

Male Incontinence

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Disclosures

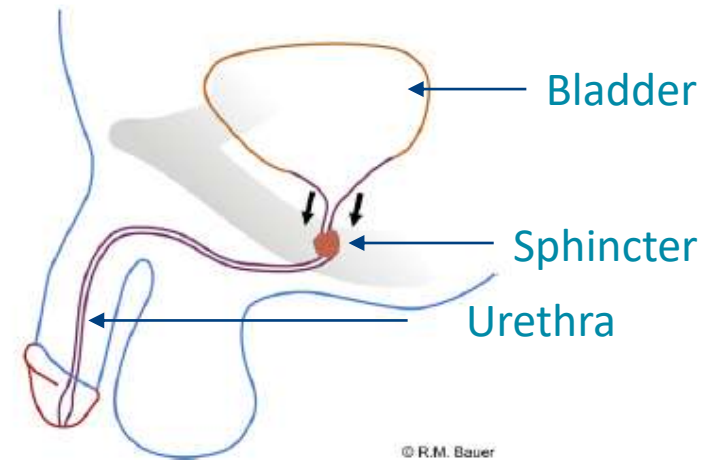
- I have no disclosures or relationships with financial sponsors.

Learning Objectives

1. Review types of urinary incontinence
2. Review key aspects of the AUA/SUFU guidelines on male incontinence
 - <https://www.auanet.org/guidelines/incontinence-after-prostate-treatment>
3. Discuss treatments for male incontinence

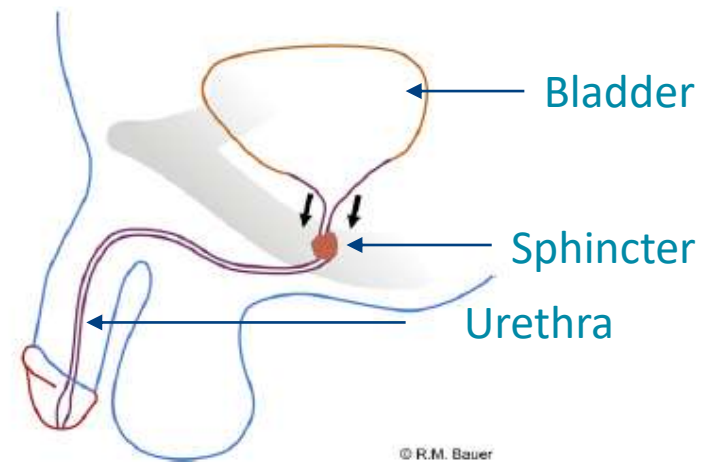
Male Anatomy

- The bladder stores urine
- Urine exits the body via the urethra
- Part of the urethra is surrounded by muscles called sphincter muscles
- The sphincter muscles remain contracted in order to keep urine in the bladder



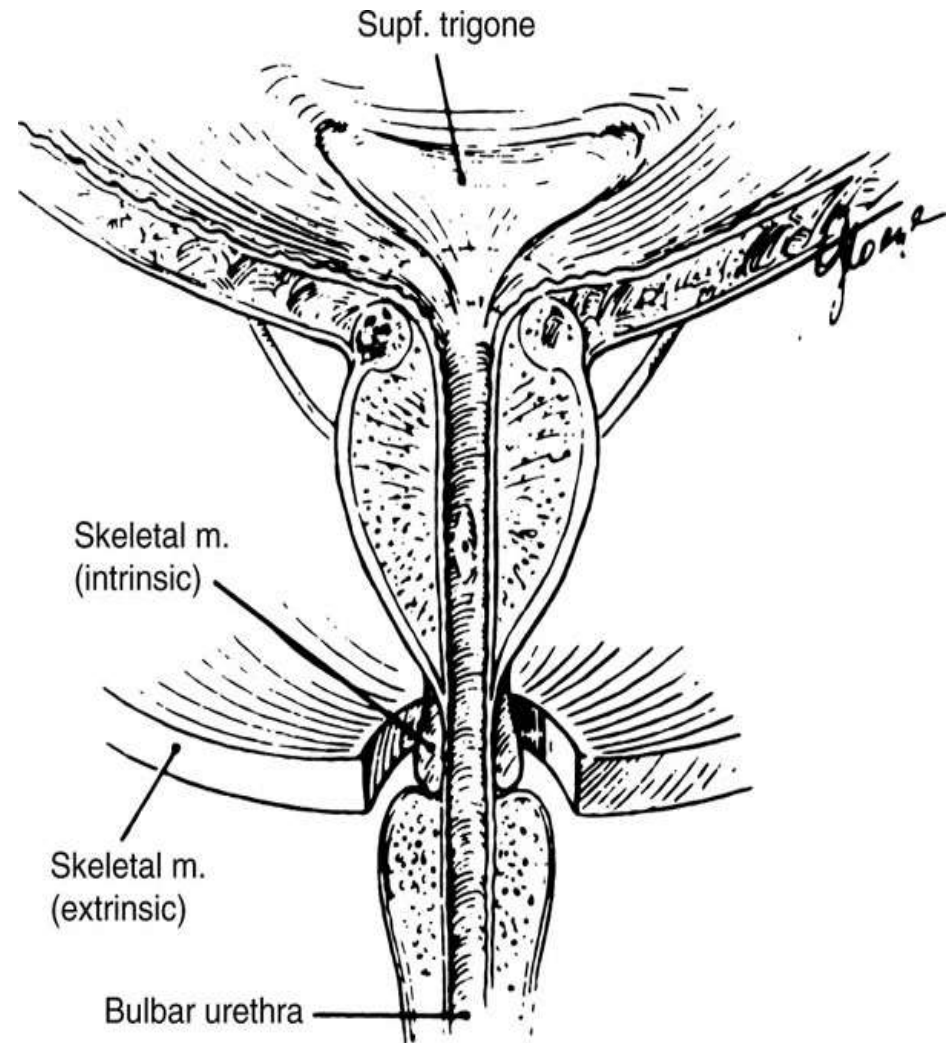
Male Anatomy

- In order for urination to occur, the bladder contracts and the sphincter muscles relax
- When the sphincter muscles relax, urine is able to exit the body via the urethra



Mechanisms of Continence

- Quiescent bladder
- Proximal Sphincter
- Distal sphincter



Types of Incontinence

- Stress
 - Post-prostatectomy incontinence
- Urgency
 - Overactive bladder
- Overflow
 - Obstructed BPH or atonic bladder
- Functional
 - Mobility restricted

Conservative Management of All Incontinence

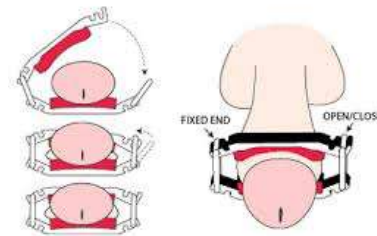
- Decrease coffee, tea, pop, juice, alcohol and spicy foods
- Avoid constipation
- Maintain healthy weight
- Quit smoking

Conservative Management of All Incontinence

- Absorbent pads
- Penile compression devices (clamps)*
- Catheters**



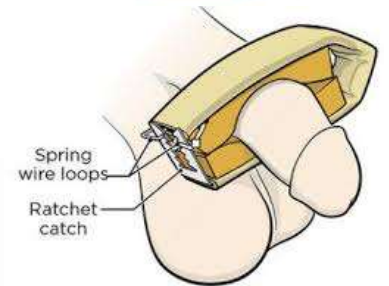
Catheter



Dribble Stop



Pacey Cuff



Cunningham Clamp

Assessment

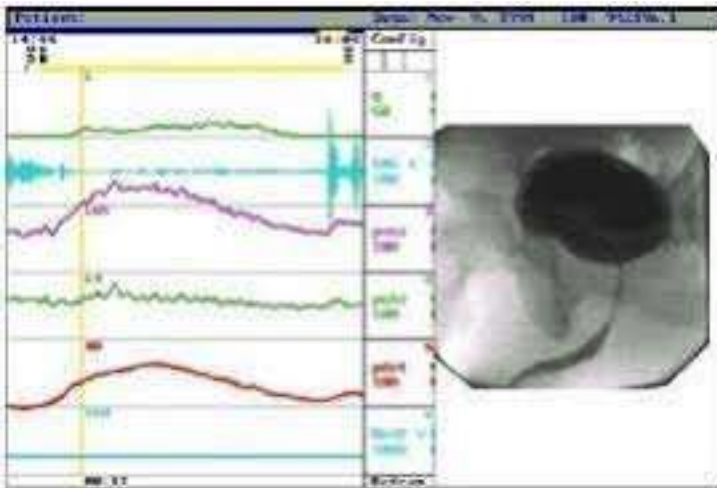
- Key elements
 - Type of incontinence
 - Severity (pad #)
 - Degree of bother

Evaluation tests

- Urinalysis and culture
- Urodynamics (UDS)
- Cystoscopy
- Post void residual (PVR)

Urodynamic Evaluation

- When to do UDS?
 - When it will change clinical management:
 - Unable to demonstrate SUI on physical exam
 - Mixed incontinence
 - Decipher between bladder and outlet pathology



Cystoscopy Evaluation

- When to do cystoscopy?
 - In all patients post-prostatectomy to assess urethral and bladder pathology that may affect outcomes of surgery:
 - Bladder neck contracture (BNC)
 - Urethral stricture
 - In patients with abnormal findings suggestive of stones or bladder cancer

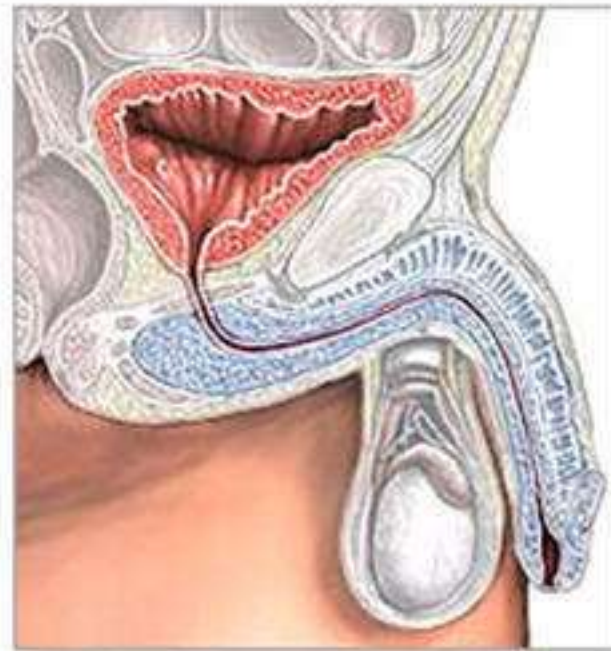


Stress Urinary Incontinence

Before



After



Post prostatectomy Incontinence (PPI)

- 4% of men who undergo radical prostatectomy (radP) will require surgery within the subsequent 3 years.
- Sexual arousal
 - Incontinence and climacturia following prostate surgery incidence 20-93%,
 - 1/3rd report avoiding sexual situations due to fear of leakage.

Conservative Management of PPI

- Pelvic Floor Physiotherapy
 - Prior to RadP patients may be offered pelvic floor muscle exercises.
 - Systematic review demonstrated if performed early can improve continence but no difference from placebo in overall continence at 12 months.
 - Not harmful; potential benefit clearly outweighs any potential risks and likely decrease regret.

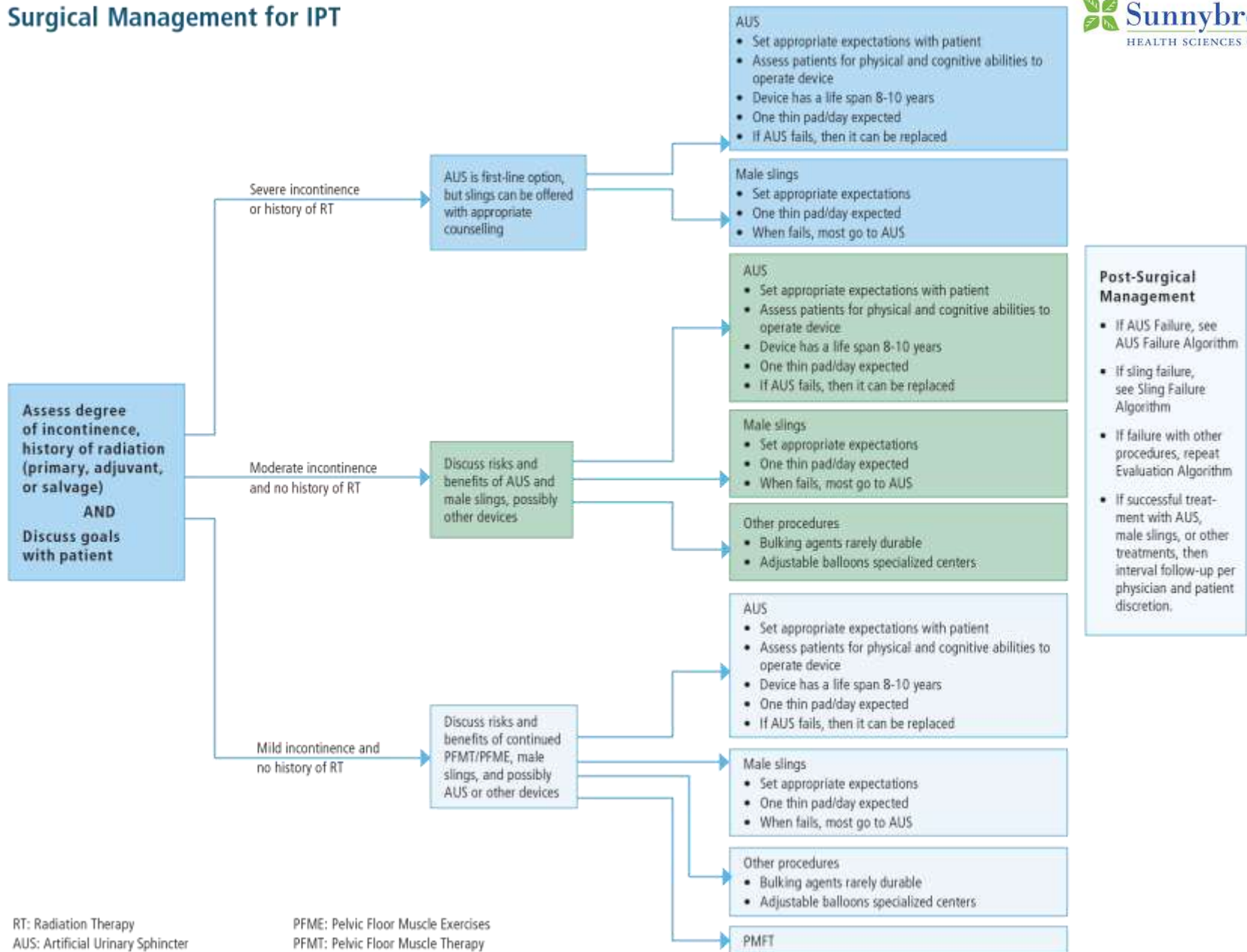
Surgical Treatments

- Bulking agents
- Artificial Urinary Sphincter (AUS)
- Fixed Sling
- Adjustable Sling

Bulking Agents

- No evidence to indicate cure of PPI.
- Weak evidence that bulking agents can offer temporary improvement in QOL after RadP.

Surgical Management for IPT



RT: Radiation Therapy
AUS: Artificial Urinary Sphincter

PFME: Pelvic Floor Muscle Exercises
PFMT: Pelvic Floor Muscle Therapy

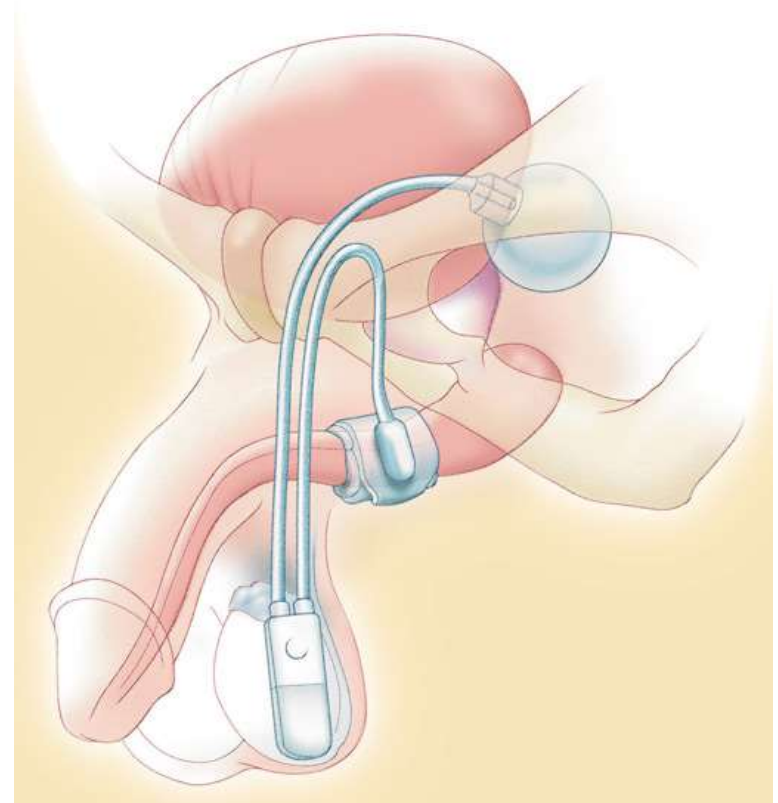
Post-Surgical Management

- If AUS Failure, see AUS Failure Algorithm
- If sling failure, see Sling Failure Algorithm
- If failure with other procedures, repeat Evaluation Algorithm
- If successful treatment with AUS, male slings, or other treatments, then interval follow-up per physician and patient discretion.

Artificial Urinary Sphincter (AUS)

- AMS 800 (Boston Scientific)
- ZSI 375 (Zephyr Surgical Implants)
- Victo (previously FlowSecure, Promedon)

AMS Sphincter 800



AMS Sphincter 800 Results

References	Patients (n)	%Reoperation	%Infection	%Cuff erosion	%Continence
Marks and Light [14]	37	24	5.4	8	94
Fishman et al. [4]	148	17	7	2	90
Malloy et al. [13]	42	19	10	10	76
Light and Reynolds [11]	126	27	7	0	95
Montague [16]	166	19.3	1.2	6	75
Current review	458	23.1	1.7	4.6	88

- Success rate 61-100% (no pad or one pad per day)
- Complications:
 - Reoperation rate 26.0%

AMS Sphincter 800

- Failures

- Mechanical failure 6.2% (8-45%)
- Urethral atrophy and infection or erosion 8.5% (7-17%)

Early

- Cuff size too large
- Insufficient reservoir pressure
- System leak
- Detrusor overactivity
- Overflow
Incontinence/retention
- Inadvertent device
deactivation
- Improper engagement of cuff
tab
- Early cuff erosion

Late

- Device malfunction- fluid leak
- Urethral atrophy
- Urethral erosion

Fixed Sling

- Retropubic or transobturator approach,
- Tension adjusted during surgery,
- Theory:

Retropubic

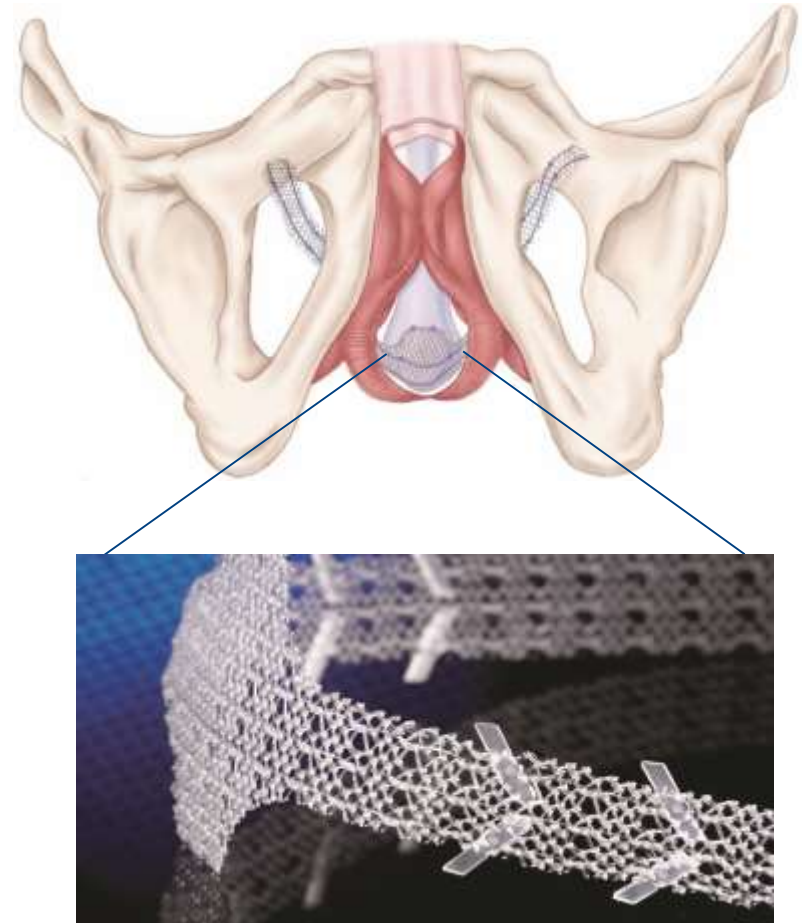
-Urethral compression
InVance, TOMS

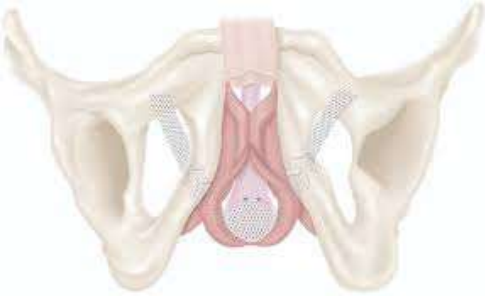
Transobturator

-Repositioning of the
urethral bulb
AdVance (XP), Virtue

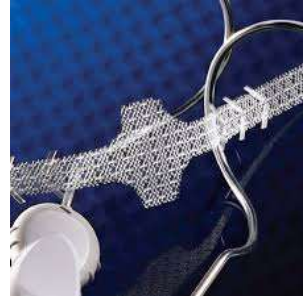
AdVance Sling

- Polypropylene mesh placed at the membranous urethra via a transobturator approach





AdVance Sling



- Success rate 40-65%
 - Worse outcomes in patients with previous radiation, detrusor overactivity and poor bladder emptying.
- Complications:
 - 21.3% urinary retention*
 - Explant rate 0.9%
 - Local wound infection 0.4%
 - UTI 0.4%
 - Perineal pain 0.4%

Adjustable Sling

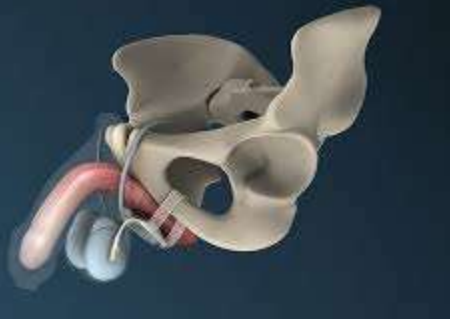
- Gentle pressure primarily on the bulbar urethra,
 - Postoperatively, the sling tension (pressure on the urethra) can be adjusted.
-
- ATOMS - A.M.I.
 - Argus(T) - Promedon
 - ReMeex - Neomedic
- } Not commercialized in Canada

ATOMS Sling



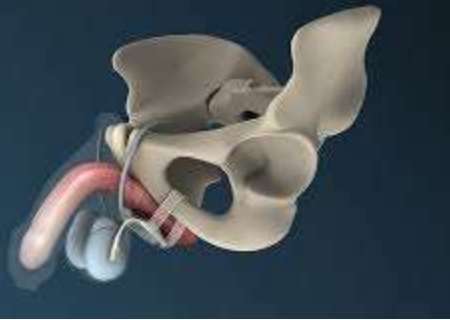
- ATOMS
 - Adjustable
 - TransObturator
 - Male
 - Sling
- Mechanism
 - Compressive Urethral cushion
 - Anchored mesh
 - No mechanical components
 - Scrotal port to inflate cushion
 - Adjustable in office

ATOMS Sling



- 160 patients in 8 centers:
 - Median follow-up 9 months
 - Overall continence rate 80% and improvement in 87.8% of cases
 - 70.1% of patients underwent 2.4 +/- 2.7 adjustments
 - 22.3% experienced 90-day complications
- Radiated patients 3 x less likely to achieve continence than non-radiated patients.

ATOMS Sling



- Systematic review:
 - 1393 patients (all generations of ATOMS)
 - Mean 67% dryness rate; 90% improvement after adjustment
 - Mean total number of fillings per patient 2.4
 - Mean follow-up was 20.9 months
 - Complications 16.4%
 - Explantation 5.75%*

Summary of Surgical Options for PPI

Surgery	Advantages	Disadvantages
AUS	<ul style="list-style-type: none">-Highest efficacy-Useful in severe incontinence-Used in the radiated patient	<ul style="list-style-type: none">-Patient requires hand dexterity and cognition to operate device,-Patient must be able to sense need to void-More invasive surgery than slings-Caution in those with stones and bladder cancer
Fixed Sling	<ul style="list-style-type: none">-Lower revision rate than AUS (no mechanical components)-Less invasive surgery than AUS	<ul style="list-style-type: none">-Contraindicated in radiated patients, severe urinary incontinence and those with poor bladder function
Adjustable Sling	<ul style="list-style-type: none">-Adjustable-Used in the radiated patient	<ul style="list-style-type: none">-Long-term outcome data pending

Types of Incontinence

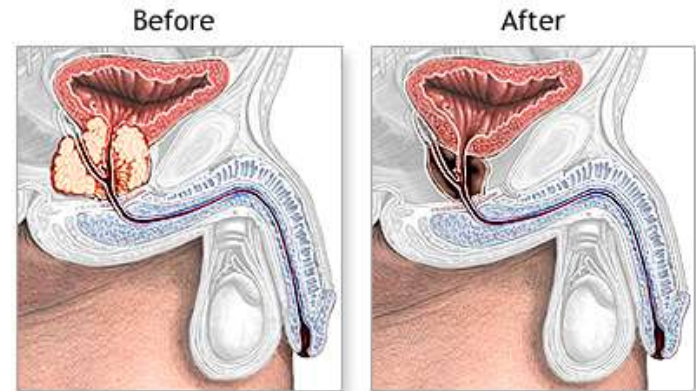
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- Functional
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Urgency Incontinence

- Refer to Dr. Herschorn's talk

Aside - Radiation therapy for Prostate Cancer

- Complications:
 - Radiation cystitis
 - Fistulae
 - Stricture
 - Secondary malignancy
- Manifestations:
 - Total incontinence,
 - Retention,
 - Overactive bladder!



Overflow Incontinence

- Why is the bladder overfull?
 - Outlet or bladder issue
- Why does it matter?
 - Outlet →
 - BPH - trial of alpha-blocker +/- 5alpha reductase inhibitor or TURP
 - Stricture or bladder neck contracture - surgery
 - Bladder → Intermittent catheterization, SP catheter or urethral catheter



Mixed Incontinence

- History, physical, evaluations are key to determine degree of bother for each type of incontinence
- Urodynamics are helpful
- If SUI and UUI post prostatectomy then often trial of medication for UUI first

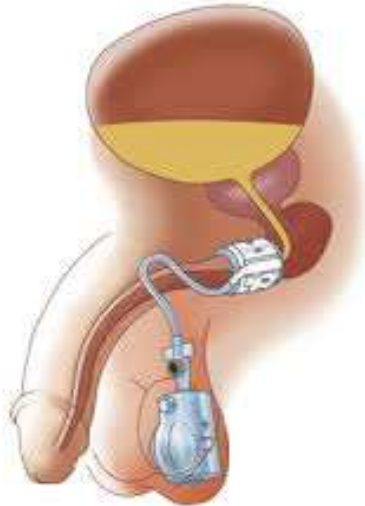
Conclusions

- History, physical, assessment and evaluation tests are essential to differentiate different types of incontinence
- SUI → PFPT → Surgery
- UUI → Medications
- Overflow → bladder or outlet issue

Acknowledgements

- Sender Herschorn
- Nathan Hoag

AUS – ZSI 375 (Zephyr Surgical Implants)



- Retrospective, non-randomized study across Europe:
 - 109 patients
 - For severe incontinence
 - No radiated patients
 - Pad usage decreased to 0.84 from 4
 - Success in 92.66%
 - No infection, cuff erosion 8.25%, mechanical failure 2.75%



AUS – Victo (previously FlowSecure)



- Retrospective:
 - 60 patients; most had previous anti-incontinence surgeries
 - Mean follow-up 14.1 months
 - Success rate 58.8%
 - No revisions; 5 cases had optimizing surgeries

Fixed Transobturator Sling – Virtue Male Sling (Coloplast)



Retrospective studies:

- 35 patients
 - Mean follow-up 11 months
 - Success rate 83%
 - Minimal complications
-
- 32 patients
 - Mean follow-up 55 months
 - 22% underwent sling explantation due to chronic pain or continence failure

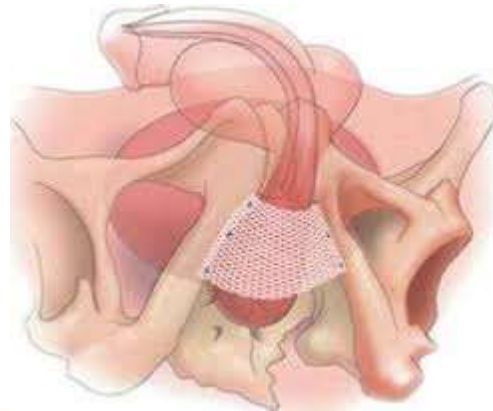
Adjustable Sling - ARGUS Sling

- Adjustable only in the OR,
- Argus (n=95), ArgusT (n=32), AMS 800 (n=155)
 - Increased intraoperative complication rate with Argus compared to AMS 800 (i.e. bladder perforation)
 - Decreased explantation rates (9.7% vs. 21.5%) with Argus compared to AMS 800

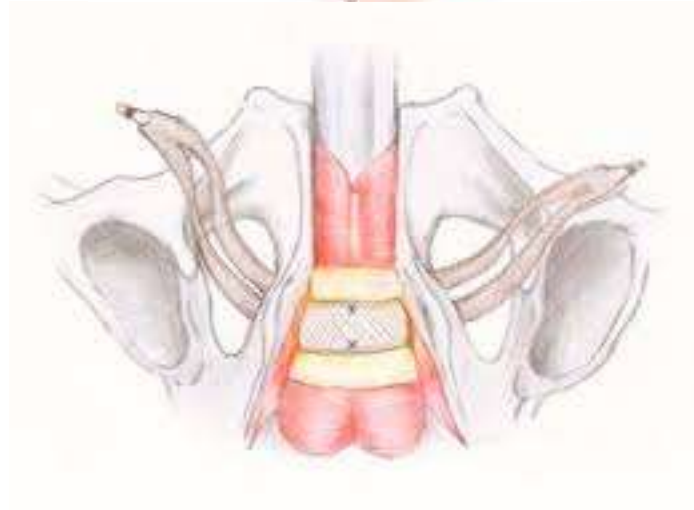


Fixed Retropubic Slings – InVance and TOMS

- InVance

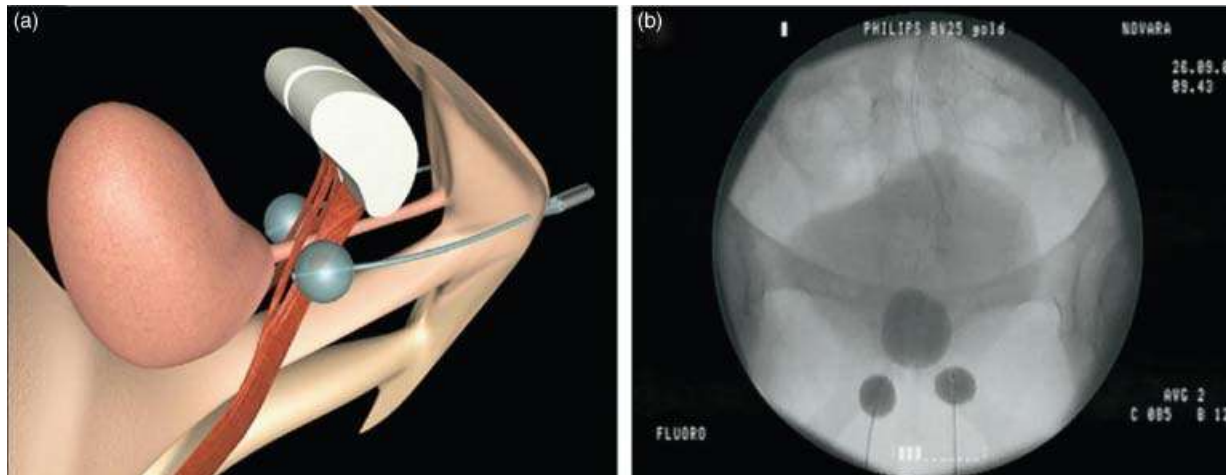


- TOMS



Adjustable Device - ProACT

- Balloons placed periurethrally near the bladder neck,
- Inferior dryness and improvement rates than ATOMS sling,
- Explant and complication rates higher than ATOMS sling.



Future – Electronic AUS

- Implanted
- Implant, Fob and Smartphone App

