postprostatectomy incontinence

Factor	Positive impact	Negative impact	No effect	Study	LE
Age		*		Novara [50]	3
		*		Karakiewicz [51]	3
		*		Matsushita [52]	3
			*	Kadono [53]	3
			*	Catalona [54]	3
Pre-existing LUTS		*		Rodriguez [60]	3
Functional bladder changes		*		Lee [48]	3
		*		Dubbelman [71]	3
		*		Song [47]	2b
TURP before RP		*		Elder [58]	3
			*	Palisaar [59]	4
Prostate size		*		Boczko [64]	3
		*		Konety [65]	3
			*	Kadono [53]	3
Membranous urethral length	*			Nguyen [67]	2b
	*			Paparel [68]	3
	*			Matsushita [52]	3
			*	Borin [69]	2b
			*	Hakimi [72]	3
Body mass index		*		Wolin [55]	3
		*		Wiltz [56]	3
		*		Matsushita [52]	3
			*	Kadono [53]	3
Salvage RP after RT		*		Chade [70]	

RP technique

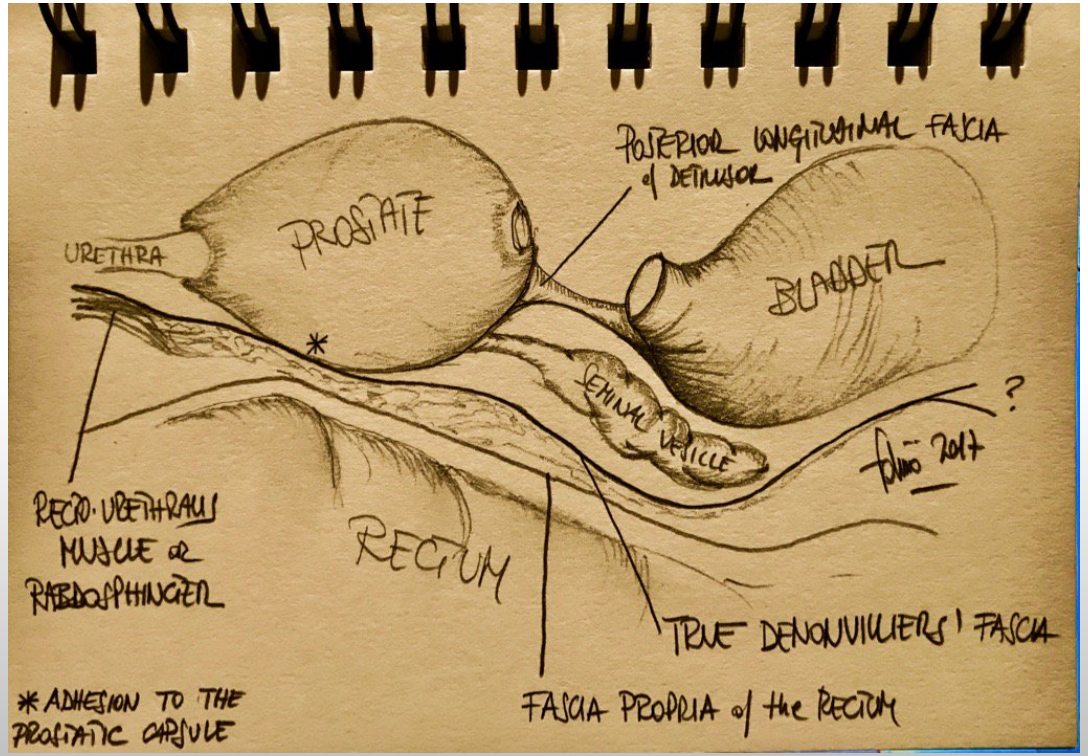

Illustration by courtesy of Fabrizio Dal Moro

EUROPEAN UROLOGY 70 (2016) 301–311

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European Association of Urology

Collaborative Review – Prostate Cancer

A Critical Analysis of the Current Knowledge of Surgical Anatomy of the Prostate Related to Optimisation of Cancer Control and Preservation of Continence and Erection in Candidates for Radical Prostatectomy: An Update

Jochen Walz [a,], Jonathan I. Epstein [b], Roman Ganzer [c], Markus Graefen [d], Giorgio Guazzoni [e], Jihad Kaouk [f], Mani Menon [g], Alexandre Mottrie [h], Robert P. Myers [i], Vipul Patel [j], Ashutosh Tewari [k], Arnauld Villers [l], Walter Artibani [m]*

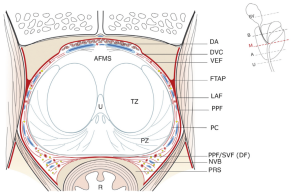


Fig. 1 – Axial section of prostatic and periprostatic fascia at midprostate.
A = apex; AFMS = anterior fibromuscular stroma; B = bladder; DA = detrusor apron; DF = Denonvilliers fascia; DVC = dorsal vascular complex; FTAP = fascial tendinous arch of pelvis; LAF = levator ani fascia; M = midprostate; NVB = neurovascular bundle; PC = pseudocapsule; PPF = periprostatic fascia; PPF/SVF = posterior prostatic fascia/seminal vesical fascia; PRS = perirectal space; PZ = peripheral zone; R = rectum; SV = seminal vesicle; TZ = transition zone; U = urethra; VEF = visceral endopelvic fascia.

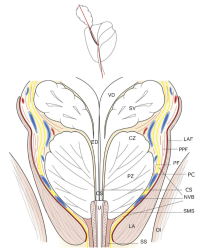


Fig. 4 – Coronal section of the prostate, sphincteric urethra, periprostatic fascia, and associated musculature.
CS = colliculus seminalis (verumontanum); CZ = central zone; ED = ejaculatory duct; LA = levator ani muscle; LAF = levator ani fascia; NVB = neurovascular bundle; OI = obturator internus muscle; PC = pseudocapsule of prostate; PF = prostate fascia; PPF = periprostatic fascia; PZ = peripheral zone; SMS = smooth muscle sphincter; SS = striated sphincter; SV = seminal vesicle; U = urethra; VD = vas deferens.

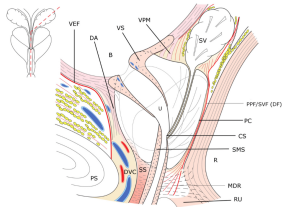


Fig. 2 – Midline sagittal section of prostate, bladder, urethra, and striated sphincter.
B = bladder; CS = colliculus seminalis (verumontanum); DA = detrusor apron; DF = Denonvilliers fascia; DVC = dorsal vascular complex; MDR = medial dorsal raphe; PC = pseudocapsule of prostate; PPF/SVF = posterior prostate fascia/seminal vesicle fascia; PS = pubic symphysis; R = rectum; RU = rectourethralis muscle; SMS = smooth muscle sphincter; SS = striated sphincter; SV = seminal vesicles; U = urethra. VEF = visceral endopelvic fascia; VS = vesical sphincter; VVPM = vesicoprostatic muscle.

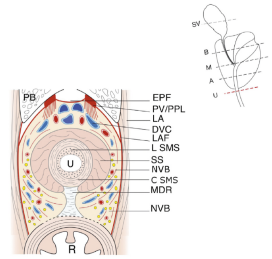
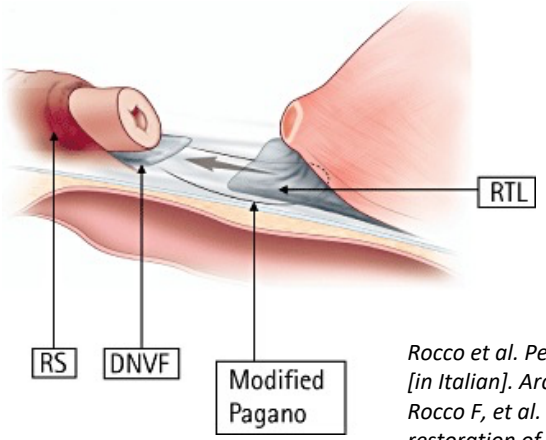


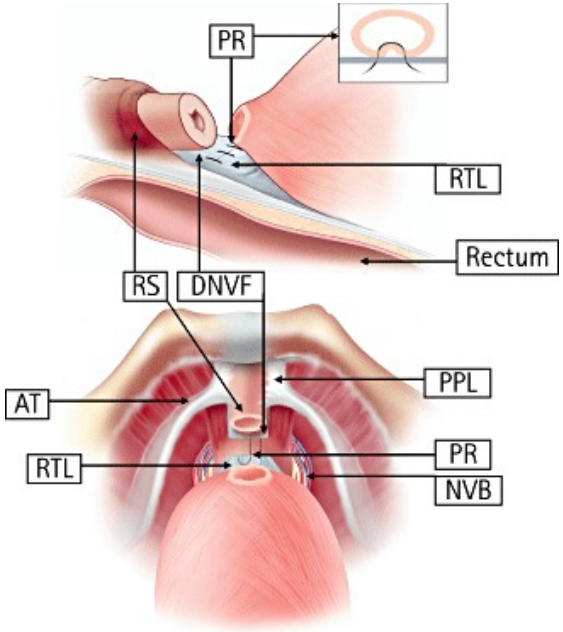
Fig. 3 – Axial section of the sphincteric urethra.
A = apex; B = bladder; C SMS = circular smooth muscle sphincter; DVC = dorsal vascular complex; EPF = endopelvic fascia; LA = levator ani muscle; LAF = levator ani fascia; L SMS = longitudinal smooth muscle sphincter; M = midprostate; MDR = median dorsal raphe; NVB = neurovascular bundle; PB = pubic bone; PV/PPL = pubovesical/puboprostatic ligament; R = rectum; SS = striated sphincter; SV = seminal vesicle; U = urethra.

RP technique

Vesicourethral support by:

- Anchor suture a.m. Rocco
- CoRPUS
- ARVUS
- Autologous sling





Rocco et al. Personal research: reconstruction of the urethral striated sphincter [in Italian]. Arch Ital Urol Androl. 2001;73:127-137.
Rocco F, et al. Early continence recovery after open radical prostatectomy with restoration of the posterior aspect of the rhabdosphincter. Eur Urol 2007;52:376–83.

CORPUS—Novel COmplete Reconstruction of the Posterior Urethral Support After Robotic Radical Prostatectomy: Preliminary Data of Very Early Continence Recovery

Fabrizio Dal Moro, Alessandro Crestani, Claudio Valotto, and Filiberto Zattoni

INTRODUCTION To determine whether a novel intraoperative technique of COmplete Reconstruction of the Posterior Urethral Support (CORPUS) improves early urinary continence after robotic-assisted radical prostatectomy (RARP). In this prospective study, between November 2012 and June 2013, 36 consecutive patients suitable for non–nerve-sparing RARP were alternatively assigned to either CORPUS surgery or Rocco's standard reconstruction.

TECHNICAL CONSIDERATIONS In the CORPUS group, fibers of the bilateral portions of the puborectalis muscle were used to create a sort of posterior hammock for the urethra. The International Consultation on Incontinence Questionnaire, Short Form Questionnaire (ICIQ-SF) and International Prostate Symptom Score were collected for all patients preoperatively and then ICIQ-SF at 1 day and both tests at 30 days after catheter removal after RARP. Intraoperative and/or postoperative complications were evaluated. Pearson chi-square test compared urinary continence according to ICIQ-SF at 1 and 30 days. Statistical significance was set at $P < .05$.

CONCLUSION Fifty percent of CORPUS patients were continent immediately after catheter removal and 83% after 30 days. In controls, the respective percentages were 16% and 61%. The differences were statistically significant in both cases. The International Prostate Symptom Score at 30 days did not show obstructive symptoms in either group. One limitation of this study is the low number of cases, "superselected" to evaluate the true effect of CORPUS reconstruction. The very early continence rate of the CORPUS patients was significantly improved compared with that of patients undergoing Rocco's standard technique. Further studies extending the inclusion criteria are needed to confirm the impact of the new CORPUS technique in a more heterogeneous group. UROLOGY 83: 641–647, 2014.

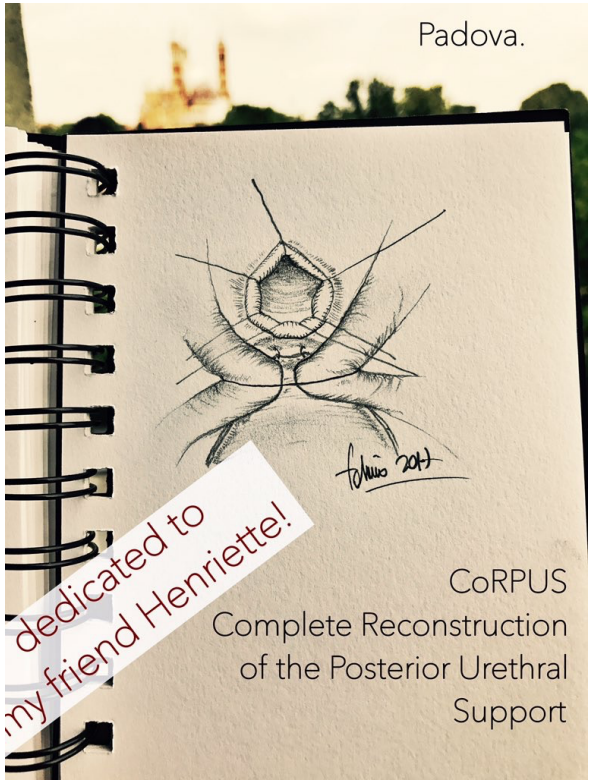


Illustration by courtesy of Fabrizio dal Moro

COmplete Reconstruction of the Posterior Urethral Support After Robotic Radical Prostatectomy

- 36 patients RARP (2012-2013)
- 18 CORPUS
- 18 Rocco's standardized technique

- Methods: ICIQ-SF questionnaire
- day 1 and day 30 after catheter removal after RP

- Results: Continent (ICIQ-SF definition, day 1 – day 30)
  - CORPUS 50 % **83 %**
  - Rocco 16 % **61 %**
- Limitations:
  - low number of cases, superselected to evaluate method

Advanced Reconstruction of Vesicourethral Support (ARVUS) during Robot-assisted Radical Prostatectomy: One-year Functional Outcomes in a Two-group Randomised Controlled Trial

Vladimir Student Jr.[a,b], *Ales Vidlar*[a,b], *Michal Grepl*[a,b], *Igor Hartmann*[a,b], *Eva Buresova*[a,b], *Vladimir Student*[a,b,*]

[a] Department of Urology, University Hospital, Olomouc, Czech Republic; [b] Faculty of Medicine and Dentistry, Palacky Univ

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Robot-assisted radical prostatectomy

Please visit www.europeanurology.com and www.urosource.com to view the accompanying video.

Abstract

Background: The advent of robotics has facilitated nev radical prostatectomy. These allow adjustment of pelvic relationships after removal of the prostate to ameliorate p nence (PPI) and reduce the time to complete continence.
Objectives: To describe the results of a new surgical tec of vesicourethral anastomosis using the levator ani m robot-assisted radical prostatectomy (RARP).
Design, setting, and participants: A prospective, randomised 66 consecutive patients with localised prostate cancer (cT1- from June to September 2014, 32 using the new technique posterior reconstruction according to Rocco.
Surgical procedure: In the advanced reconstruction of vesic intervention group, the fibres of the levator ani mu retrotrigonal layer, and median dorsal raphe were used t for the urethrovesical anastomosis. Suture of the arcus ten served as the anterior fixation.
Measurements: We compared demographic data and preo functional and oncologic results for the two groups. The pr nence evaluated at different time points (24 h, 2, 4, and 8 secondary endpoints were perioperative and postoperative function.
Results and limitations: Using a continence definition of 0 p for the ARVUS versus the control group were 21.9% versus 5.9 versus 11.8% at 2 wk ($p = 0.005$), 62.5% versus 14.7% at 4 w 20.6% at 8 wk ($p < 0.001$), 75.0% versus 44.1% at 6 mo ($p =$ 61.29% at 12 mo ($p = 0.04$). International Index of Erecti results at 6 and 12 mo after surgery showed similar potency (40.0% and 73.33%) and the ARVUS group (38.8% and 72.22% erative complications (2 in each group): three haematomas one lymphocele that needed drainage. No urinary ret or perineal pain was observed. Limitations include the s single-institution design.

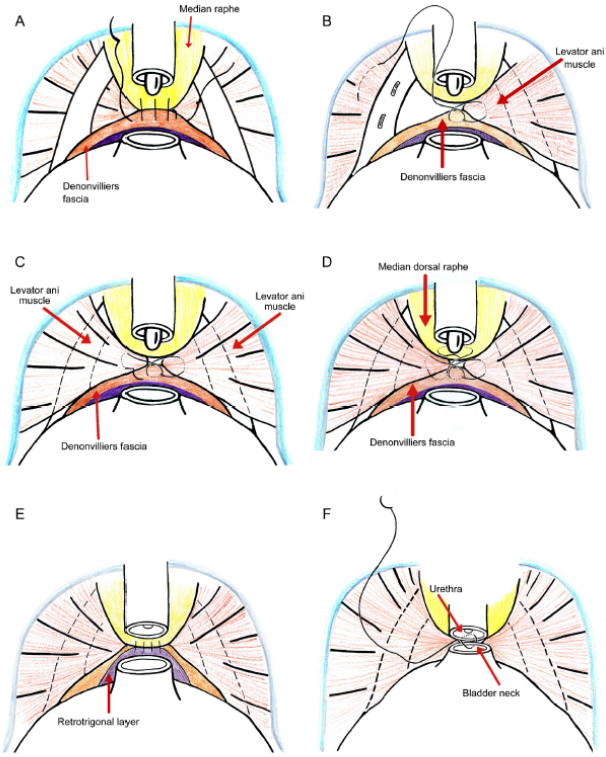

Fig. 2 – (A) Control group. Suture of the Denonvilliers fascia and bladder to the median dorsal raphe according to Rocco. (B) In the intervention group, we used an absorbable monofilament barbed V-loc 2/0 suture, which we led first to the right, across the medial levator ani muscle, then through the Denonvilliers fascia without injuring the neurovascular bundles. (C) The stitch goes over the bundles of the left medial levator ani and back to the Denonvilliers fascia. (D) The end of the stitch is passed under the urethra through the median dorsal raphe. (E) The suture is passed back through the detrusor under the bladder neck through the retrotrigonal layer. (F) In the last step, the needle is passed through the bladder neck and urethra to align them.

Advanced Reconstruction of Vesicourethral Support (ARVUS) during Robot-assisted Radical Prostatectomy

- 100 patients with localized prostate cancer
- 66 were randomized to ARVUS
- 34 to standard posterior reconstruction using the Rocco technique.

- Results:
- Continence (= 0 pads):
  - 4 wks: ARVUS 63 % vs. control 15 %
  - **1 yr: ARVUS 87 % vs. control 61 %**
- No difference in IIEF scores bt. the groups

RP technique

Autologous urethral sling at time of RP?

January 19, 2017

Autologous Urethral Sling Does Not Improve Continence After Prostatectomy

Share this content:

(HealthDay News) — Placement of a retropubic urethral sling fashioned from autologous vas deferens during robotic assisted radical prostatectomy does not improve recovery of continence, according to a study published in *The Journal of Urology*.

No benefit of autologous urethral sling placement at robotic assisted radical prostatectomy on early return of continence at 6 months.

Hao G Nguyen, MD, PhD, from the University of California-San Francisco, and colleagues conducted a phase 2 trial in which age-stratified patients were randomized to undergo robotic assisted radical prostatectomy by multiple surgeons with or without sling placement (95 and 100 patients, respectively). The outcomes were complete and near continence at 6 months.

- **Con:**

1. *A Randomized Study of Intraoperative Autologous Retropubic Urethral Sling on Urinary Control after RARP. Nguyen HG et al. J Urol. 2017 Feb;197(2):369-375.*
2. *A Parallel Randomized Clinical Trial Examining th Return o Urinary Continence after RARP with or without a Small Intestinal Submucosa Bladder Neck Sling. Clinton D. Bahler et al. J Urol 2016 Jul;196(1):179-84*

Autologous urethral sling at time of RP?

•**Pro:**

1. *Retropubic Intracorporeal Placement of a Suburethral Autologous Sling During Robot-Assisted Radical Prostatectomy to Improve Early Urinary Continence Recovery: Preliminary Data. Cestari A et al. J Endourol. 2015 Dec;29(12):1379-85.*
2. *Simple vs six-branches autologous suburethral sling during robot-assisted radical prostatectomy to improve early urinary continence recovery: prospective randomized study. Cestari A et al. J Robot Surg. 2017 Jan 11.*

Continence (=0 pads) at 30 days post-RP:

Six branches	**87 %**
Two branches	**70 %**

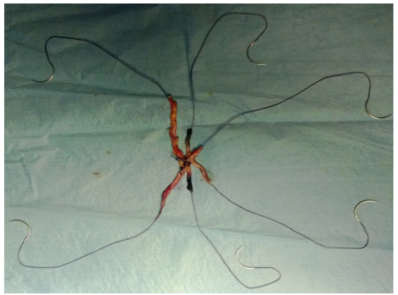

Fig. 1 Final structure of the six-branches autologous sling created on scrub nurse table using two tracts of vas deferens cut into 6 specimens, transfixed with the suture and collected centrally

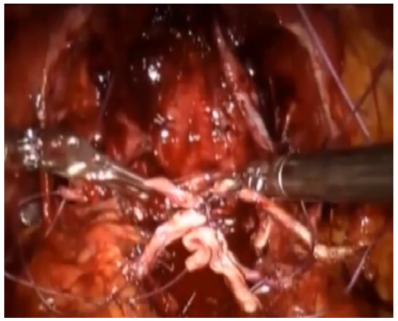

Fig. 2 Intraoperative view showing the six-branches sling introduced into the surgical field before the urinary continuity restoration and fixed bilaterally to the periosteum of the pubic branch at medial, lateral and posterior level

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Review – Incontinence

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RP technique

	Positive impact	Negative impact	No effect	Study	LE
Fibrosis		*		Paparel [68]	3
		*		Tuygun [28]	3
Stricture		*		Sacco [29]	
Extensive dissection		*		Srivastava [73]	3
Bladder neck sparing	*			Stolzenburg [5]	3
	*			Selli [7]	3
			*	Marien [41]	4
Rocco stitch	*			Rocco [19]	2a
			*	Kim [21]	3
Anterior fixation	*			Hurtes [16]	1b
	*			Stolzenburg [17]	2a
	*			Schlomm [18]	2b
	*			Soljanik [6]	3
Laxity of the posterior support		*		Bauer [74]	2b
		*		Rehder [75]	2b
			*	Suskind [27]	3
Neurovascular bundle damage		*		Montorsi [45]	2b
		*		Catarin [37]	2a
		*		Ozdemir [38]	3
		*		Kaye [39]	3
		*		Sacco [29]	3
		*		Stolzenburg [17]	2a
		*		Burkhard [40]	2b
Devascularization		*		Ozdemir [38]	3
		*		Myers [76]	4
		*		Yucel [77]	3

RP technique

EURURO-7358; No. of Pages 9

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European Association of Urology

Platinum Priority – Prostate Cancer

Editorial by XXX on pp. x–y of this issue

Community-based Outcomes of Open versus Robot-assisted Radical Prostatectomy

Annika Herlemann[a,b], *Janet E. Cowan*[a], *Peter R. Carroll*[a], *Matthew R. Cooperberg*[a,c,*]

[a] *Department of Urology, University of California, San Francisco, Helen Diller Family Comprehensive Cancer Center, San Francisco, CA, USA;* [b] *Department of Urology, Ludwig-Maximilians-University of Munich, Munich, Germany;* [c] *Department of Epidemiology and Biostatistics, University of California, San Francisco, Helen Diller Family Comprehensive Cancer Center, San Francisco, CA, USA*

Abstract

Background: Identifying the optimal surgical approach for patients with localized prostate cancer (PCa) managed in the community setting remains controversial due to the lack of robust, prospective data.
Objective: To assess surgical outcomes and changes in urinary and sexual quality of life (QOL) over time in patients undergoing radical prostatectomy (RP).
Design, setting, and participants: ur study included patients enrolled in Cancer of the Prostate Strategic Urologic Research Endeavor (CaPSURE), a large, prospective, mostly community-based, nationwide PCa registry, who underwent RP between 2004 and 2016.
Intervention: Open (ORP) versus robot-assisted radical prostatectomy (RARP) for localized PCa.
Outcome measurements and statistical analysis: Demographic and clinicopathologic data and surgical outcomes were compared between ORP and RARP. Self-reported, validated questionnaires (scaled 0–100 with higher numbers indicating better function) were used to evaluate urinary and sexual QOL at different time points. Repeated measures mixed-models assessed changes in function and bother over time in each domain.
Results and limitations: Among 1892 men (n = 1137 ORP; n = 755 RARP), Cancer of the Prostate Risk Assessment score, Gleason grade at biopsy and RP, and pT-stage were lower in ORP patients (all $p < 0.01$). Men undergoing RARP had comparable surgical margin rates, lymph node yields, and biochemical recurrence rates. In a subset analysis with 1451 men reporting baseline and follow-up QOL data, ORP patients reported superior scores in urinary incontinence (ORP mean ± standard deviation 69 ± 26 vs RARP 62 ± 27) and bother (ORP 75 ± 29 vs RARP 68 ± 28, both $p < 0.01$) only in the 1st yr after RP. Differences in sexual outcomes did not differ between groups, nor did any QOL scores beyond 1 yr. Limitations include a decrease in the rate of questionnaire response during follow-up, potential selection biases in terms of patient assignment to ORP versus RARP and survey completion rates, and the fact that RARP cases likely included the initial learning curve for the CaPSURE surgeons.
Conclusions: Most patients experienced changes in urinary and sexual QOL in the 1st 3 yr following RP. The pattern of recovery over time was similar between ORP and RARP groups. Patients should not expect different oncologic or QOL outcomes based on surgical approach.
Patient summary: Aside from a small, early, and temporary advantage in terms of urinary incontinence and bother favoring open surgery, minimal differences in outcomes are observed when comparing men who undergo open versus robot-assisted prostatectomy in the community setting.

Prevention?

Received: 26 November 2018 | Revised: 19 January 2019 | Accepted: 25 February 2019

DOI: 10.1002/nau.23972

REVIEW ARTICLE

WILEY Neurourology Urodynamics ICS SUFU

How can we prevent postprostatectomy urinary incontinence by patient selection, and by preoperative, peroperative, and postoperative measures? International Consultation on Incontinence-Research Society 2018

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Correspondence
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Email: marcioaverbeck@gmail.com

Abstract

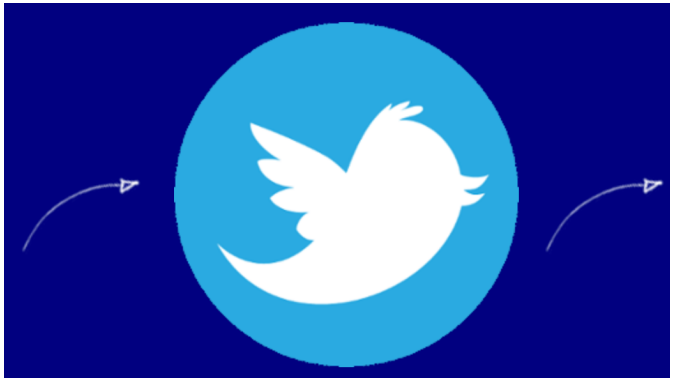
Aims: To review current prevention strategies for urinary incontinence among patients undergoing radical prostatectomy (RP).

Methods: This is a consensus report of the proceedings of a research proposal from the annual International Consultation on Incontinence-Research Society (ICI-RS), 14 to 16 June 2018 (Bristol, UK): "How can we prevent postprostatectomy incontinence by patient selection, and by preoperative, peroperative, and postoperative measures?"

Results: Several baseline parameters were proposed as predicting factors for postprostatectomy urinary incontinence (PPUI), including age, tumor stage, prostate volume, preoperative lower urinary tract symptoms, maximum urethral closure pressure, and previous transurethral resection of the prostate. More recently, magnetic resonance imaging has been used to measure the membranous urethral length and sphincter volume. Peroperative techniques include preservative and reconstructive approaches. Bladder neck preservation improved early (6 months), as well as long-term (>12 months) continence rates. Several prospective studies have reported earlier return of continence following preservation of puboprostatic ligaments, although no long-term data are available. Preservation of the urethral length yielded controversial outcomes. Concerning postoperative strategies, it is probably optimal to remove the catheter in a window between 4 and 7 days if clinically appropriate; however, more research in this regard is still required. Postoperative PFME (preoperative pelvic floor muscle exercise) appears to speed up the recovery of continence after RP.

Prevention?

- Baseline risk factor:
  - Age, tumor stage, prostate volume, LUTS, max. urethral closure pressure, previous TURP
- Peroperative:
  - Preservative and reconstructive approaches:
    - bladder neck! puboprostatic ligaments? urethral length??
- Postoperative:
  - TWOC (trial wo catheter) 4-7 days
  - Pelvic floor muscle exercise? → Speed up recovery
- Additional risk factor: Combination of any pelvic irradiation



Tweet

Shaun Dobson-Fox
@ShaunDobsonFox

Got the sneezes this morning. It's not good to sneeze after a #Prostatectomy I've pissed myself six times. 😕.
#ProstateCancer #Recovery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Meta-analysis - Europ...
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Meta-analysis. - PubM...
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Henriette Veiby Holm
@veiby_holm
Consultant urological surgeon @oslounivsykehus #reconstructiveurology #neurourology #urethralstrictures #maleincontinence - mother of two - and then some
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Tweets
Tweets & replies
Media
Henriette Veiby Holm @veiby_holm · 2m
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Today Robotic Radical Prostatectomy. In vivo there are several "forces" involved in mechanism of Urinary continence.

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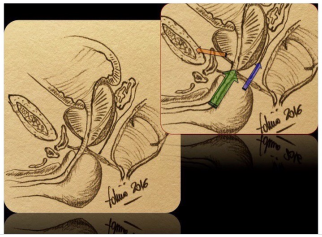
@fabriziodalmoro

Today Robotic Radical Prostatectomy. In vivo there are several "forces" involved in mechanism of Urinary continence.

Oversett fra engelsk



Tweet et svar

Tweet

SURE urology følger

mohantha dooldeniya
@MDooldeniya

Very useful for consideration of continence post prostatectomy. Sphincter is more cranial than expected.

Oversett fra engelsk

> **European Urology** @EUplatinum
> Critical Analysis of Current Knowledge of Surgical Anatomy of the Prostate Related to Optimisation of Cancer Contr buff.ly/1mdegUQ

05.02.2016, 06.05

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Christopher Wallis likte

John W. Davis, MD
@jdhdavis

My tips/trick...Robot-assisted radical prostatectomy: Continence preserving technique youtu.be/xyu4lVr5koU via @YouTube

Oversett fra engelsk

YouTube

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jim catto likte

Matt Cooperberg, MD
@dr_coops

Impressive talk from Koon Rha re: Retzius sparing prostatectomy. Excellent continence outcomes. Anyone else out there doing this? #robonapa

Oversett fra engelsk

04.08.2016, 19.28 fra San Francisco, CA

3 LIKER

Alan McNeill @mcneill_alan · 06.08.2016
Svar til @dr_coops
Yes. Aldo Bocciardi @aldomassimo10

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C. Michael Gibson MD følger

Igor Nunes-Silva
@IgorNunes_Silva

"Bladder Neck Preservation: Cornerstone for early continence after radical prostatectomy." #ProstateCancer #urology #usanz17 #UroProctors

Oversett fra engelsk

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Amer. Urol. Assn. følger

Matt Ferroni
@ferroni_matt

V-lock suture worse continence rates than monocryl for prostatectomy anastomosis #AUA16

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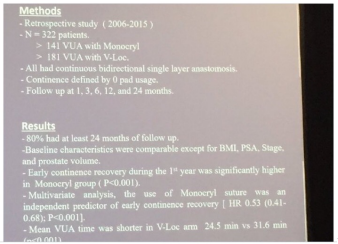

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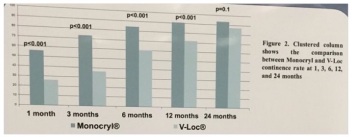
Maria J. Ribal retweetet

Igor Sorokin
@DrIgorSorokin

monocryl for VUA has earlier return to continence after prostatectomy compared to VLoc in first yr. #aua16

Oversett fra engelsk



Université Montréal og DrKevinZorn
07.05.2016, 18.46

6 RETWEETS 3 LIKER

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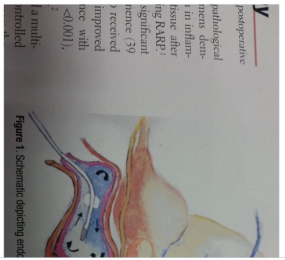
Dr. John Van Savage
@DrJohnVanSavage

Endorectal cooling balloon for robot-assisted radical prostatectomy decreases local inflammation, and may even improve continence.#urology

Oversett fra engelsk



Tweet et svar

Tweet

Christopher Wallis likte

John W. Davis, MD
@jdhdavis

My tips/trick...Robot-assisted radical prostatectomy: Continence preserving technique youtu.be/xyu4lVr5koU via @YouTube

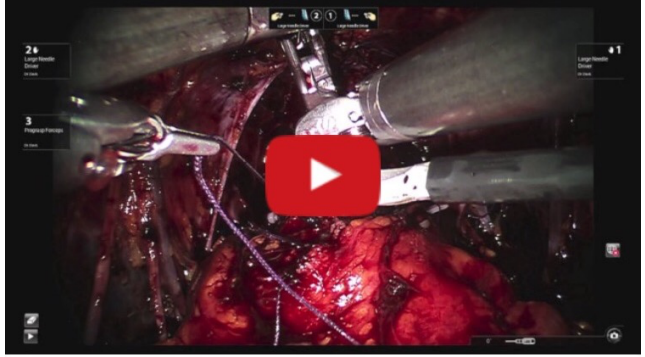
Oversett fra engelsk

YouTube

Tweet et svar

m.youtube.com

YouTube



Robot-assisted radical prostatectomy: Continence preserving technique

John Davis · sett 296 ganger

4 0

Techniques for Improving Continence Post RARP: Dr Rajesh...
Vattikuti Foundation
sett 80 ganger

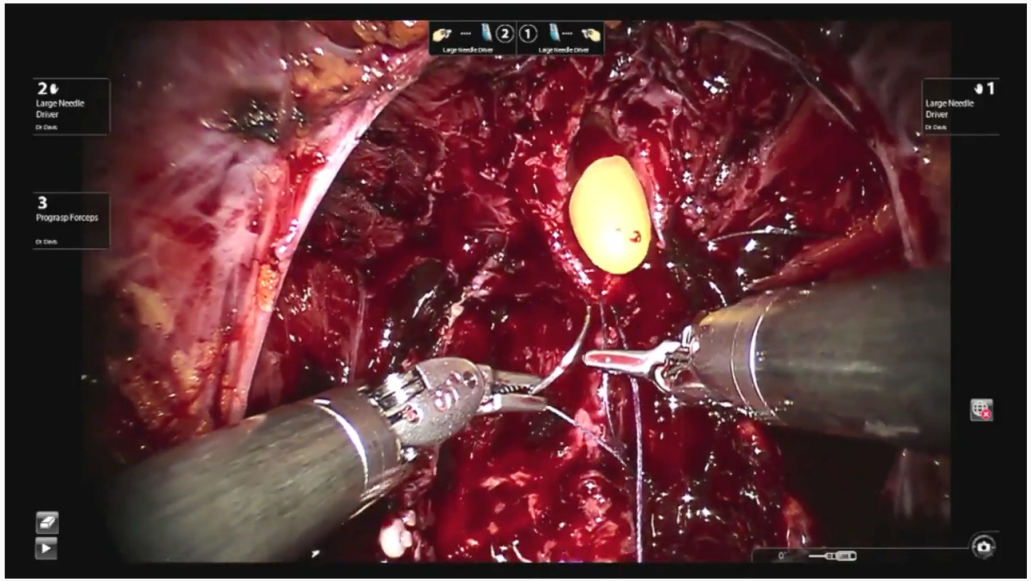
Extended Template Pelvic Lymph Node dissection--"Spaces"
John Davis
sett 164 ganger

Tweet link

RP technique

YouTube NO

Søg https://youtu.be/xyu4lVr5koU



Robot-assisted radical prostatectomy: Continence preserving technique

297 visninger 4 0

Postprostatectomy incontinence (PPI)

- Background, epidemiology
- Risk factors and pathophysiology
- Preoperative evaluation and investigation
- Surgical treatment options
- Outcome
- Summary and conclusions

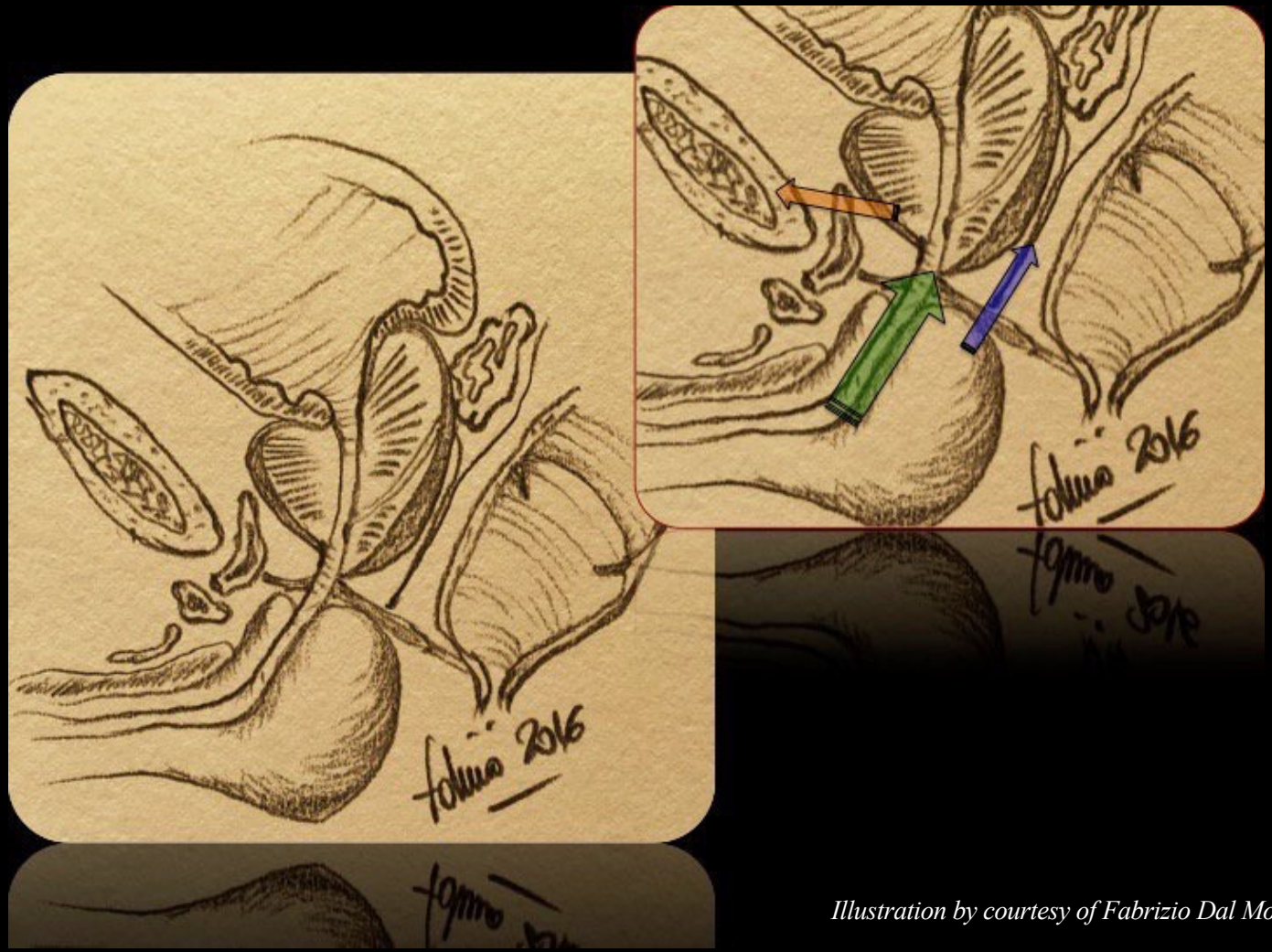


Illustration by courtesy of Fabrizio Dal Moro

Pathophysiology

Postprostatectomy incontinence (PPI):

- Stress incontinence ← Intrinsic sphincter deficiency (ISD)
- Urgency incontinence ← Bladder dysfunction
- Mixed incontinence ← Combination
- Overflow incontinence ← Anastomosis stricture
- Post micturition dribble ← Incomplete emptying

Pathophysiology

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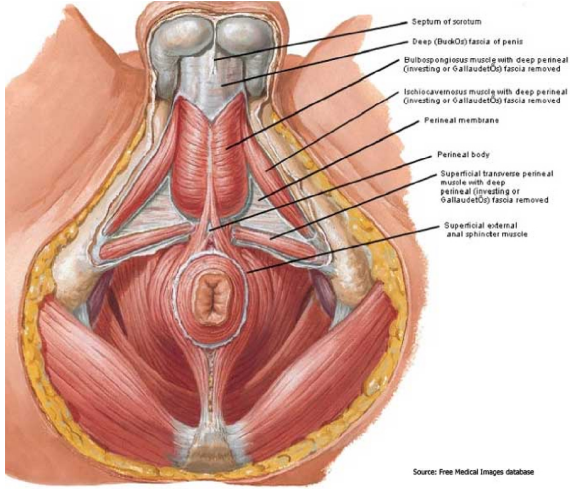
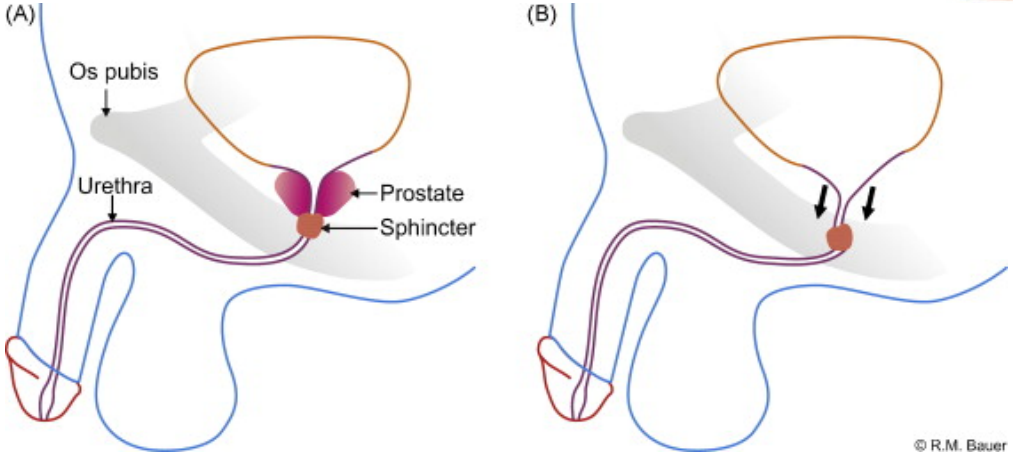
- Mixed incontinence ← Combination
- Overflow incontinence ← Anastomosis stricture
- Post micturition dribble ← Incomplete emptying

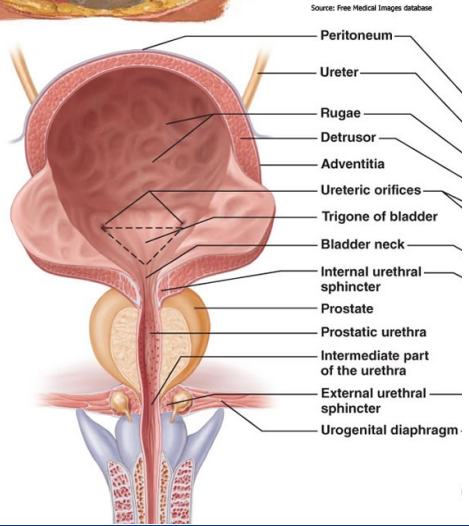
Pathophysiology

Stress urinary incontinence following RP:

- Intrinsic sphincter deficiency (ISD)
- Urethral hypermobility / dorsal support laxity







Postprostatectomy incontinence (PPI)

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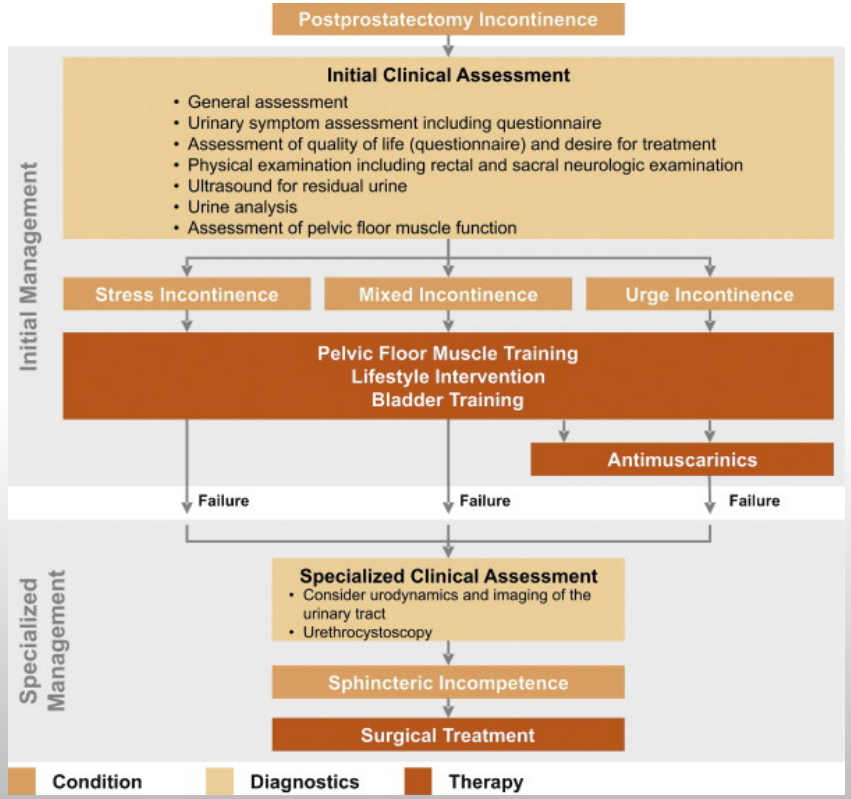
Preoperative evaluation and investigations



Bauer RM, Eur Urol 2011

Conservative management for postprostatectomy urinary incontinence (Review)

Anderson CA, Omar MI, Campbell SE, Hunter KF, Cody JD, Glazener CMA

This is a reprint of a Cochrane review, prepared and maintained by The Cochrane Collaboration and published in *The Cochrane Library* 2015, Issue 1

http://www.thecochranelibrary.com

Conservative management of PPI

1. Pelvic floor muscle training –
   - one-to-one therapy?
   - with oscillating rod?
2. Electrical stimulation?
3. External magnetic innervation?
4. External compression device (penile clamp)
5. Lifestyle changes – not studied

- ➢Low level of evidence
- ➢Methodological limitations
- ➢Undetermined effects

Preoperative evaluation and investigations

1. A focused clinical urological history, including impact on QOL

2. Standardized questionnaires assessing symptoms and related bother, including impact on QOL *(optional)*

3. **Urinary diaries and pad tests** - severity of the urinary incontinence

4. Non-invasive clinical examinations: **Free uroflowmetry** and ultrasound for post-void residual (**PVR**) urine measurement

5. Invasive clinical examinations: **Urodynamics** and **cystoscopy** *(optional?)*

Preoperative evaluation and investigations

- Medical History – Background
  - Coherence in time of the symptoms with:
    - RP? Radiation therapy? Bladder neck incision? Previous TUR-P?
  - Neurological disease/symptoms?
  - Improved continence last 3 months?
  - Trial of conservative treatment?
- Symptoms
  - Stress and/or urgency incontinence?
  - Nocturnal incontinence?
  - Incontinence when going to the toilet in the morning?
  - More incontinence in the afternoon (pelvic floor fatigue)?
  - Can urinary stream be interrupted?
- Affecting quality of life?

Preoperative evaluation and investigations

Assessing severity and impact of the incontinence

Grade	Definition
0	Leakage reported in history but not demonstrable on exam
1	Delayed drops only
2	Early drops, no stream
3	Drops initially, delayed stream
4	Early and persistent stream

Grade	Average 24-hour pad weight
MSIGS 0	57.0 g
MSIGS 1	117.3 g
MSIGS 2	223.0 g
MSIGS 3	385.1 g
MSIGS 4	513.3 g

- Voiding / micturition diary and pad weights
  - 24 - 48 - 72 hours
  - Reflect physiologic bladder capacity
- MSIGS: Male Stress Incontinence Grading Scale 0-4 (by Standing Cough Test)

- Quality of life questionnaires
  - Specific for prostate cancer population: EPIC-26 Urinary domain
  - General incontinence and QOL: ICIQ-SF, ICIQ-UIqol, I-QOL, PGI-I, IIQ-7

Preoperative evaluation and investigations

Assessing the lower urinary tract: bladder and outlet

- **Urethrocystoscopy**
  - Urethra, sphincter area, anastomosis and bladder neck, bladder
  - Striated sphincter function: Ask patient to contract
  - ”Repositioning test”: coaptive zone ≥ 1 cm (AdVance)

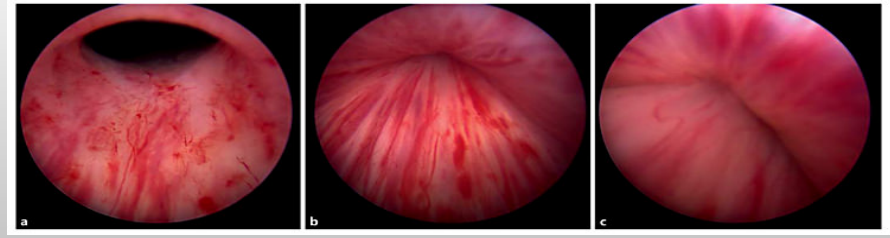


Fig. 1. Positive RT. **a** Before repositioning. **b** During repositioning without active sphincter contraction. **c** During repositioning with active sphincter contraction.

Fig. 2. Negative RT. **a** Before repositioning. **b** During repositioning without active sphincter contraction. **c** During repositioning with active sphincter contraction.

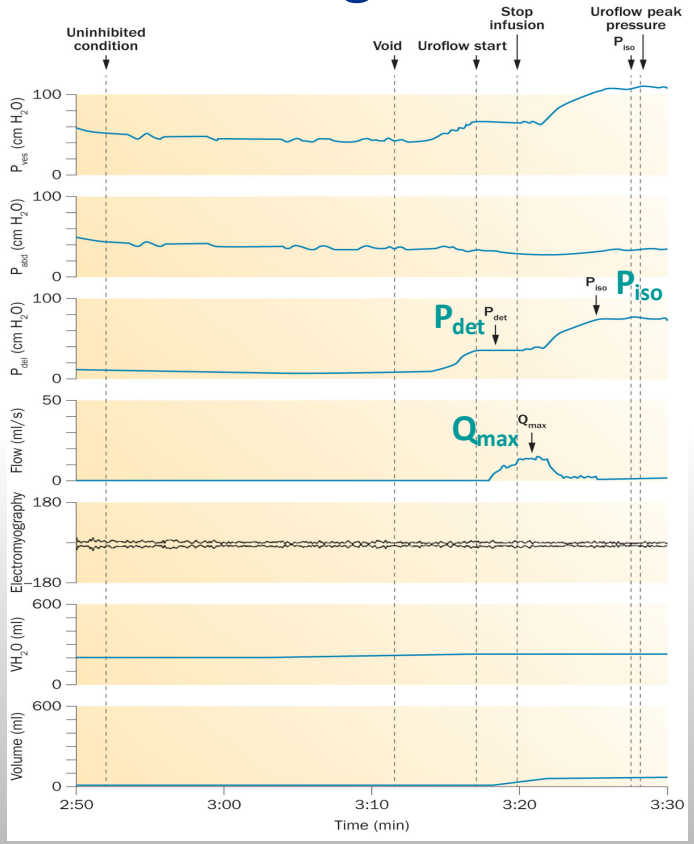
Preoperative evaluation and investigations

Assessing the lower urinary tract: bladder and outlet

- **Urodynamics**
  - **Non-invasive methods** (mandatory)
    - Catheter free uroflowmetry
    - Ultrasound measuring PVR
      - Bladder voiding efficiency; contractility, anastomotic stricture
  - **Invasive methods** (individualized?)
    - Cystometry
      - DO (+/- leak?), impaired bladder compliance, ALPP, (RLPP), UPP
    - Pressure/flow
      - Nomogram, BCI, BOOI – not valid for PPI – mechanical stop test (?)
    - Dynamic imaging (MUCG, VCUG)

Preoperative evaluation and investigations

Urodynamic measurements of detrusor contractility during **the mechanical stop test**

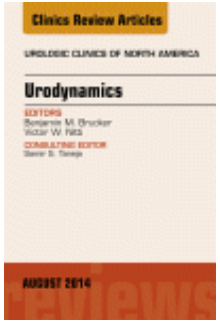


Comiter, C. (2014) Surgery for postprostatectomy incontinence: which procedure for which patient? *Nat. Rev. Urol.* doi:10.1038/nrurol.2014.346

Preoperative evaluation and investigations

Urodynamics for Postprostatectomy Incontinence

When Are They Helpful and How Do We Use Them?



Ying H. Jura, MD*, Craig V. Comiter, MD

KEYWORDS

• Postprostatectomy incontinence • Urodynamics • Stress urinary incontinence
• Detrusor underacitivity • Detrusor overactivity • Low bladder compliance
• Artificial urinary sphincter • Male sling

KEY POINTS

- Urodynamics is indicated for the evaluation of postprostatectomy incontinence (PPI) unless an artificial urinary sphincter (AUS) placement is the preferred option, as in cases of severe incontinence, prior radiation, or previous male sling or AUS placement—when male sling is unlikely to achieve efficacy.
- Urodynamics should be performed only when there is a question it can answer that would affect treatment choice or outcome.
- Urodynamic findings of detrusor underactivity, overactivity, and reduced compliance are important considerations in deciding how best to treat postprostatectomy incontinence.

Preoperative evaluation and investigations

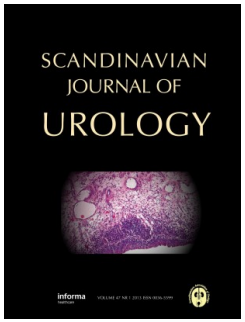
SCANDINAVIAN
JOURNAL OF
UROLOGY

ORIGINAL ARTICLE

Severe postprostatectomy incontinence: Is there an association between preoperative urodynamic findings and outcome of incontinence surgery?

Henriette Veiby Holm [1,2,3], Sophie D. Fossa[1,3], Hans Hedlund[2,3], Alexander Schultz[2] and Alv A. Dahl[1,3]

[1]Department of Oncology, Oslo University Hospital, Radiumhospitalet, Oslo, Norway, [2]Department of Urology, Oslo University Hospital, Rikshospitalet, Oslo, Norway, and [3]Faculty of Medicine, University of Oslo, Oslo, Norway



→Urodynamic findings were not predictive of surgical outcome

→Invasive urodynamics may be omitted in patients with **pure sphincter deficiency** and otherwise **normal bladder function and outlet** assessed by history, voiding diaries, free uroflowmetry and PVR measurement.

→ Preoperative counselling is important

Postprostatectomy incontinence (PPI)

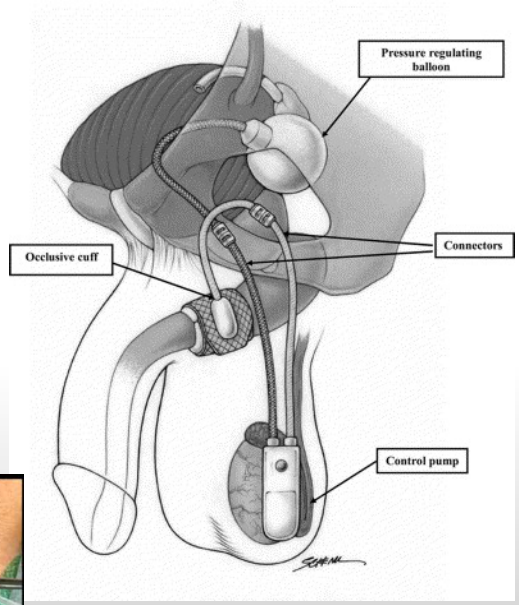
- Background, epidemiology
- Risk factors and pathophysiology
- Preoperative evaluation and investigations
- Surgical treatment options
- Outcome
- Summary and conclusions

Surgical treatment options

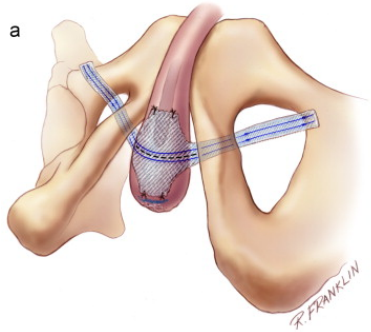
Type		Mode of action	Brand
Artificial urinary sphincters	Fixed	Urethral compression	AMS800® FlowSecure® Zephyr ZSI375®
Urethral slings	Fixed	Repositioning of urethral bulb	AdVance XP®
	Fixed	Urethral compression	InVance® TOMS® Argus®
	Fixed	Repositioning and compression	Virtue®
	Adjustable	Urethral compression	Remeex® Argus® ATOMS®
Balloons	Adjustable	Urethral compression	ProACT®

Surgical treatment options

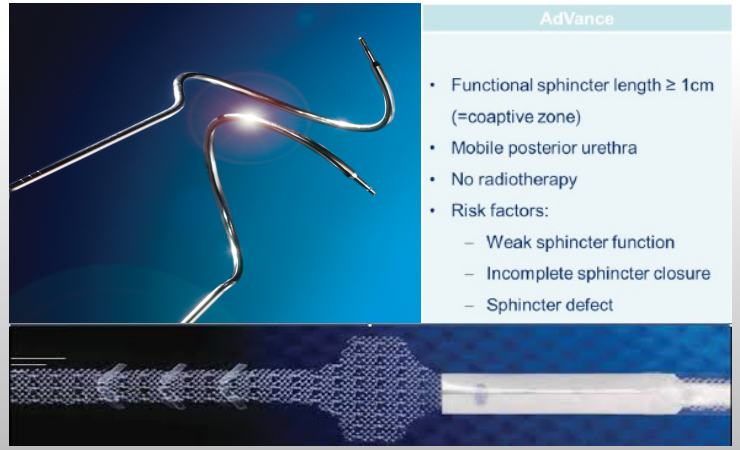
AMS 800®
Artificial Urinary Sphincter

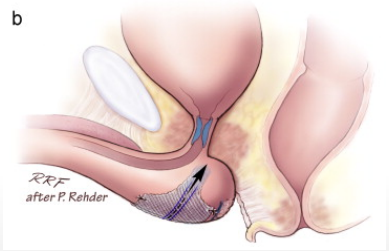


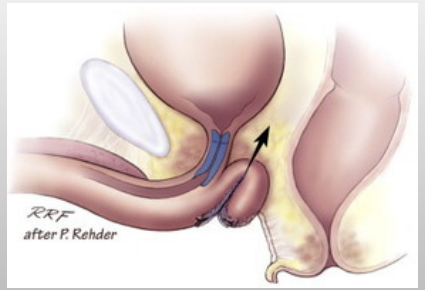
Surgical treatment options



AdVance XP ®
Retrourethral Transobturator Sling

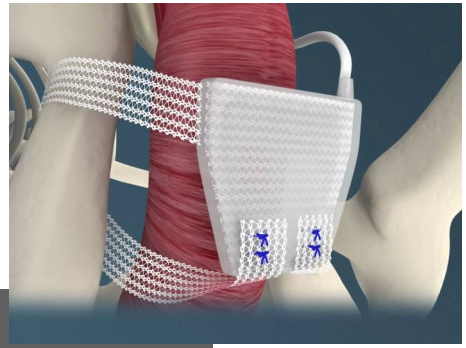


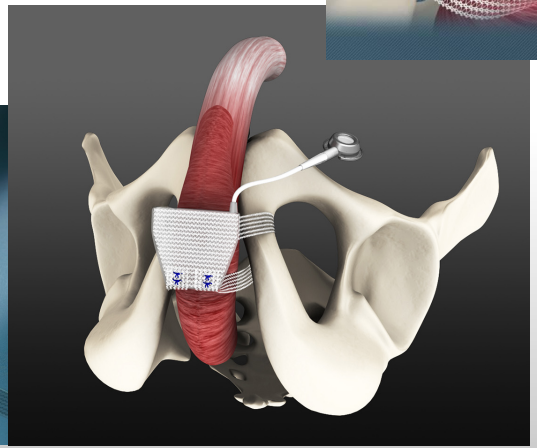




Surgical treatment options

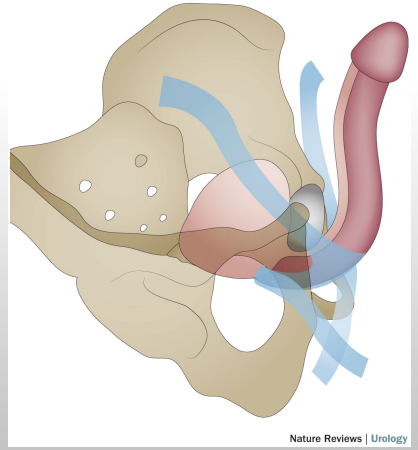
ATOMS ®
Sling

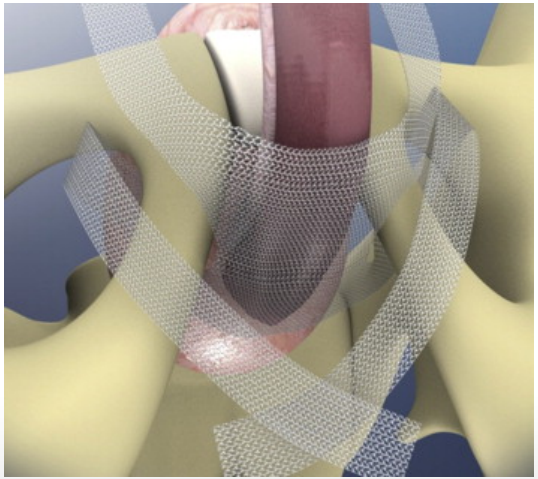




Surgical treatment options

Virtue ®
Quadratic Sling



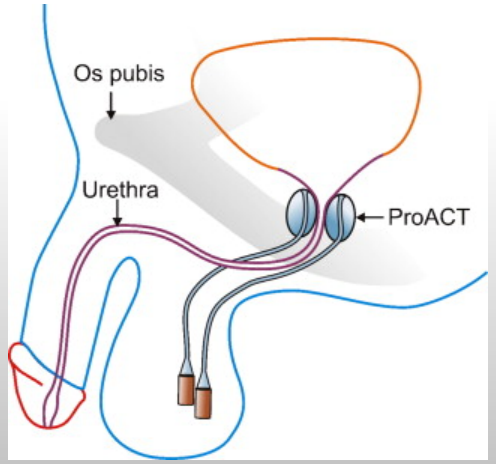


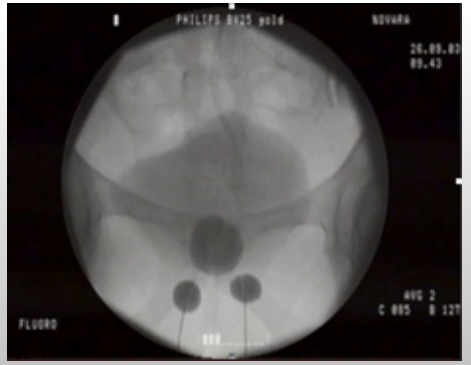
Transobturator component:
Relocates the proximal urethra
Prepubic component:
Compresses the bulbar urethra

Comiter CV J Urol 2014

Surgical treatment options

ProACT ®
Adjustable Balloons





Surgical treatment options

Individual treatment selection for PPI

AdVance	Adjustable slings	AUS
• SUI I-II° • Mobile posterior urethra • Coaptive zone ≥1cm • No SUI III° • No sphincter defect • Caveat: Radiotherapy	• SUI II-III° • AUS impossible or not accepted • No decreased outcome – Radiotherapy – Sphincter defect	• SUI III° • Severe/complete sphincter defect • Complete incontinence • High psychological strain • Tumor progress

By courtesy of Bauer RM, ICS 2014

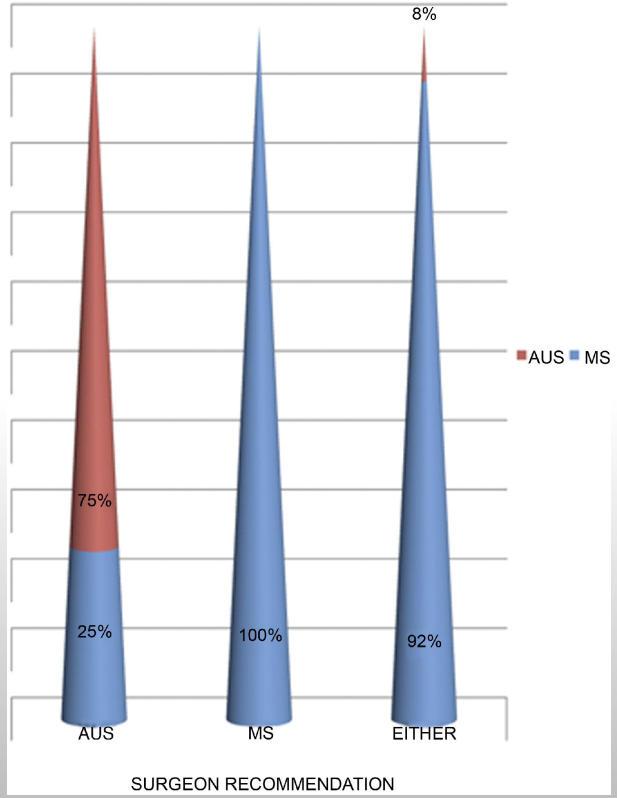
Surgical treatment options

THE JOURNAL of UROLOGY®

Official Journal of the American Urological Association

Artificial Urinary Sphincter Versus Male Sling for Post-Prostatectomy Incontinence — What Do Patients Choose?

Angelish Kumar, Elana Rosenberg Litt, Katie N. Ballert, Victor W. Nitti
J Urol. 2009 Mar;181(3):1231-5.



Surgical treatment options

Timing?

Natural history of urinary function recovery after RP:

✧Most patients gradually regain (some) urinary continence within the first year

✧Modest improvement second and third year

Postprostatectomy incontinence (PPI)

- Background, epidemiology
- Risk factors and pathophysiology
- Preoperative evaluation and investigations
- Surgical treatment options
- Outcome
- Summary and conclusions

Outcome

Results of the artificial urinary sphincter in postprostatectomy incontinence			
Author, year	**No. pts.**	**Follow-up (yrs)**	**0-1 pad/day**
Goldwasser et al., 1987	42	1.2	82%
Montague, 1992	66	3.2	75%
Perez and Webster, 1992	49	3.7	85%
Martins and Boyd, 1995	28	2	85%
Fleshner and Herschorn, 1996	30	3	87%
Haab et al, 1997	36	7.2	80%
Klijn et al., 1998	27	3	81%
Mottet et al., 1998	96	1	86%
Madjar et al., 2000	71	7.7	59%
Lai et al., 2007	218	3.1	69%
Trigo-Rocha et al., 2008	40	4.5	90%
Kim et al., 2008	124	6.8	82%
Holm et al., 2013	85	2.2	48% ← ?

Outcome

INTERNATIONAL JOURNAL OF UROLOGY

International Journal of Urology (2013) doi: 10.1111/iju.12077

Original Article

Study of generic quality of life in patients operated on for post-prostatectomy incontinence

Henriette Veiby Holm,[1,2,3] Sophie D Fossa,[1,3] Hans Hedlund[2,3] and Alv A Dahl[1,3]

[1]Department of Oncology, Oslo University Hospital Radiumhospitalet, [2]Department of Urology, Oslo University Hospital Rikshospitalet, and [3]University of Oslo, Oslo, Norway

Median 26 months (6-104 months) after AUS implantation

Satisfied with operative result	**76 (92%)**
Recommend operation to others	**80 (94%)**
Would choose operation again	**81 (96%)**
Urinary problem present	**20 (23%)**
Leaked urine ≥ once daily	**60 (71%)**
Used ≥ 2 pads per day	**44 (52%)**

Outcome

Table 1 | Effectiveness and complications of implantation procedures

Device	Success rate* (%)	Common complications
Artificial urinary sphincter[20,30]	>80	Infection or erosion 5–8% Urinary retention 0% Mechanical failure 6–23%
Bone anchored male sling[31–34]	65–80	Infection or erosion 2–3% Urinary retention 1–2% Pelvic pain 16–19%
Retroluminal sling[6,36,37]	63—80	Infection or erosion <1% Urinary retention 3–23% Pelvic pain 0–10%
Quadratic sling with fixation[43]	70–79	Infection or erosions 0% Urinary retention 0% Pelvic pain 12–19%

*Defined as either cure or substantial improvement of continence.

Comiter, C. (2014) Surgery for postprostatectomy incontinence: which procedure for which patient? *Nat. Rev. Urol.* doi:10.1038/nrurol.2014.346

Outcome

Outcome of adjustable and fixed sling systems

	Argus	Atoms	Remeex	AdVance
Max. FU	Up to 50.4 mo	• Up to 30 mo • Mean fu 17.8 mo	Average 77 mo	Up to 3 years
Outcome	• Cured 54-79.2% • No difference with and without radiotherapy	• Cured 63% • No difference with and without radiotherapy	• Cured 72% • Improved 20.6% • Failed 7.4%	• Cured up to 65.9% • After radiotherapy lower success rates
Complications	• Adjustment rate 38.6% • ≤15.8% explantation due to infection/erosion • Explantation due to pain 1% • Persistent pain ≤5%	• Mean number of adjustment 3.8 • 4% explantation due to infection • 68.7% postop. perineal/scrotal numbness/pain	• 100% 1x readjustment • 1.5% erosion • 4.4% Varitensor seromas • 19.1% bladder /urethral perforation • Almost all postop. perineal discomfort/pain	• Up to 18% temporary residual urine/retention • <1% persistent pain • Explantation rate <2% • Caveat: AdVanceXP overtensioning -> persistent residual urine

By courtesy of Bauer RM, ICS 2014

Outcome

Conclusions: Bo
of patients with S
clinical trials are
severity of incon
measured.

Neurourology and Urodynamics 35:875–881 (2016)

Systematic Review of Surgical Treatment of Post Radical Prostatectomy Stress Urinary Incontinence

Simone Crivellaro,[1*] Alessandro Morlacco,[2] Giovanni Bodo,[3] Enrico Finazzi Agro',[4] Christian Gozzi,[5] Donatella Pistolesi,[6] Giulio Del Popolo,[7] and Vincenzo Ficarra[8]

[1]Department of Urology, University of Illinois at Chicago, Chairman of SIUD Male Pelvic Health Committee, Chicago, Illinois
[2]Department of Urology, University of Padua, SIUD Male Pelvic Health Committee, Padua, Italy
[3]Department of Neuro-Urology, CTO-Maria Adelaide Hospital, SIUD Male Pelvic Health Committee, Turin, Italy
[4]University of Rome 'Tor Vergata', SIUD Male Pelvic Health Committee, Rome, Italy
[5]Department of Urology, Health Agency of South Tyrol, SIUD Male Pelvic Health Committee, South Tyrol, Italy
[6]Department of Urology, University of Pisa, SIUD Male Pelvic Health Committee, Pisa, Italy
[7]Department of Neuro-urology, Florence. SIUD Male Pelvic Health Committee, Florence, Italy
[8]University of Udine, SIUD Male Pelvic Health Committee, Udine, Italy

Context: Stress urinary incontinence (SUI) after radical prostatectomy (RP) continues to be a significant problem with several implications including patient quality of life and other critical postoperative outcomes. **Objectives:** To report the results in terms of efficacy (pad count, 24 hr pad test, QOL questionnaires) and safety (complication rate and type of complications) of all surgical devices approved for the treatment of SUI after RP. **Evidence Acquisition:** A systematic review was conducted in accordance with the PRISMA Statement. A literature search was carried out through the PubMed/Medline, SCOPUS, and Web of Science databases using the keywords "incontinence," "radical prostatectomy," and "'treatment". Inclusion criteria were: number of patients higher than 30, mean follow up longer than 12 months and definition of a successful outcome as the use of 0 to 1 safety pads a day. **Evidence Synthesis:** 113 papers underwent primary review. 51 papers met the inclusion criteria with a total sample size of 4022 patients. Efficacy (0–1 safety pads) was on average 65.7% for AUS, 48.2% for Invance Sling, 48.8% for Advance Sling, 64.2% for ProACT. Twenty four hour pad test and QOL questionnaires were respectively available only in 4 and 18 studies. The overall complication rate was 19.43% for AUS, 7.4% for Invance Sling, 12.3% for Advance Sling, 12.3% for ProACT. **Authors' Conclusions:** Due to the poor overall quality of available studies, it was impossible to identify or refute clinically important differences between the alternative surgical procedures. Although our data seems to suggest that AUS has the highest efficacy in the treatment of SUI following RP it is also associated with the highest complication rate, but this may be due to the longest follow up. Larger rigorous trials are needed in order to support this evidence. *Neurourol. Urodynam. 35:875–881, 2016.*

Key words: device; incontinence; radical prostatectomy

Abstracts EAU19 – 34th Annual EAU Congress

788

Prospective European registry for patients undergoing surgery for male stress urinary incontinence: An initial report of the registry 'SATURN'

Eur Urol Suppl 2019; 18(1);e1063

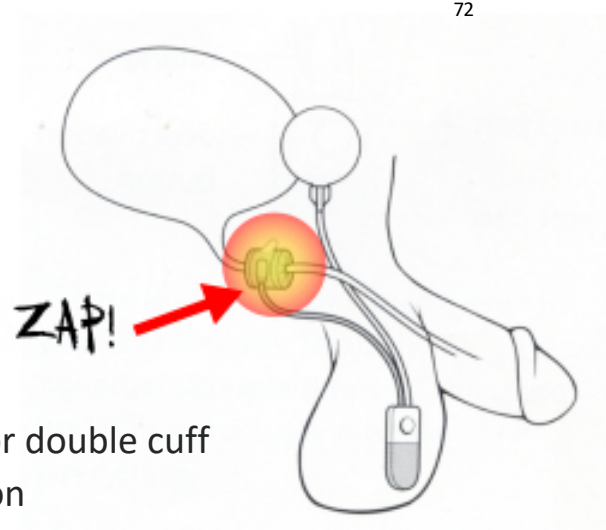
Van Der Aa F. [1] , Heesakkers J. [2] , Martens F. [2] , Thiruchelvam N. [3] , Bjartell A. [4] , Caris C. [4] , Schipper R. [4] , Witjes W. [4] , Hamid R. [5] , EAU Research Foundation SATURN Study Group

[1]University Hospital Leuven, Dept. of Urology, Leuven, Belgium, [2]Radboud UMC, Dept. of Urology, Nijmegen, The Netherlands, [3]Addenbrooke's Hospital, Dept. of Urology, Cambridge, United Kingdom, [4]EAU Research Foundation, Dept. of Clinical Research, Arnhem, The Netherlands, [5]Royal National Orthopaedic Hospital, Dept. of Neurourology, London, United Kingdom

Introduction & Objectives: Artificial urinary sphincter (AUS) implantation has been the standard of care for refractory male stress urinary incontinence (SUI) for many years. To date new surgical procedures with devices like slings (fixed and adjustable) are increasingly used. However, EAU guidelines only assign a level of evidence of 3 for the efficacy of slings. Currently, there are no clear recommendations which patient factors would identify the best surgical treatment options for SUI with either AUS or sling. Objectives of this registry are to evaluate the effects of surgical treatment of SUI with current available devices and to determine prognostic factors which may help to identify clinical and surgical variables that correlate with (un)favorable outcomes.

Outcome

Postoperative complications

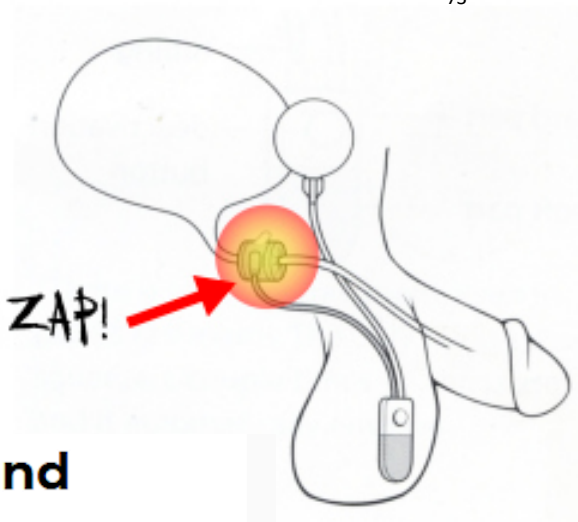


- AMS800®
  - Malplacement of pump → Revision
  - Atrophy of urethra (RLPP) → New and/or double cuff
  - Infection/erosion → Explantation
  - Mechanical failure → Revision and replacement
  - System leakage → Revision and replacement

- Slings
  - Temporary urinary retention → Suprapubic catheter
  - Permanent urinary retention → Division of sling
  - Perineal pain → *Resolves?*

Outcome

Postoperative complications



THE JOURNAL of UROLOGY®

Official Journal of the American Urological Association

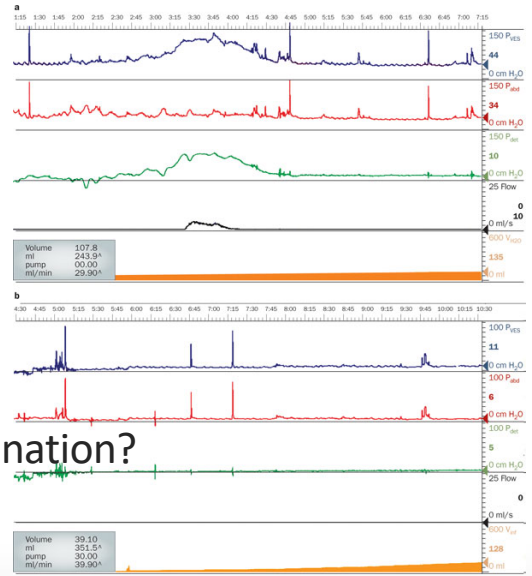
Outcomes and Risk Factors of Revision and Replacement Artificial Urinary Sphincter Implantation in Radiated and Non-radiated Patients

Thomas W. Fuller, Eric Ballon-Landa E, Kelsey Gallo, Thomas G. Smith, Divya Ajay, Ouida L. Westney, Sean P. Elliott, Nejd F. Alsikafia, Benjamin N. Breyer, Andrew J. Cohen, Alex J. Vanni, Joshua A. Broghammer, Brad A. Erickson, Jeremy B. Myers, Bryan B. Voelzke, Lee C. Zhao ... See More +

https://doi.org/10.1097/JU.0000000000000749

Outcome

Postoperative challenges



- Symptoms of overactive bladder (OAB)
  - Urodynamics: Previous results – new examination?

Treat as usual with:

- Anticholinergics
- Beta3-adrenoseptoragonist
- Botox®

Treatment of postprostatectomy incontinence

- Background, epidemiology
- Pathophysiology
- Preoperative evaluation and investigations
- Surgical treatment options
- Outcome
- Summary and conclusions

Summary and conclusions

Treatment of postprostatectomy incontinence

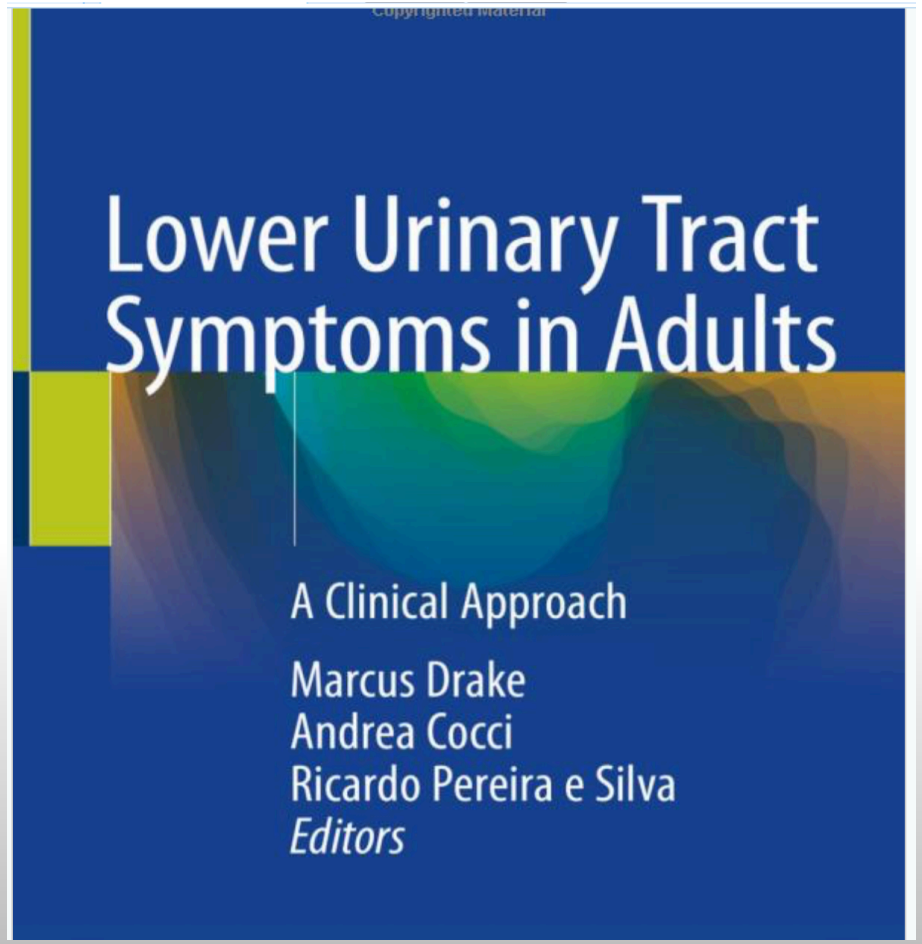
Summary and conclusions

Thorough preoperative evaluation

- ISD with significant incontinence and reduced QOL
  → Indication for surgery
- OAB / DO / Bladder dysfunction:
  → Extended preop. investigations and patient counseling,
  but not contraindication for surgery – treat both!

Surgical treatment options and outcome

- The selection of treatment should be based on contraindications
- Wide overlap of different options, depending on availability
- Patient preference
- **Careful evaluation of irradiated patients and severe bladder dysfunction**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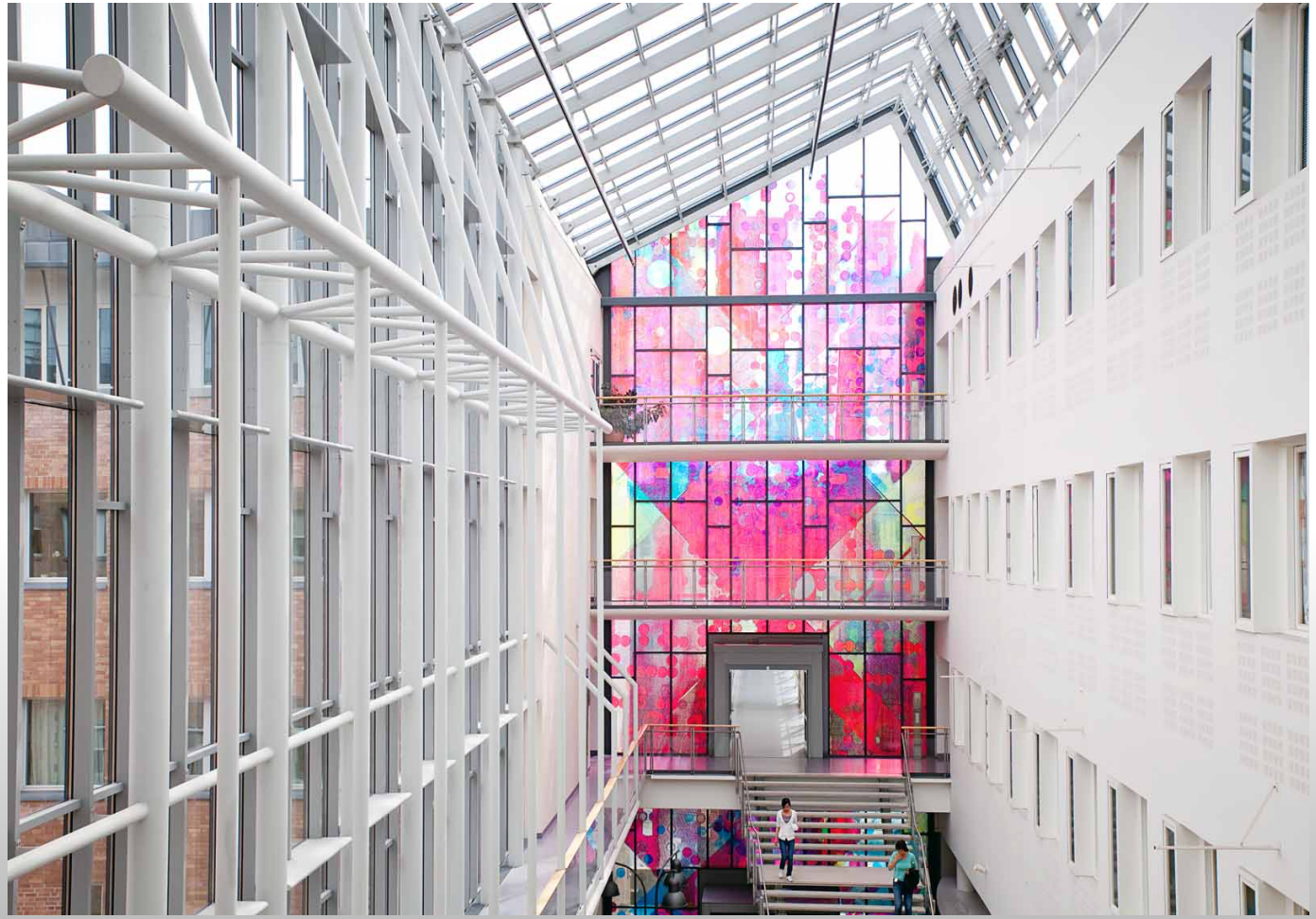
Lower Urinary Tract Symptoms in Adults
A Clinical Approach
Marcus Drake
Andrea Cocci
Ricardo Pereira e Silva
Editors



Thank you for joining the 5th LUTD course!

Illustration by courtesy of Fabrizio Dal Moro

Case 1: Male, born 1951

- History of RP two years earlier, still bothered with PPI
- Anamnestic stress incontinence, worse in the evening, continent at night, severe negative impact on QOL
- Conservative treatment wo. sufficient effect

- Severity: Urinary diaries show normal voiding pattern with volumes up to 450 ml in the morning.
- Pad tests: leakage 50 ml, 90 ml, 170 ml/24h

- Free uroflowmetry: Qmax 20 ml/s Post-void residual (PVR): 0 ml

- Cystoscopy: Positive repositioning test, no visual sphincter damage

Case 1: Male, born 1951

Best treatment option?

1. Try more conservative treatment
2. AdVance sling
3. ATOMS sling
4. ProACT balloons
5. Artificial sphincter prosthesis

Case 2: Male, born 1946

- History of RP 18 months earlier, salvage radiotherapy
- Anamnestic stress incontinence and OAB with urgency and pollakisuria, incontinent at night, severe negative impact on QOL
- Conservative treatment wo. sufficient effect

- Severity: Urinary diaries show frequency with small volumes, however up to 350 ml in the morning
- Pad tests: leakage 450 ml, 290 ml, 700 ml/24 h

- Free uroflowmetry: Qmax 12 ml/s Post-void residual (PVR): 120 ml

- Cystoscopy: Positive repositioning test, no visual sphincter damage
- Urodynamics: normal compliance, DO, good detrusor contractility

Case 2: Male, born 1946

Best treatment option?

1. Try more conservative treatment
2. AdVance sling
3. ATOMS sling
4. ProACT balloons
5. Artificial sphincter prosthesis

Case 3: Male, born 1953

- History of RP 6 months earlier
- Anamnestic stress incontinence, worse when exercising, continent at night, negative impact on QOL
- Conservative treatment wo. sufficient effect

- Severity: Urinary diaries show normal voiding pattern with volumes up to 550 ml in the morning. Pad tests: leakage 15 ml, 20 ml, 10 ml

- Free uroflowmetry: Qmax 25 ml/s Post-void residual (PVR): 0 ml

- Cystoscopy: Positive repositioning test, no visual sphincter damage

Case 3: Male, born 1953

Best treatment option?

1. Try more conservative treatment
2. AdVance sling
3. ATOMS sling
4. ProACT balloons
5. Artificial sphincter prosthesis