Pelvic Organ Functions: Urinary, Sexual and Bowel Dysfunction after Rectal Surgery

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Proctectomy
- Loss of rectal reservoir
- Injury to pelvic autonomic nerves
- Displacement of associated structures
- Sexual and urinary dysfunction have actually DECREASED since TME introduced
- Bowel function has worsened as we push the limits of distal margins

Role of Nerves
- Sexual function: Male
  - Sympathetic nerves: ejaculation
  - Parasympathetic fibers: erectile function
  - Sexual function: Female
  - Less clear
  - Both sympathetic and parasympathetic nerves are likely involved

Sexual dysfunction 10-35%
Urinary dysfunction <5%

Disclosure
No Disclosures
### Urinary Function

- Acute urinary retention most common problem
- Occurs in 24% of men and 15% of women after any abdominal surgery
- Have to weigh benefit of prolonged catheter drainage with increased risk of UTI
- 40% of patients who have catheter removed at 72 hrs will require reinsertion
- Older, male patients, hx BPH
- No difference for LAR or APR

Bleier, Maykel Surg Clin NA 2012

### Long term Urinary Function

- Rectal cancer surgery 4% need catheter at discharge
- Risk factors include male gender, age, duration of operation, high doses of opiates, and preexisting urinary disorders.
- For rectal cancer, tumors <5cm from anal verge and radiation also a factor
- Over six month period, prolonged issues with retention found to be about 3%
- Proctectomy for benign disease has much lower rates of dysfunction.

Eveno et al J Vis Surg 2010

### Urinary Dysfunction

- Minor complaints
  - Difficulty initiating voiding
  - Sensation of incomplete voiding
  - Pain discomfort during micturation
  - Urinary frequency
  - Nocturia
- Urinary incontinence 39% with or without radiation for rectal cancer surgery at 5 years
- Much less for non cancer surgery

Peeters et al J Clin Oncol 2005

### Sexual Function Prevalence/ Assessment

#### Men

- Dysfunction well described
  - Erectile dysfunction
  - Ejaculatory dysfunction
- Under 40 dysfxn<10%
- 10-30% for 40-59
- 20-40% for 60-69
- 50-75% >75 yrs
- Validated measure IIEF

Laumann JAMA 1999

#### Women

- Difficult to assess
  - Dyspareunia(shortened, dry vagina)
  - Concern about fecal soiling
  - Desire/libido may not be helpful
- Over age 60 dysfxn 43%
- Over 50% refused to participate in rectal cancer study of sexual function
- Validated measure FSFI

Platell et al Br J Surg 2004
### Sexual Dysfunction Risk Factors

<table>
<thead>
<tr>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preexisting dysfunction</td>
<td>Poor preoperative body image and self esteem</td>
</tr>
<tr>
<td>Radiation</td>
<td>Post menopausal state</td>
</tr>
<tr>
<td>Stoma</td>
<td>Poor physical and psychic health</td>
</tr>
<tr>
<td>Low rectal tumor</td>
<td>Pelvic radiation (vaginal dryness, pain)</td>
</tr>
<tr>
<td>Surgical technique (TME) ** key factor</td>
<td>Stoma</td>
</tr>
<tr>
<td>25-75% now 10-30%</td>
<td></td>
</tr>
</tbody>
</table>

*Eveno et al J Vis Surg 2010*

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### Long-Term Sexual Function

- Impairment of sexual function in rectal cancer patients
  - 20% of women
  - 45% of men
- Predictive risk factors for long term sexual dysfunction
  - Female gender
  - Radiation
  - APR

*Hendren et al Ann Surg 2005*

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### Sexual Function Questionnaire

*Wang et al DCR 2011*
Bowel Function

- **LARS**
  - 60-90% of patients have this after surgery
    - Frequency
    - Urgency
    - Fragmentation (incomplete evacuation, clustering)
    - Fecal incontinence

- **Etiology**
  - Loss of rectal reservoir
  - Lack of compliance of colon and impaired capacity
  - Internal sphincter damage
  - Autonomic nerve injury
  - Colonic motility with mobilization of descending colon
  - Pelvic floor dysfunction

Bowel Function 1 year results

<table>
<thead>
<tr>
<th>Surgery without radiation</th>
<th>Radiation alone (GU cancer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-4 BM/day</td>
<td>After radiation</td>
</tr>
<tr>
<td>90% urgency</td>
<td>2 BM/day</td>
</tr>
<tr>
<td>84% clustering</td>
<td>50% urgency</td>
</tr>
<tr>
<td>46% fecal incontinence</td>
<td>40% clustering</td>
</tr>
<tr>
<td>46% fecal incontinence</td>
<td>20% fecal incontinence</td>
</tr>
</tbody>
</table>

Hadock M et al J Clin Oncol 2007

Incontinence with TME

<table>
<thead>
<tr>
<th></th>
<th>No Radiation</th>
<th>Radiation</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>10</td>
<td>24</td>
</tr>
<tr>
<td>Daily BM</td>
<td>2-3</td>
<td>3-4</td>
</tr>
<tr>
<td>Gas</td>
<td>70%</td>
<td>83%</td>
</tr>
<tr>
<td>Mucus</td>
<td>20%</td>
<td>46%</td>
</tr>
<tr>
<td>Liquid stool</td>
<td>30%</td>
<td>50%</td>
</tr>
<tr>
<td>Solid stool</td>
<td>30%</td>
<td>42%</td>
</tr>
</tbody>
</table>


Distal Resection

Additive effect of losing rectal reservoir and altering the anal canal sensation and function
Straight CAA (Parks)

Colonic J-pouch

Improve Function
- Increase reservoir capacity
- Disperse peristaltic waves

Bowel function ISR
- Radiation, TME, Intersphincteric resection with handsewn coloanal anastomosis
- All had colon J pouch
- Fecal continence: 41%
- Mild FI: 35%
- Severe FI: 24%
- 2 patients completely incontinent and refused a colostomy

Fecal continence: 41%
Mild FI: 35%
Severe FI: 24%

Bowel Function LAR vs. ISR

77 patients Japan 200-2007
ISR pts had colon J pouch or coloplasty
84% vs 33% had to wear a pad

Koyama et al Ann Surg Onc 2014

Is the J-pouch superior?

- Compiled 35 studies over 20 yrs comparing straight CAA to reservoirs (J-pouch and coloplasty)
- 2240 pts (1055 straight CAA, 1050 J-pouch, 124 coloplasty)
- Endpoints: post-op complications, functional/physiological outcomes
- Timepoints: 6 mo, 1 yr, >2 yr

Br J Surg 2006; 93: 19-32

Functional results
- Kirwan classification for grading fecal incontinence:
  - 32% at 6 mo, 14% at 1 yr
- Frequency: 36% at 6 mo, 21% at 1 yr
- No differences between straight(19) and J-pouch (25) anastomoses

Hand-Sewn Colonal Anastomosis for Distal Rectal Cancer: Long-Term Clinical Outcomes

*Functional Outcomes:*
- Slight advantage to colonic J pouch over straight CAA that diminished with time
- No advantage of coloplasty over J pouch
Bowel Function in Sphincter Sparing Surgery

143 patients
30-70 years of age in Ireland
Examine symptoms and self care strategies

Self Care Strategies

Effectiveness of self care strategies

Myth of Informed Consent for rectal surgery

- What do patients retain?
- 30 patients 2009-2010
- 47% did not recall preop discussion of risks bowel dysfunction
- 57% did not recall preop discussion of risks of urinary dysfunction
- 47% did not recall preop discussion of risks of sexual dysfunction

Scheer et al DCR 2012

Landers et al J Clin Nurs
Pelvic Organ Function

- Preop counseling is KEY
- Managing patient expectations
- Stoma counseling and marking
- Written information
- Connection to former patients
- Continued follow up