Management of Post-Prostatectomy Urinary Incontinence and Sexual Dysfunction

Robert C. Eyre, MD, FACS
Associate Clinical Professor of Surgery (Urology)
Harvard Medical School
Post-prostatectomy Incontinence

• Incidence?

• Affected by several factors:
  – Preoperative bladder function and compliance
  – BMI
  – Loss of functional urethral length
  – Radiation (affect on bladder and urethra)
  – Age (and aging)
  – Post-treatment urethral stricture
Post-Radiation Therapy Incontinence

- Loss of bladder compliance with severe urgency
- Inflammation from radiation cystitis
- Loss of urethral compliance
- Radiation stricture
Prostate Anatomy
Options for Treating Incontinence

- Behavioral modification
- Kegel exercises
- Absorbent products
- External penile clamp
- Urethral bulking agent (?)
- Male urethral sling
- Artificial urinary sphincter
Behavioral Modification

• Limit fluid intake
• Avoid bladder irritants – caffeine, alcohol, carbonation
• Pelvic floor exercises
Absorbent Products

- Skin irritation
- Discomfort
- Shifting movement
- Odor
- Not discreet
- Expensive
Clamps, Catheters, Bulking Agents

• External clamp
  – Urethral compression, may irritate skin

• External catheter
  – May cause skin breakdown, risk of UTI

• Urethral bulking agent
  – Availability of permanent materials now
  – May require several treatments
  – Poor results secondary to scarring or radiation
Male Urethral Sling

• For mild to moderate SUI (1-5 pads per day)
  – No mechanical pieces or manipulation required
  – XRT is relative contraindication
  – Doesn’t preclude later AUS
  – Complications include erosion or infection
Male Urethral Sling

- For mild to moderate SUI (1-5 pads per day)
- No mechanical components
- Repositions urethra and provides passive compression
- Must rule out urethral stricture first
- Success rate 55-90% in 6 studies > 35 patients
Male Urethral Sling
Male Urethral Sling
Artificial Urinary Sphincter

- Highest rate of cure for SUI – 95%
- Requires manipulation of pump, thus patients must have adequate dexterity and cognitive ability.
- Higher complication rate after XRT
- Must inform other health care providers about risk of catheterization without cuff deactivation
Artificial Urinary Sphincter

• Complications:
  – Half-life of mechanical device
  – Infection
  – Erosion (catheterization)
  – Atrophy of urethra under cuff
Artificial Urinary Sphincter
Post-Treatment Sexual Dysfunction

• 70% of patients will likely experience ED following surgery or XRT
  – Time line may vary
  – Depends on baseline pre-treatment sexual function
  – There may be some protective effect with pre-treatment PDE-5 inhibitors
  – Loss of penile length
  – Development of penile fibrosis
• With radical prostatectomy, there is a correlation between post-op sexual function and continence, suggesting that meticulous surgery and attempts to nerve-spare may preserve more innervation to the urethra and sphincter.
Options for Treating ED

- Oral PDE – 5 Inhibitors
- Vacuum Erection Device
- Intra-urethral Suppositories
- Penile Self-Injection
- Prosthetic Surgery
PDE – 5 Inhibitors

• Viagra, Levitra, Cialis
  – All work by same enzyme pathway
  – Difference is duration of response
  – Requires nerves to be working to generate a response
  – Side effect are facial flushing, headache, stuffy nose, upset stomach
  – expensive
Vacuum Erection Device

- Lack of spontaneity
- Helps to maintain penile length
- Does not develop true penile rigidity
- May be helpful as adjunct with other methods
- May be uncomfortable
- Limit is 30 minutes of compression
Intra-urethral Suppository

- Does not require nerves to be working
- Direct effect to cause vasodilation
- Prostaglandin can produce aching discomfort in penile shaft and genitalia
- Risk of hypotension, dizziness
- Oral contact unsafe
- Expensive
Intra-cavernosal Self- Injection

• Safe when patient is properly evaluated and instructed in use
• Does not require nerves to be functioning
• Poor response may indicate significant penile vascular disease with correlate for CAD
• 80+ % of men respond
• May produce corporal fibrosis with prolonged use or high doses
Intra-Cavernosal Injection

- Least expensive treatment option
- Allows early sexual rehabilitation
- Compounding pharmacy issues with bi-mix and tri-mix
Penile Prosthesis

- Excellent choice for motivated patient
- Improved spontaneity
- Inflatable devices give best flaccidity and rigidity
- Usually covered by insurance
- Rare instance of infection or mechanical failure
- Best results with experienced implanters
- 93% patient, 90% partner satisfaction
Inflatable Penile Prosthesis
Future Directions

• External penile support device
  2 Japanese studies but no published data
  not FDA-approved
  sleeve with 2 openings at corona which provide sensitivity with SI
Erektor – penile ring
Future Directions

• Vibratory stimulator
  – Introduced in 1965
  – Approved by FDA in July 2011
  – May be helpful for postoperative rehab
  – Stimulates pudendal nerve in penile shaft to release nitric oxide

• Low intensity ESWL
  – Study of 60 patients, 12 sessions
  – Currently not approved by FDA
Future Directions

• Increases blood flow and vascularity in the penis
  – Stimulates mesenchymal stem cells
• Nanotechnology
  – Ability to deliver small particles and drugs into tissue – NO, tadalafil
  – Potential to revolutionize local therapies
Future Directions

• Endourological techniques
  – Drug-eluting stents – internal pudendal artery
  – For short arterial blockages (50% response)
  – Embolization of dorsal vein of penis

• Medicated penile prosthesis
  – Medication placed in refillable scrotal pump
  – Cannula inserted into corpora cavernosa
  – Implanted in 30 men so far in a study
  – High mechanical failure rate and infection