



**UZ
LEUVEN**

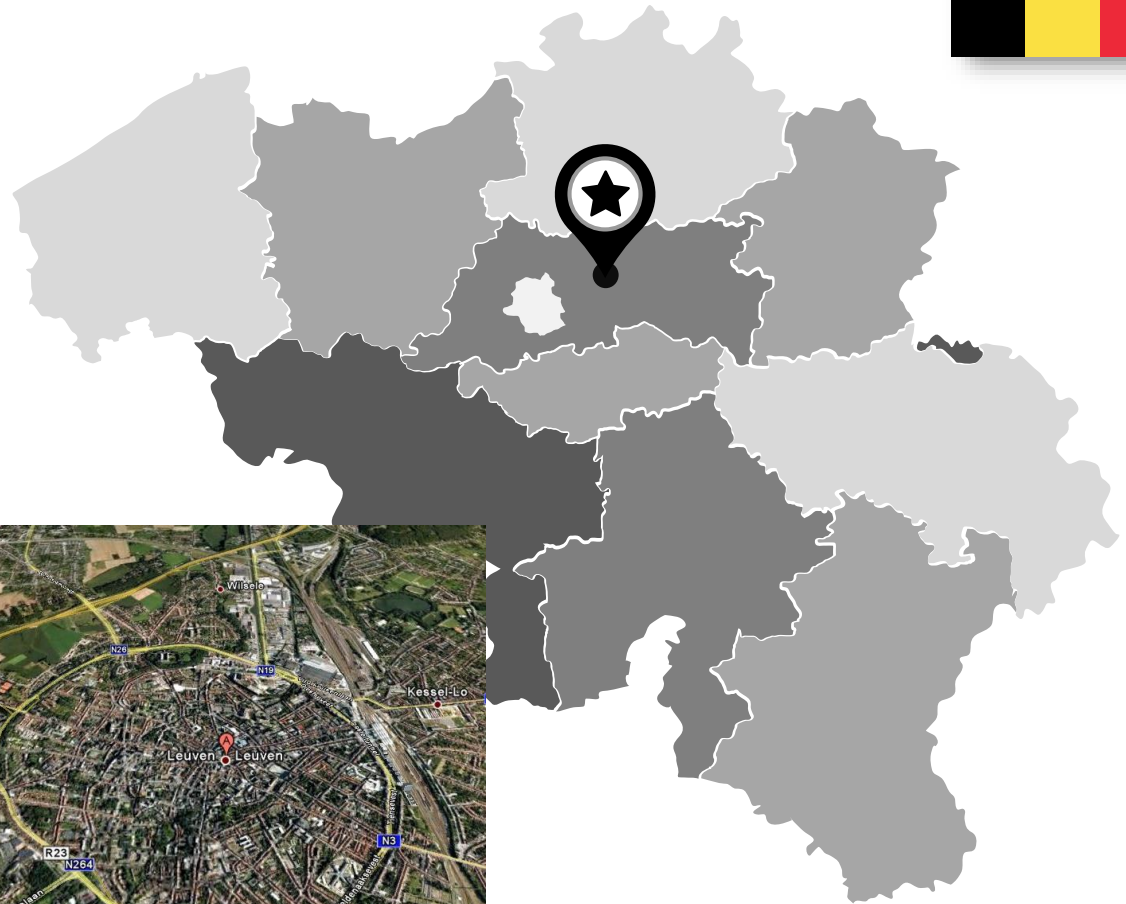


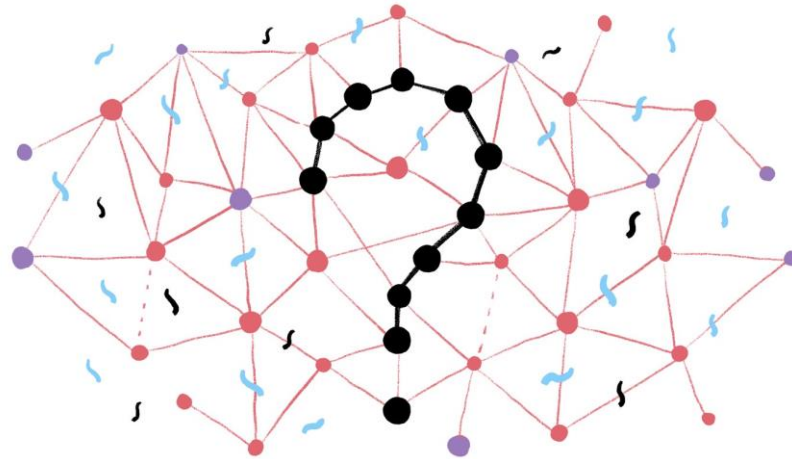
Male post prostatectomy incontinence treatment and complications of irradiation

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disclosures

- Proctor and advisory meeting attendant for Boston Scientific (Advance XP[®], AMS 800[®])
- Advisor for Neomedic (Victo[®] and Victo plus[®])
- Investigator in PROSPECT, a prospective multicenter RCT of USTRAP[®] versus AMS 800[®]) sponsored by Cousin
- Steering committee member of Saturn and Venus registers (EAU RF)





Treatment algorithm

MALE POSTPROSTATECTOMY INCONTINENCE

Postprostatectomy incontinence

- Iatrogenic
- Long life expectancy
- Quality of Life
- Patient expectations
- Shared decision proces
- Lack of high quality data



A case of male PPI



Man, 71 years old, underwent RARP for a gleason 7, pT3aN0 PCA 5 years ago. Negative SM, PSA undetectable.

- *Urine loss during specific activities: gardening, hiking,...no urine loss at night*
- *Can interrupt stream*
- *No urgency, voids adequate volumes (400 ml)*
- *Problem has increased over the last 2 years*
- *Still performs pelvic floor excercises on a daily basis*

A case of male PPI



Man, 71 years old, underwent RARP for a gleason 7, pT3aN0 PCA 5 years ago. Negative SM, PSA undetectable.

Wants additional treatment...which investigations should we perform?

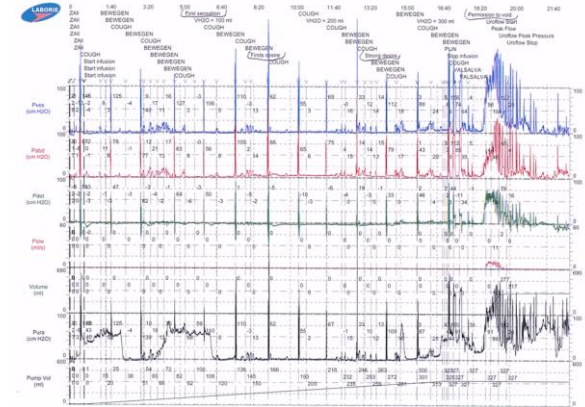
Voiding diary



Time	Fluid intake	Voided volume	Urine loss	remarks
8	Coffee, 250 ml	400		
9	Water, 1 glass		+	<i>Small drop of urine loss</i>
11:30		200		
12:30	Water, 1 glass		+	<i>Lifting</i>
14	Coke, 330 ml	200		
15:30	Coffee, 250 ml	150	++	<i>Hiking</i>
17:00		200	++	<i>Hiking</i>
22:00	Tea, 250 ml			
01:30				
03:00	Water, 1 glass	350		
06:45				Measured urine loss: 175 ml Used 2-3 pads/day
08:30				

Urodynamics

- (Confirm diagnosis)
- Patient counseling
 - Low cystometric bladder capacity
 - Preop frequency/urgency
 - *Need for additional (medical) treatment*
- (Belgian law: reimbursement for artificial urinary sphincter)



Cystoscopy

- To exclude stricture/anastomotic problems
- To evaluate residual sphincteric function

Cystoscopy in the sling candidate

- “Dynamic urethroscopy in lithotomy position with mid perineal elevation behind and parallel to the membranous urethra”
 - Passive coaptation of sphincter
 - Length of coaptive zone should be more than 1 – 1,5 cm

urethral
compression

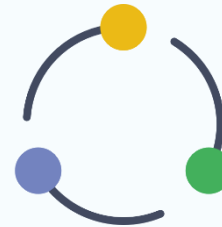


A case of male PPI

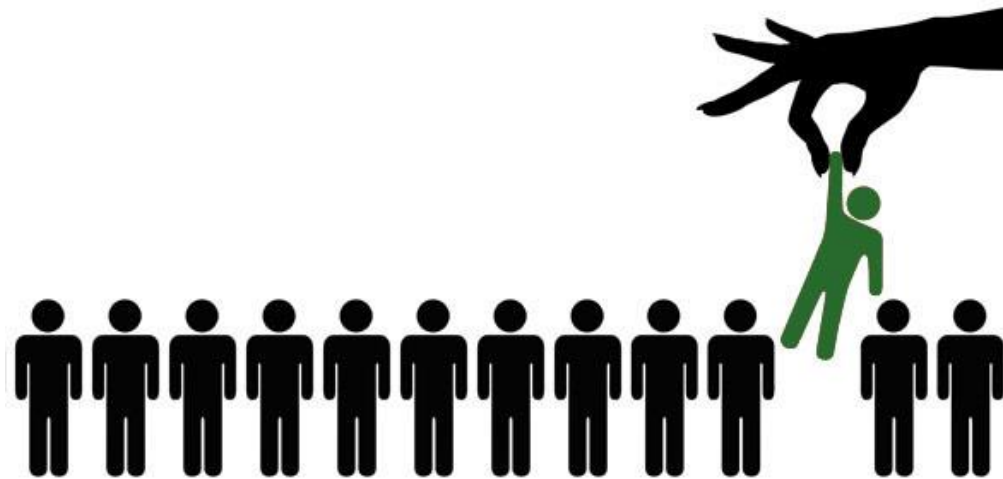


- *We counsel him for two options: male sling (Advance XP[®]) and AUS (AMS 800[®]):*
 - *Explain both options*
 - *Pro's and con's as to efficacy and safety*
 - *Cost*

- *Shared decision proces*



Sling
surgery



Who is candidate for a sling?

THE IDEAL ADVANCE (XP) SLING CANDIDATE?

Male sling surgery?

- Moderate amount of urine loss
 - Good sphincteric coaptation
 - Adequate bladder capacity
-
- radiation therapy
 - stricture disease



What if...



Man, 71 years old, underwent RARP in 2010, pT3aN0

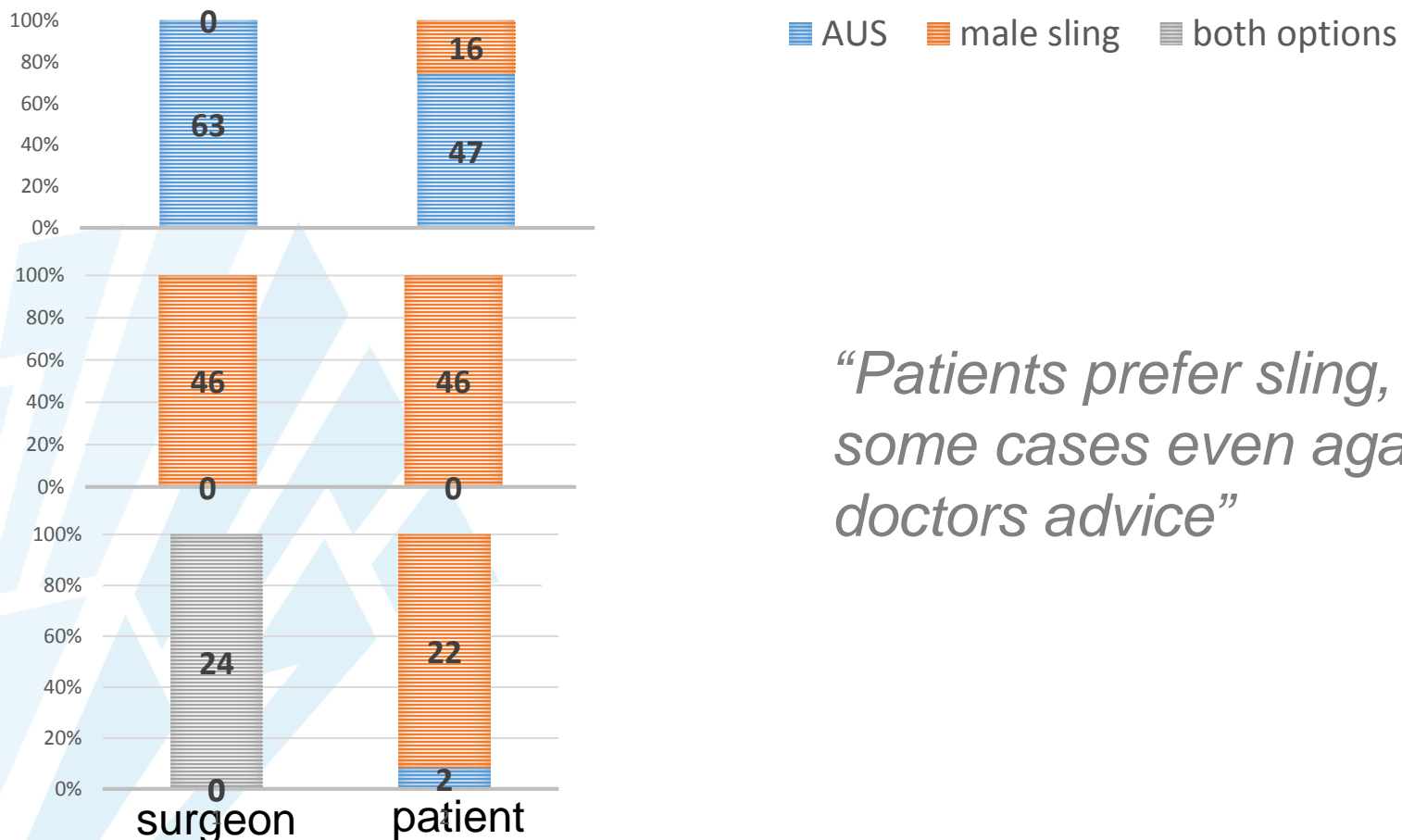
He underwent early salvage RT in 2011 (positive SM, slow rising PSA)

- *Hx, investigations are identical.*
- *He is actively asking for sling surgery...*

Surgeons advice vs. patients choice

- Retrospective chart review (n=133)
- Recommendations based on amount of urine loss:
 - High grade (> 400 g/24h) \rightarrow AUS
 - Moderate grade (100 – 400 g/24h) \rightarrow “both”
 - Mild grade (< 100 g/24h) \rightarrow sling

Surgeons advice vs. patients choice



“Patients prefer sling, in some cases even against doctors advice”

UZ Leuven series



- 216 patients [2007-2018]
- 124 (57%) IDEAL candidates
- 41 (19%) Pelvic irradiation
- 28 (13%) Urethral stricture treatment
- 26 (16%) Detrusor Overactivity on preop UDS

UZ Leuven series

Type of sling		N (216)	%
	AdVance	67	31,0
	AdVance XP	149	69,0
Etiology of incontinence	Open RP	150	69,4
	Robot Assisted RP	53	24,5
	TURP	12	5,6
	Internal optical Urethrotomy	1	0,5
Grade of Incontinence*	Mild	85	45,2
	Moderate	59	31,4
	Severe	44	23,4

Mild = < 2 pads/24h and/or < 200g/24h

Moderate = 2–5 pads/24h and/or 200-500g/24h

Severe = > 5 pads/24h and/or >500g/24h

UZ Leuven series

	Median	ICR
Age	69	63-73
BMI	26	24-28
Incontinence time (months)	33	21-72
N pads/24 h	2	2-4
	Mean	SD
Cystometric bladder capacity (ml)	403	165

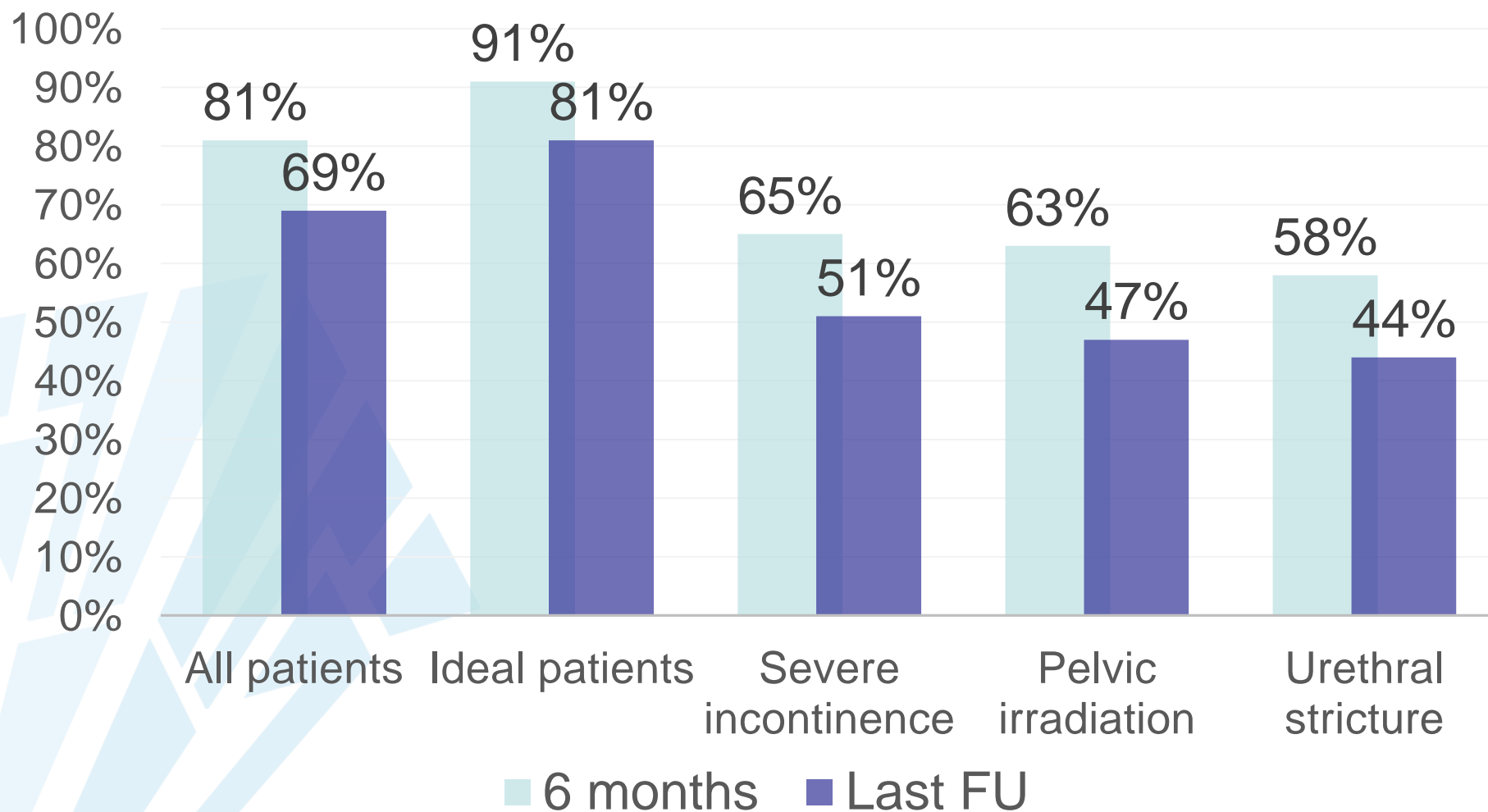
UZ Leuven series: definitions

- Outcome:
 - Totally dry = zero pads
 - Social continence = ≤ 1 pad/24h
 - Failure = reduction of pads $\leq 50\%$ from baseline or additional surgery for incontinence

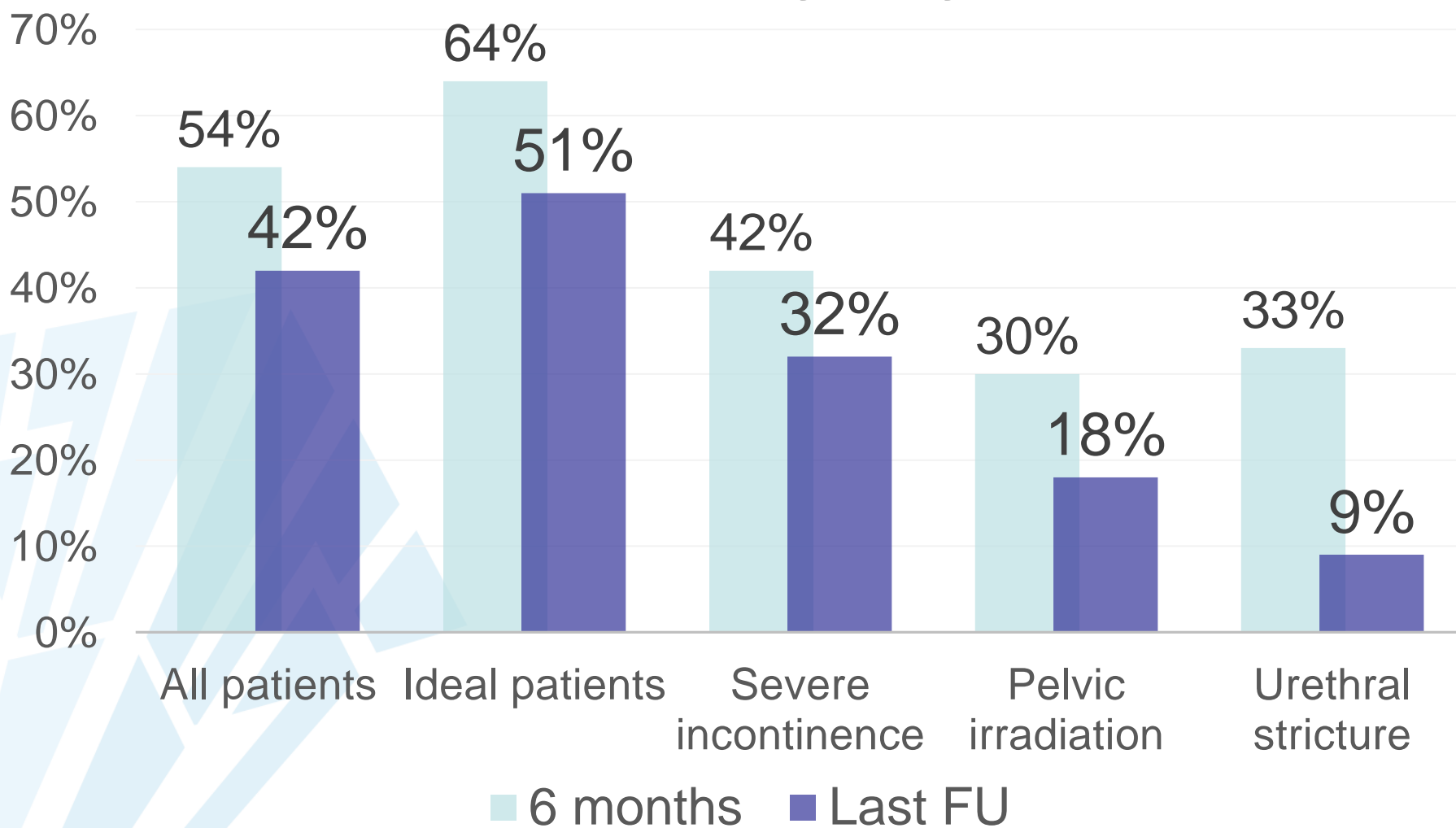
Results:

- Univariate outcomes in the different subgroups of patients
- Multivariate analysis model to evaluate risk factors for “sling failure”
- The results are reported at short term (6 months) and at last follow up (12 months)

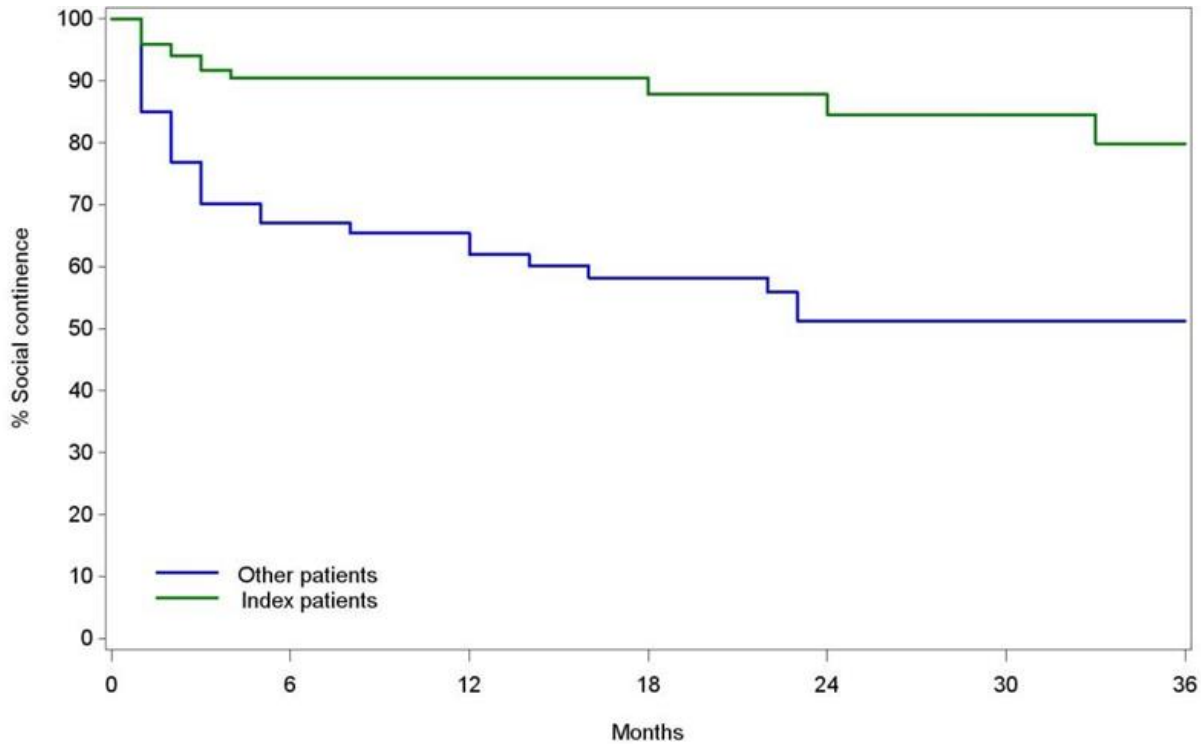
Social Continence



Totally Dry



Social continence rate



Number at risk

Other patients
Index patients

87
118

84
115

53
56

47
44

41
37

33
35

30
27

Multivariate analysis

- Total dry rate:
 - Pelvic Irradiation (HR 1,7)
 - Positive Leak Test (HR 1,8)
 - Reduced Bladder capacity (*per 100 ml*) (HR 0,9)
- Social continence:
 - Pelvic Irradiation (HR 3,4)
 - Previous urethral Stricture (HR 2,4)
 - Detrusor Overactivity (UDS) (HR 2,6)

“Loss of effect”

When a patient loses the social continence status, achieved @FU 1

- In the index group 12/101 (12%)
- RT group 7/22 (32%)
- Advance XP significantly less LoE versus Advance in total group (Chi square $p = 0,001$)

What if...

- *Man, 71 years old, underwent RARP in 2010, pT3aN0*
- *He underwent sling implant yesterday*
- *TU catheter was removed this morning*
- *Voids small volumes, PVR 350 ml*



RISK FACTOR

High – PVR:

- High-PVR = ≥ 200 ml or symptomatic
- 46/216 (21,3%) events of high- PVR after catheter removal (day 1)
- 44/46 solved spontaneously within first month
- 2 unilateral sling transections due to persistent PVR

High – PVR risk factors



- Age (per 10y increment)
OR 0,7
- Previous urethral stricture treatment
OR 2,6

Male sling surgery

- Moderate amount of urine loss (worse in afternoon)
- Can interrupt urinary stream
- Adequate bladder capacity

+/- 80%
SC

- radiation therapy
- stricture disease
- loses urine at night/loses everything

≤ 50%
SC

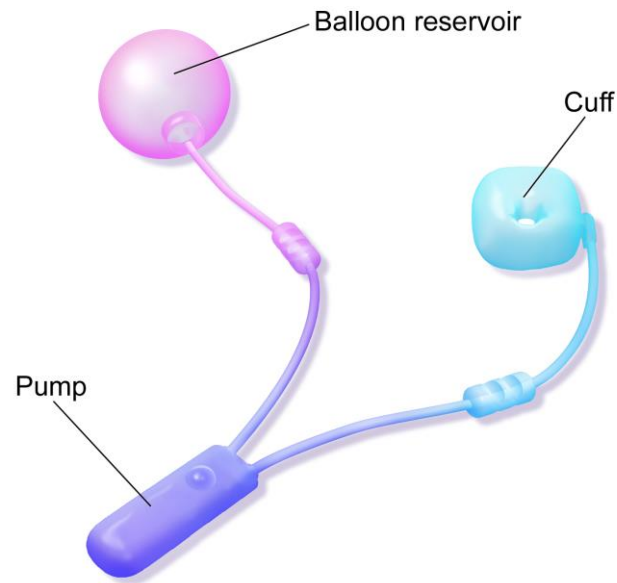
What if...



Man, 71 years old, underwent RARP in 2010, pT3aN0

He underwent early salvage RT in 2011 (positive SM, slow rising PSA)

- *No urgency, voids adequate volumes (400 ml, only morning void)*
- *Has performed 240 sessions pelvic floor excercises*
- *UDS, cystoscopy: normal*
- ***“doctor, I want to be dry”***



Artificial Urinary Sphincter

WHEN WE DONT OFFER A SLING...

TREATMENT OF URINARY INCONTINENCE BY AN IMPLANTABLE PROSTHETIC URINARY SPHINCTER

F. BRANTLEY SCOTT, WILLIAM E. BRADLEY AND GERALD W. TIMM

From the Roy and Lillie Cullen Department of Urologic Research, Division of Urology, Baylor College of Medicine and the Urology Service, St. Luke's Episcopal Hospital, Houston, Texas, and the Departments of Neurology and Electrical Engineering, University of Minnesota Hospitals, Minneapolis, Minnesota

(Reprinted from J Urol, 112: 75-80, 1974)



History

- First used in 1972, first report in 1974
- Deactivation button (1983)
- Narrow backed cuff (1987)
- Kink resistant tubing (colour coded) (1988)
- Quick (and Y) connectors
- Inhibizone coating (2001)

AMS 800 is the best solution...

- ...for moderate to severe stress urinary incontinence
- ...with good candidate selection
- ...by experienced implanters

Moderate to severe incontinence

- Most patients will carry 0 – 1 pad after sphincter implant
- Pooled dry rate 42% (4-86)
- “not dry as a bone”
- Realistic expectations!
 - Accept complication risks
 - Accept dry rate (certainly on the long run)
(Mayo clinic series: 59% SC rate)



Candidate selection

- Dexterity (female>male)
- Mental capacity
- Moderate to severe incontinence
- Lasting at least 6 months

- Adequate bladder capacity
- No detrusor overactivity
- No urethral stricture disease/BNC/...
- Chronic UTI

Candidate selection

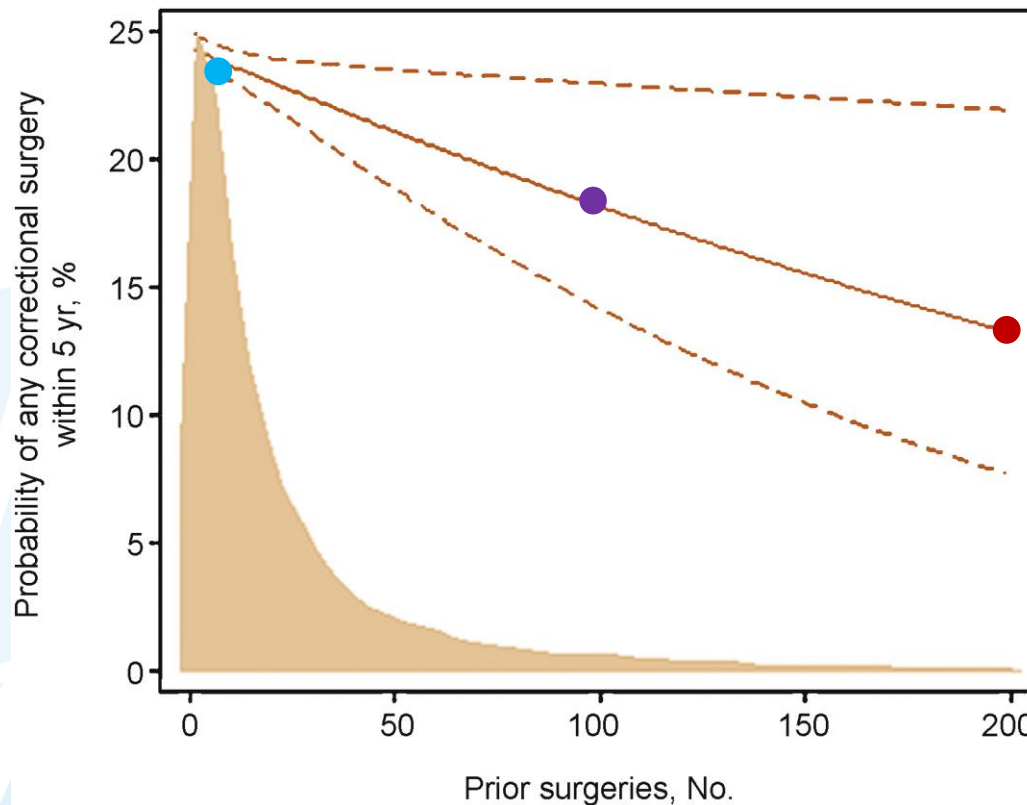
- Dexterity (female>male)
- Mental capacity
- Moderate to severe incontinence
- Lasting at least 6 months

- Adequate bladder capacity
- No detrusor overactivity
- No urethral stricture disease/BNC/...
- Chronic UTI

- Show demo device at outpatient clinic

- Micturition diary
- Cystoscopy
- Urodynamic study
- Urinary culture

Experienced implanters



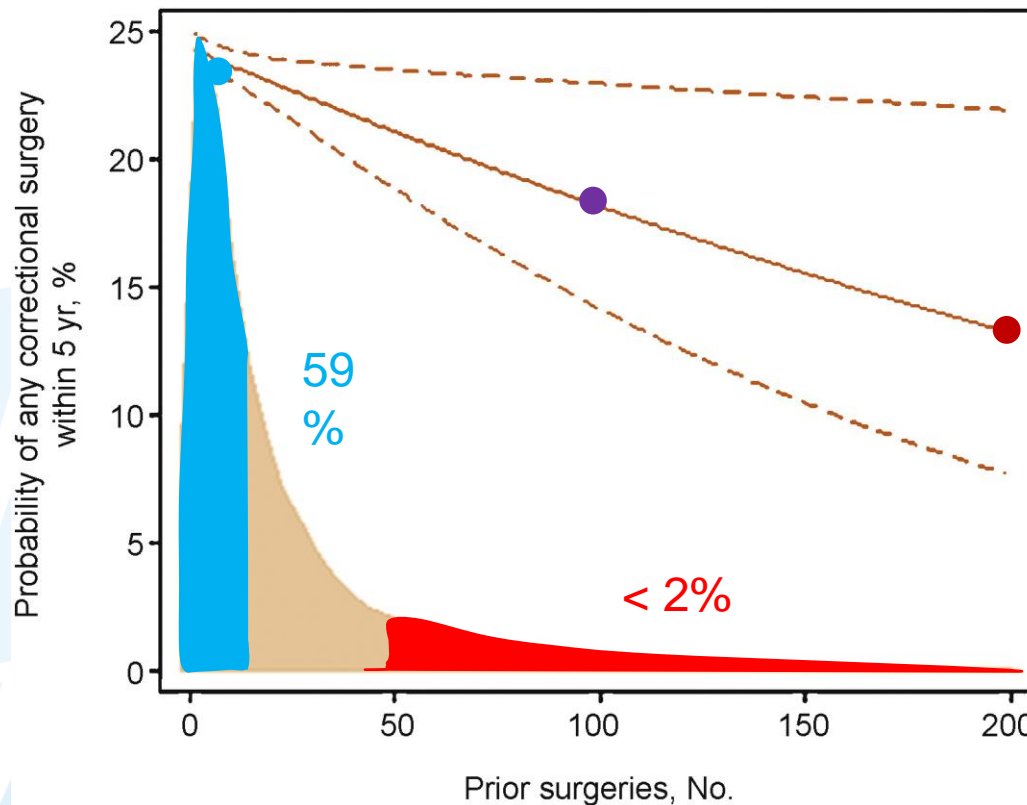
Risk of reoperation in 5 years after implant by surgeon with:

5 prior cases: 24%

100 prior cases: 18%

200 prior cases: 13%

Experienced implanters



Risk of reoperation in 5 years after implant by surgeon with:

5 prior cases: 24%

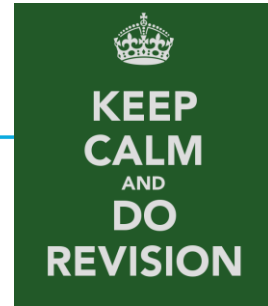
100 prior cases: 18%

200 prior cases: 13%

AMS 800 is the best solution

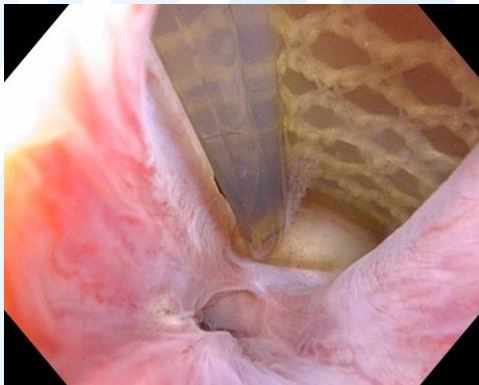


- Best level of evidence (2b)
- Higher success rate (83% versus 75% and 71% in Advance and Argus pooled analysis)
 - In a more severely incontinent population
 - Also in irradiated patients
 - Using stricter criteria (i.e. 0-1 pad vs. 50% improvement)
- Long standing clinical experience
 - > 25 years in its current form
 - Expectations and disadvantages well known



But at what price?

- High reoperation (26%, range 14,8 – 44,8%) rate due to:
 - Erosion/infection in 8,5% (3,3 – 27,8%)
 - Mechanical failure in 6,2% (2,0 – 13,8%)
 - Urethral atrophy in 7,9% (1,9 – 28,6%)



What if...



Man, 71 years old, underwent RARP in 2010, pT3aN0

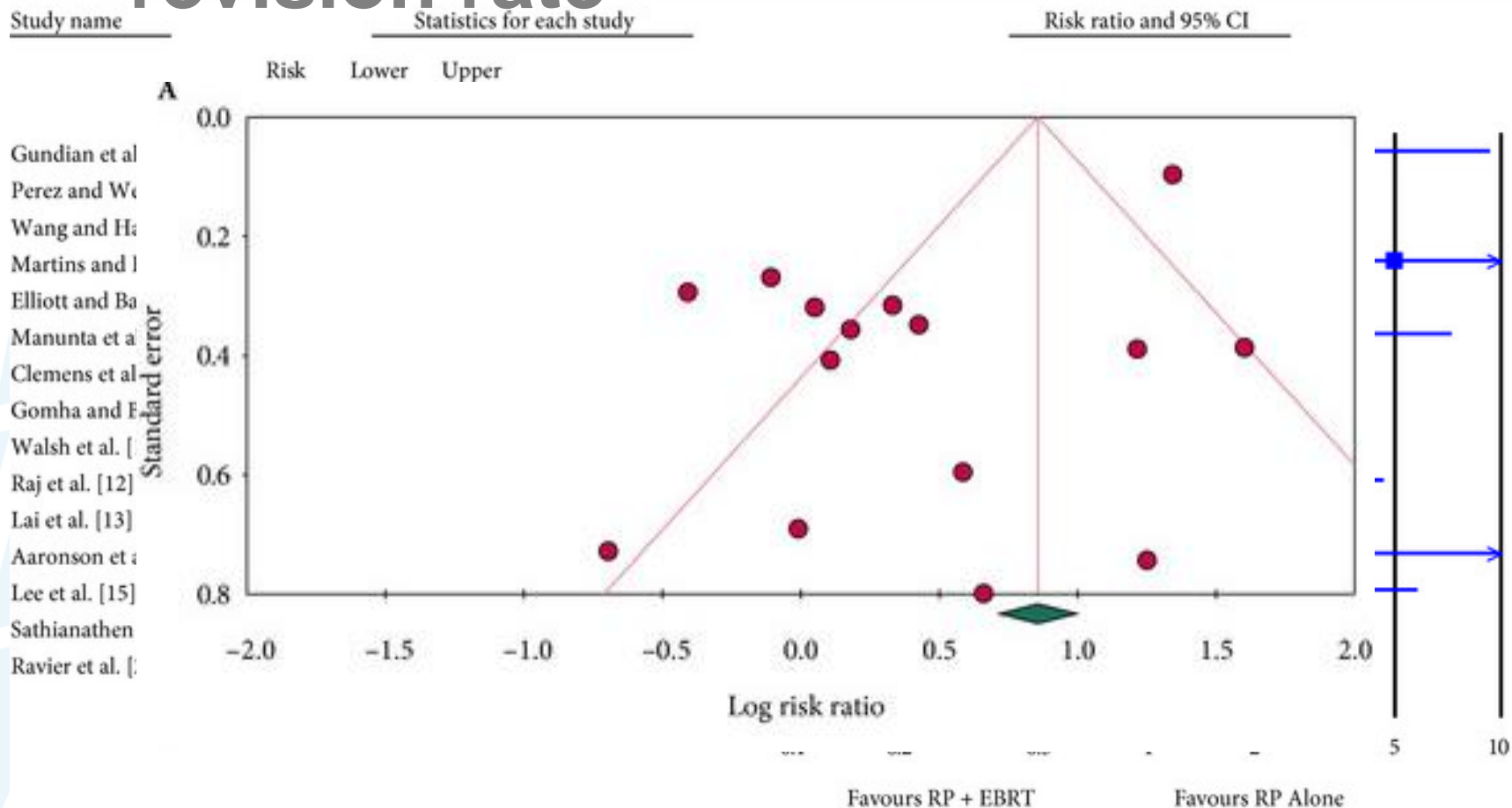
He underwent early salvage RT in 2011 (positive SM, slow rising PSA)

- *“doctor, I want to be dry”*
- *“Does my Hx of RT decrease my chances of being dry? Does it increase my chance of complications?”*

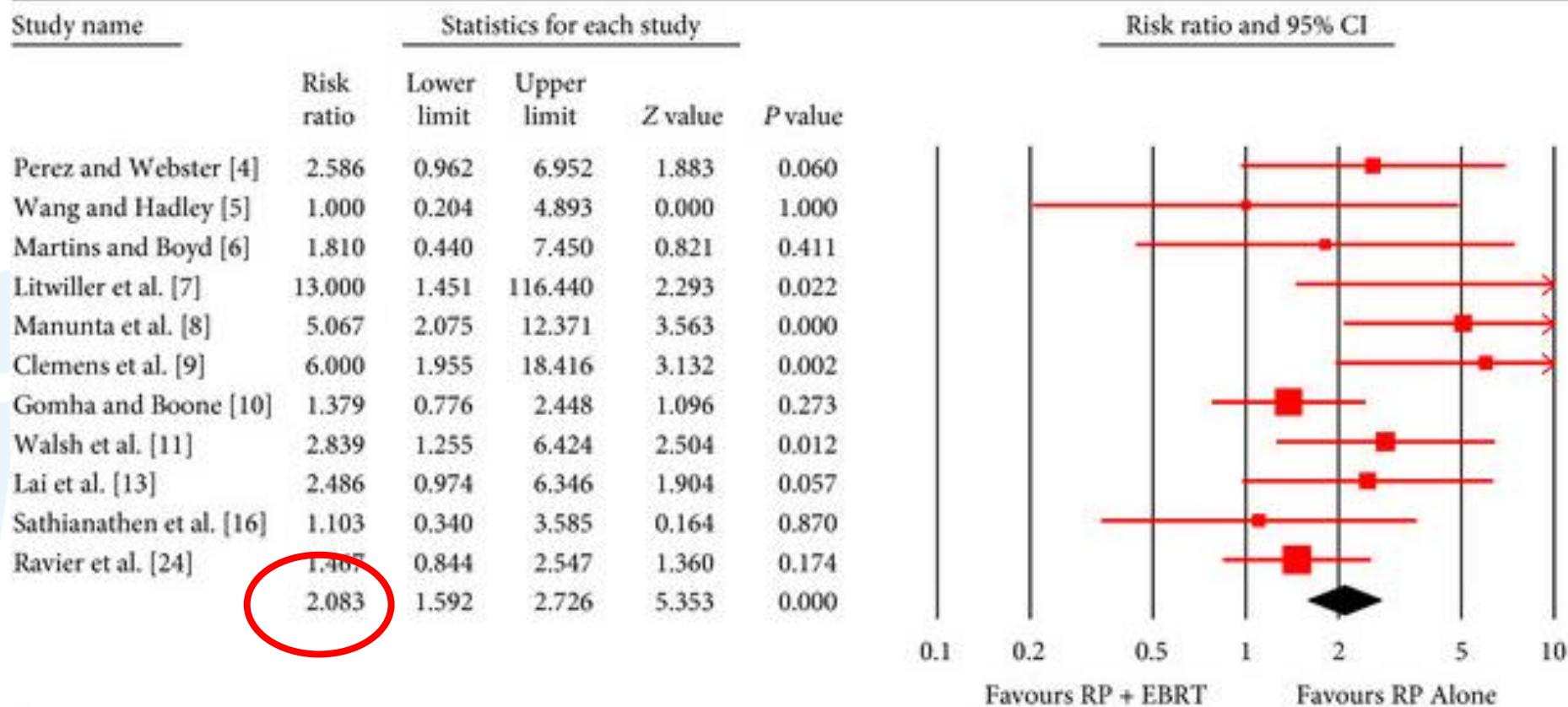
Irradiation and AUS: an ambiguous relationship?

- Low quality evidence: retrospective cohort studies, variable sample size, publication bias,...
- 1 meta analysis;
 - n = 1886 pooled, 579 RP+EBRT and 1307 RP (for revision) in 15 studies
 - n = 949 pooled, 290 RP+EBRT and 659 RP (for UI outcome) in 11 studies

AUS implant after RP+EBRT: revision rate



AUS implant after RP+EBRT: persistent UI



Incontinence after radiation therapy

ISSUES:

- Bladder dysfunction more likely?
- Detrusor overactivity vs compliance
 - UDS “to objectify”
- Concurrent radiation cystitis
- Outlet dysfunction



What if...

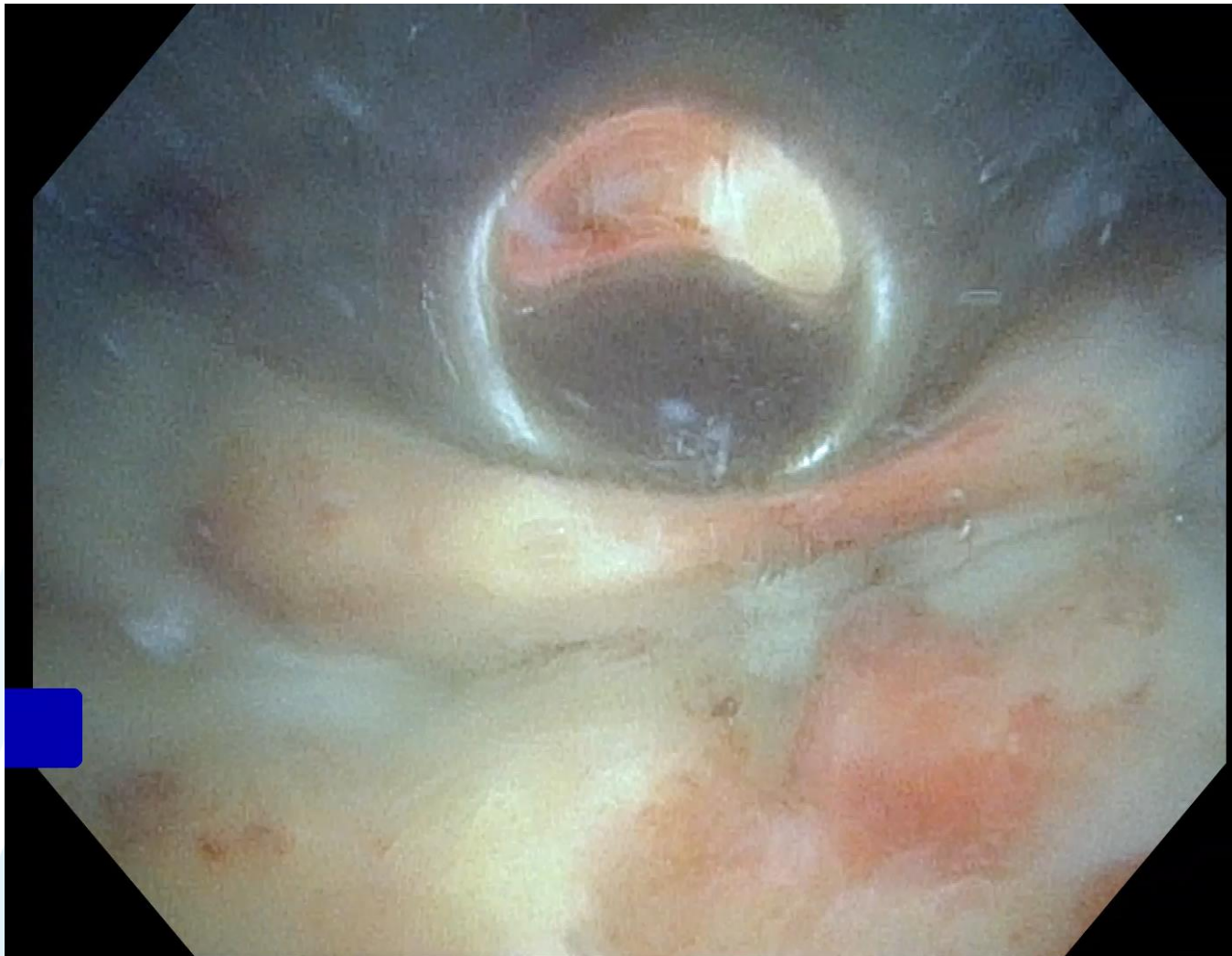


Man, 74 years old, underwent RARP in 2010, pT3aN0

He underwent early salvage RT in 2011 (positive SM, slow rising PSA)

He received an AUS 3 years ago. Last visit was 2 years ago.

“I can still use the device, but I lose urine. It hurts when I am voiding.”

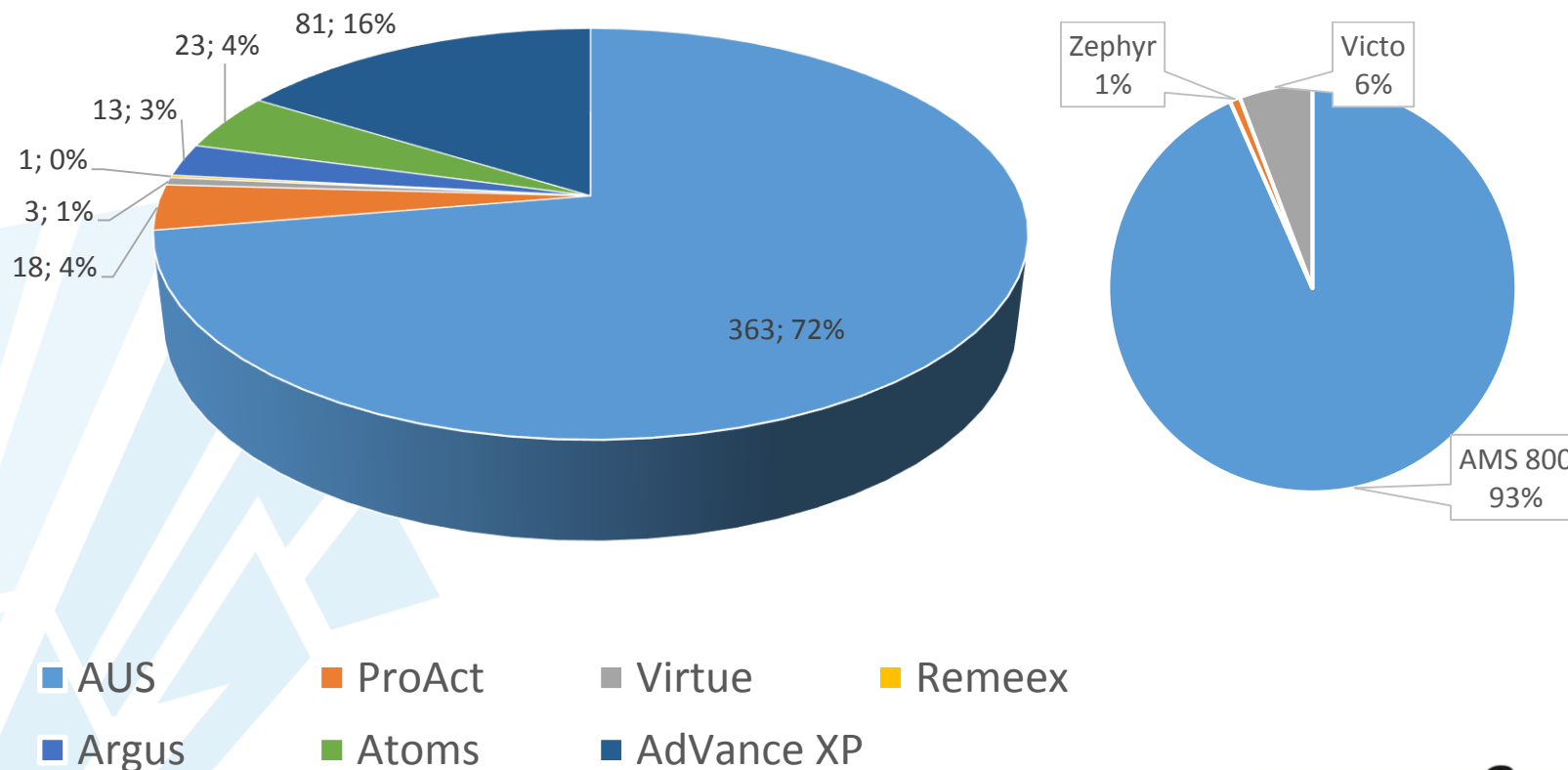


SATURN register

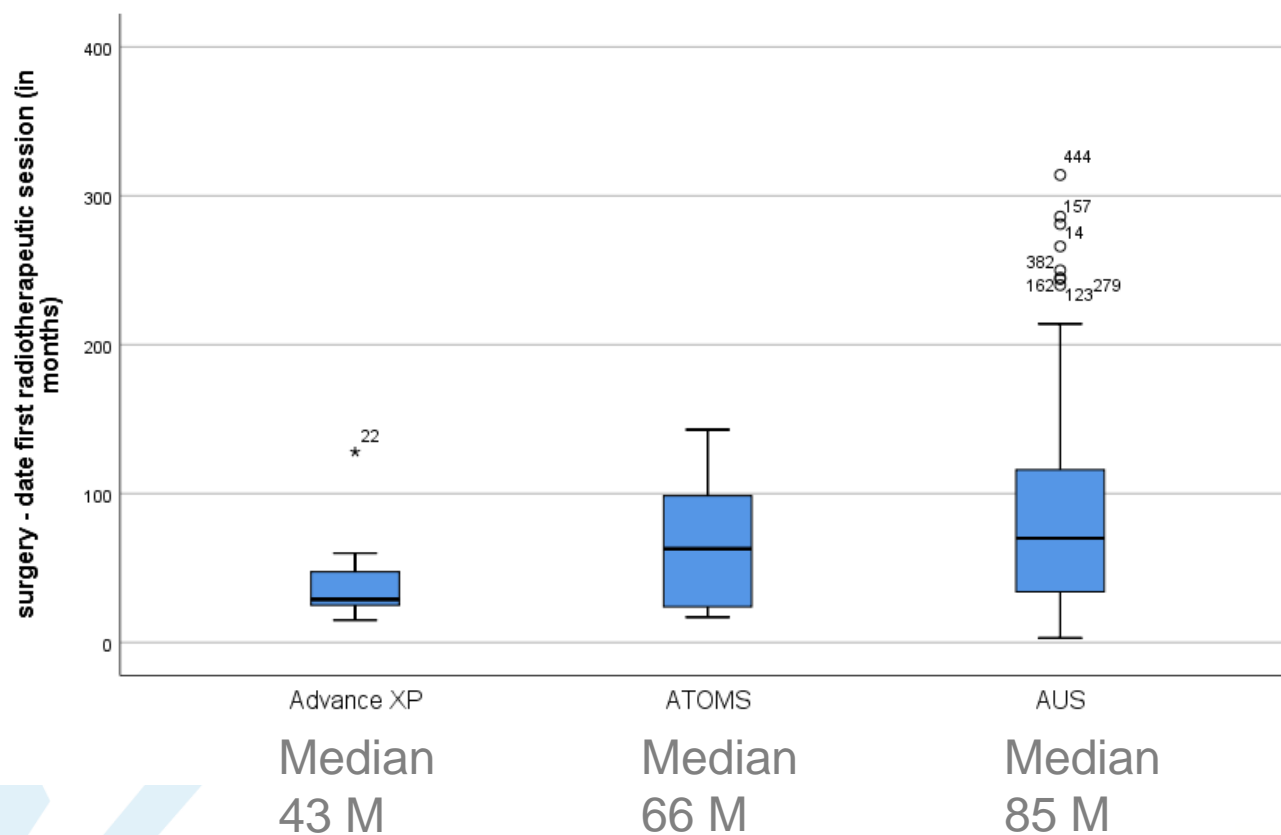


- Prospective multicentre register through EAU RF, 8 countries
- From Jan 2017 - ...
- Current aim 1000 patients, 10 year FU
 - Cure rate (zero pads)
 - Time being continent
 - Time being revision free
 - Complications
 - PROMS (QoL, UI)

SATURN register (n=536)



SATURN register: radiotherapy



SATURN register: results



Conclusions:

- Advance XP should ideally be offered in the index patient
- Patients shared decision proces
- 80% social continence rate, 50% dry rate
- High PVR can occur (self limiting)
- Complication rate is very low

Conclusions:

- AUS (AMS 800®) is historically the gold standard for moderate to severe incontinence
- Untill now it's results have not been matched by other devices (including slings)
- Achilles heel remains reintervention rate
- High volume ∞ less reinterventions

Conclusions:

- Irradiation induces irreversible tissue changes
 - Attention during preop workout
- RT is a strong predictor of sling failure
- RT also increases AUS revision rate and persistent incontinence rates

Thank you!

