Distal TME/APR Technique and Tips
US Perspective


Julio Garcia-Aguilar
Professor of Surgery
Chair, Department of Surgery
City of Hope, Duarte, California

Very Low Rectal Cancer

- Definition
  - located in the distal tail of the mesorectum
  - close to the levator muscle
- Pre-treatment Evaluation
  - detailed preoperative staging: DRE, ERUS, MRI
  - define the relationship with levator muscle and urogenital organs
- Neoadjuvant therapy
  - Particularly important to reduce the size (and stage) of the tumor
- Evaluation after neoadjuvant therapy
  - Assess relationship of the tumor to the levator muscle and sphincter complex

Low rectal cancer: Facts

- The risk of a positive circumferential margin is higher in lower tumors
- At the level of the anorectal ring, the rectal wall in in contact with the levators
- The rectum is very close to the prostate/vagina
- In distal rectal cancers the circumferential margin is usually the closest resection margin
- Surgeon “blind” about the location of the tumor when placing the TA stapler

Positive CRM: impact of T stage and tumor distance from the anal verge

Stage	>10 cm	9.9-5 cm	<5cm
T1	0	0	0
T2	2.9%	4.5%	11.4%
T3	18.9%	18.5%	35.2%
T4	46.7%	33.3%	69.2%

Nagtegaal et al, JCO 2005

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Surgery for Low Rectal Cancer

- Be liberal with the use of neoadjuvant therapy
- Always TME
- Beyond TME if other organs potentially involved
- Alternatives:
  - Full-thickness local excision
  - LAR with double stapling
  - Intersphincteric resection
  - Abdominoperineal resection

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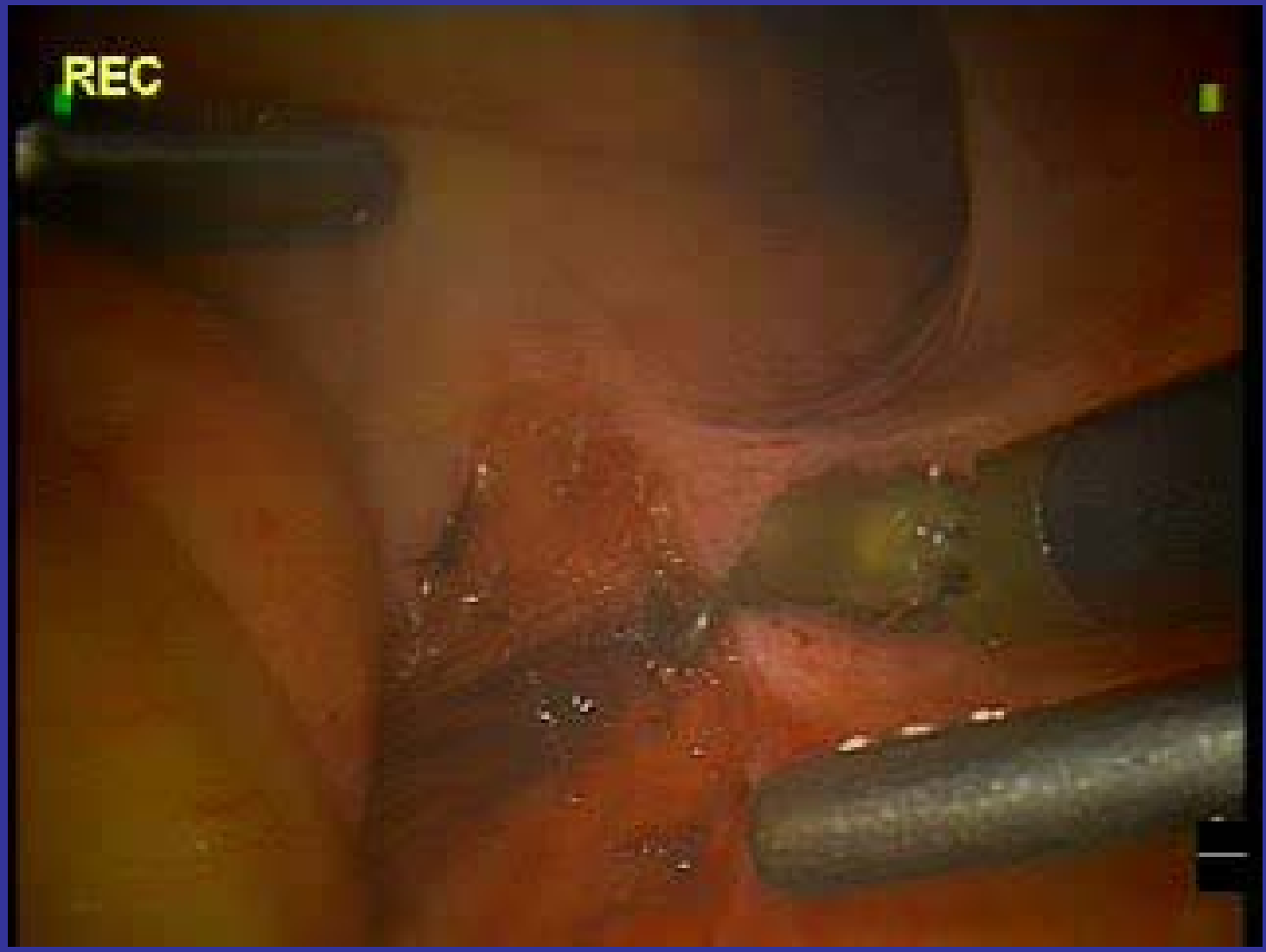
Dissection Using the DaVinci Robot



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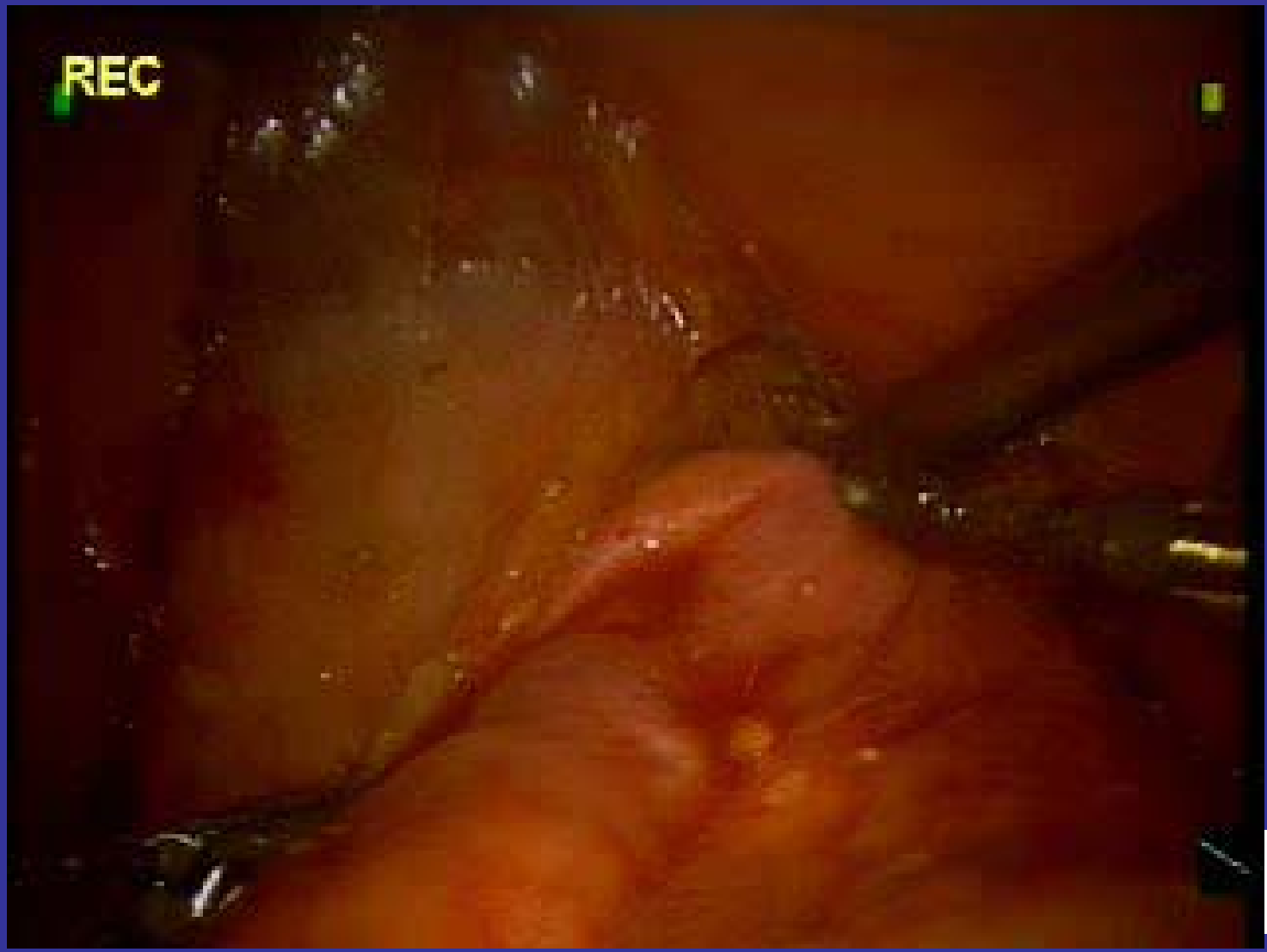

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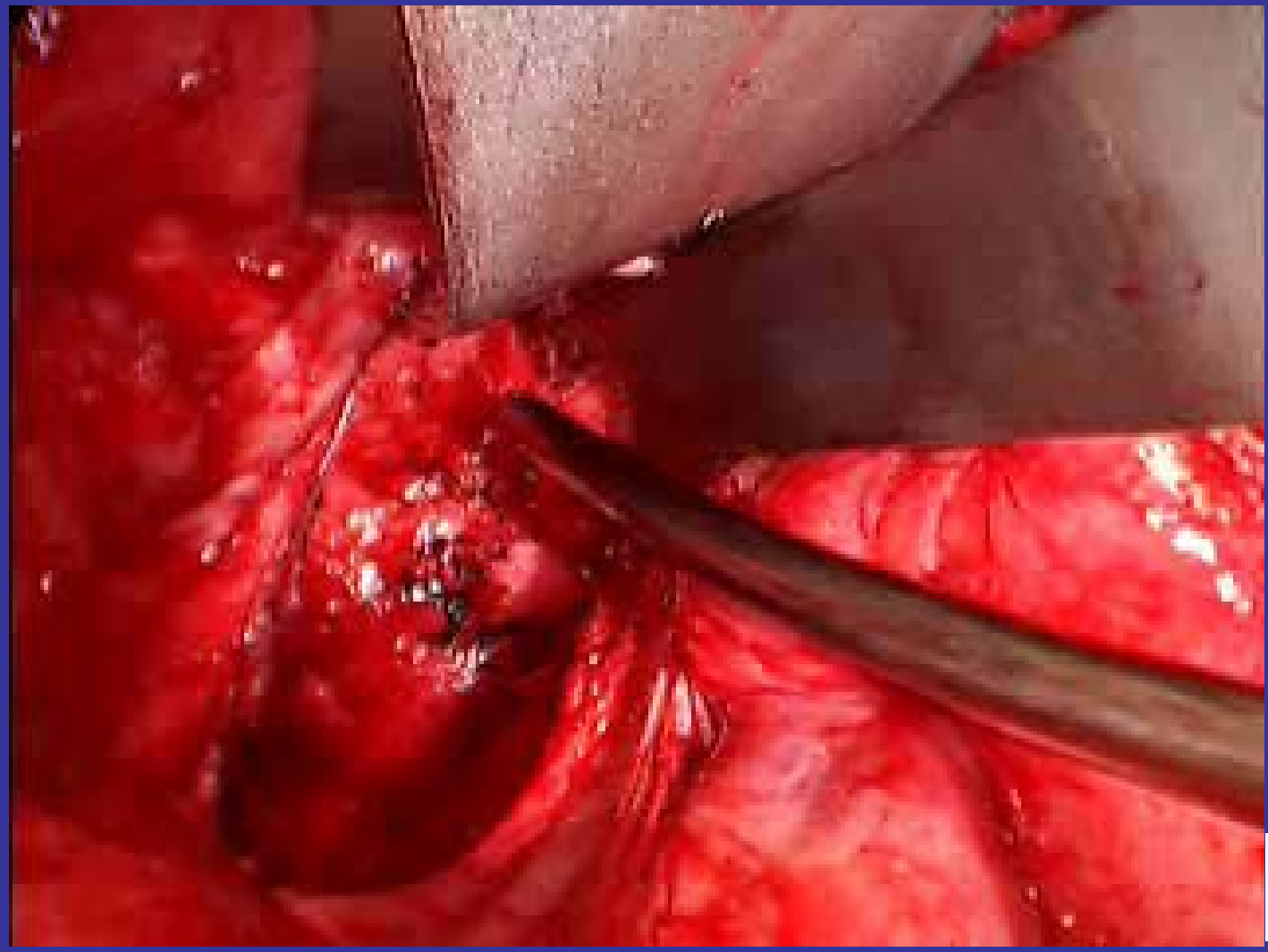
Confusing Terminology

- Intersphincteric resection
  - Low anterior resection with double stapling
  - Parks-coloanal
  - True intersphincteric resection

- Coloanal anastomosis
  - All of the above

LAR with Double Stapling Technique



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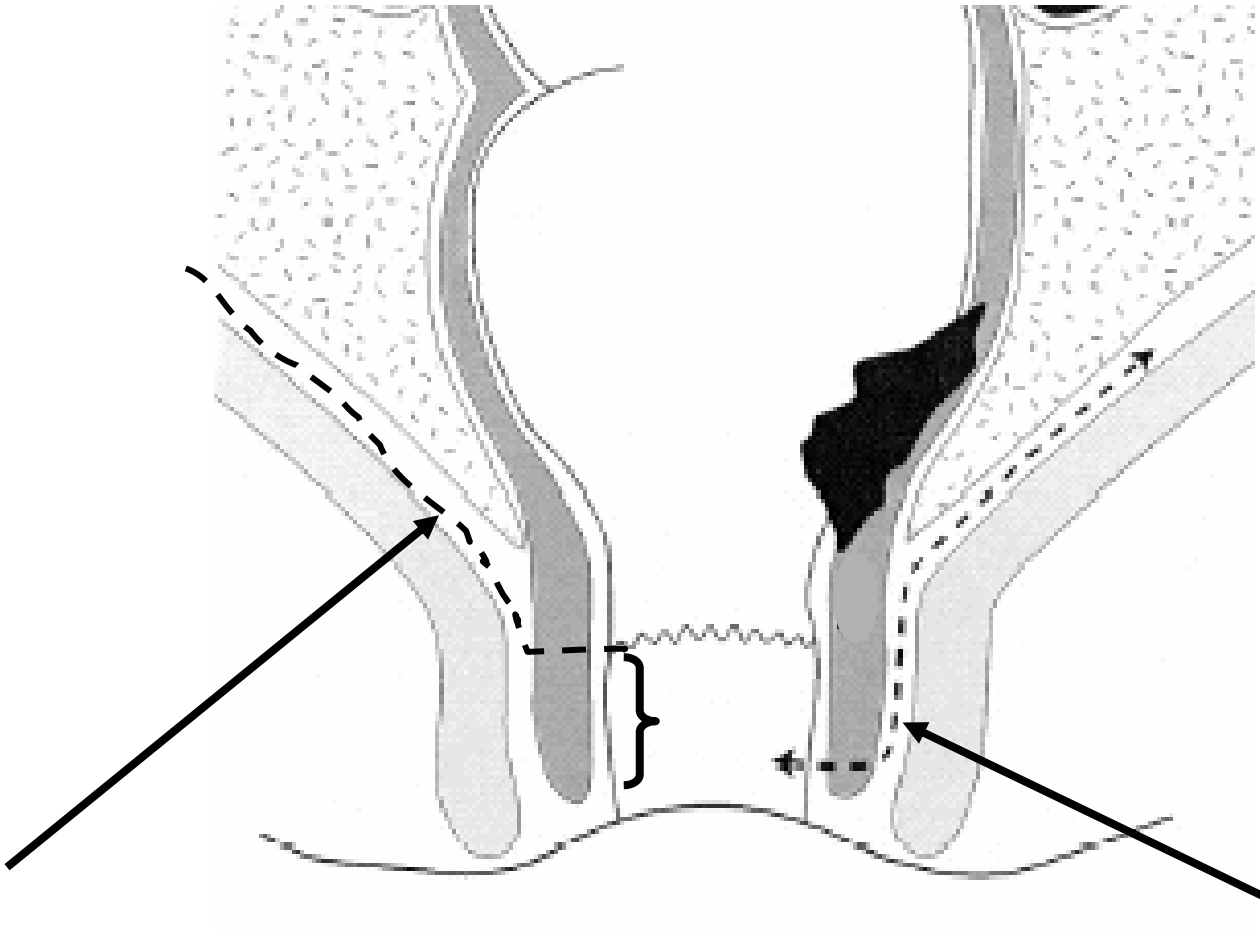
Transanal vs. Intersphincteric



Transanal

Intersphincteric

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Transanal-Transabdominal Resection

- Anterior tumors that do not infiltrate the prostate or vagina, levator or anal sphincter
- Have responded to neoadjuvant chemoradiation
- You are uncertain about being able to place the TA stapler and ensure adequate margin
- Allows to choose the distal resection margin under direct vision

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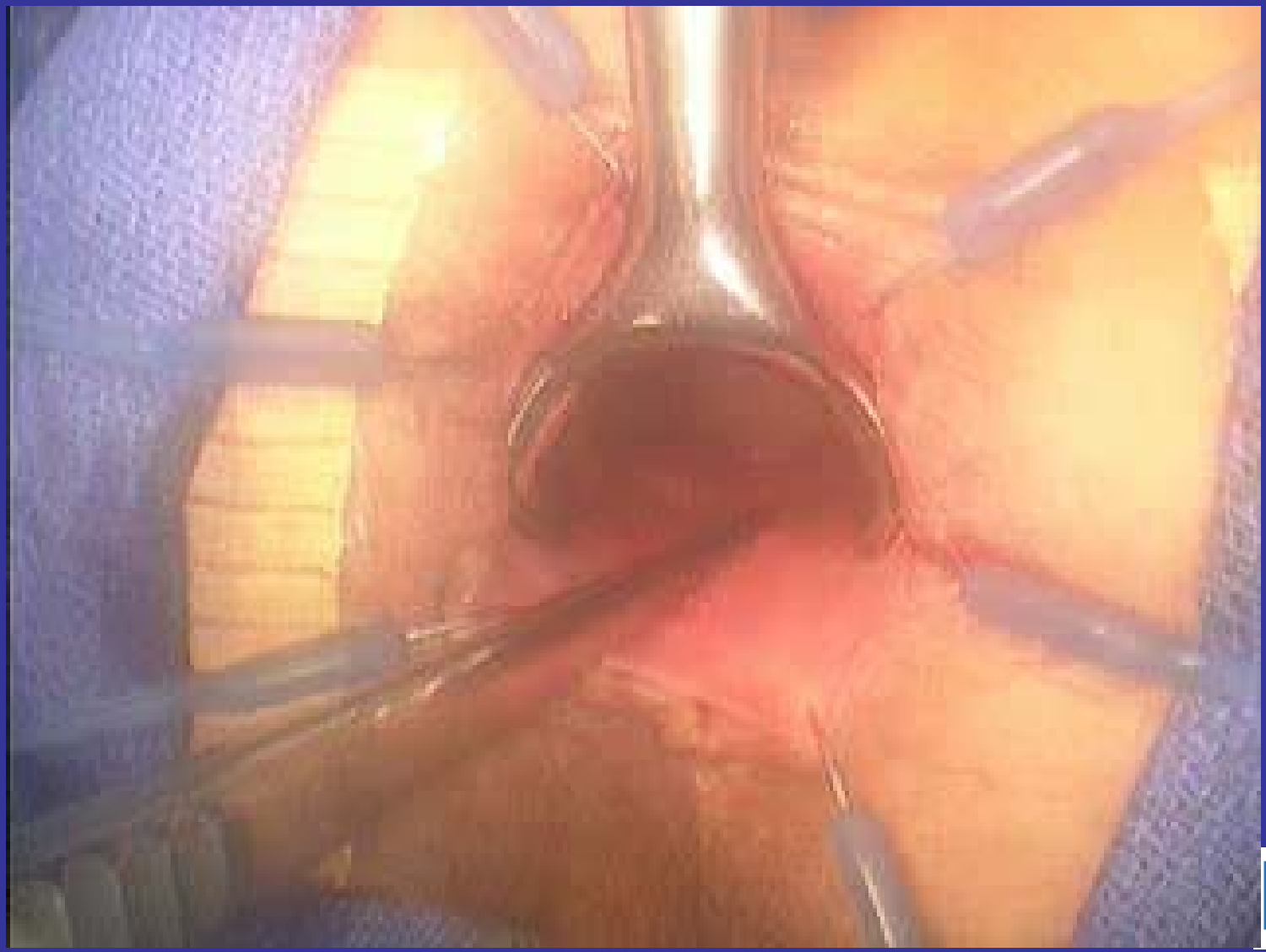
Transanal – Transabdominal Resection

- Star with the patient prone
- Make a full-thickness circumferential incision in the bowel wall at or slightly above the dentate line – you should see the lower margin of the tumor (leave 1 cm margin)
- Dissect the rectal wall from the surrounding tissues – prostate anteriorly, puborectalis laterally, and levator posteriorly
- Carrie the dissection several centimeter proximally
- Close the lumen of the rectum with interrupted sutures

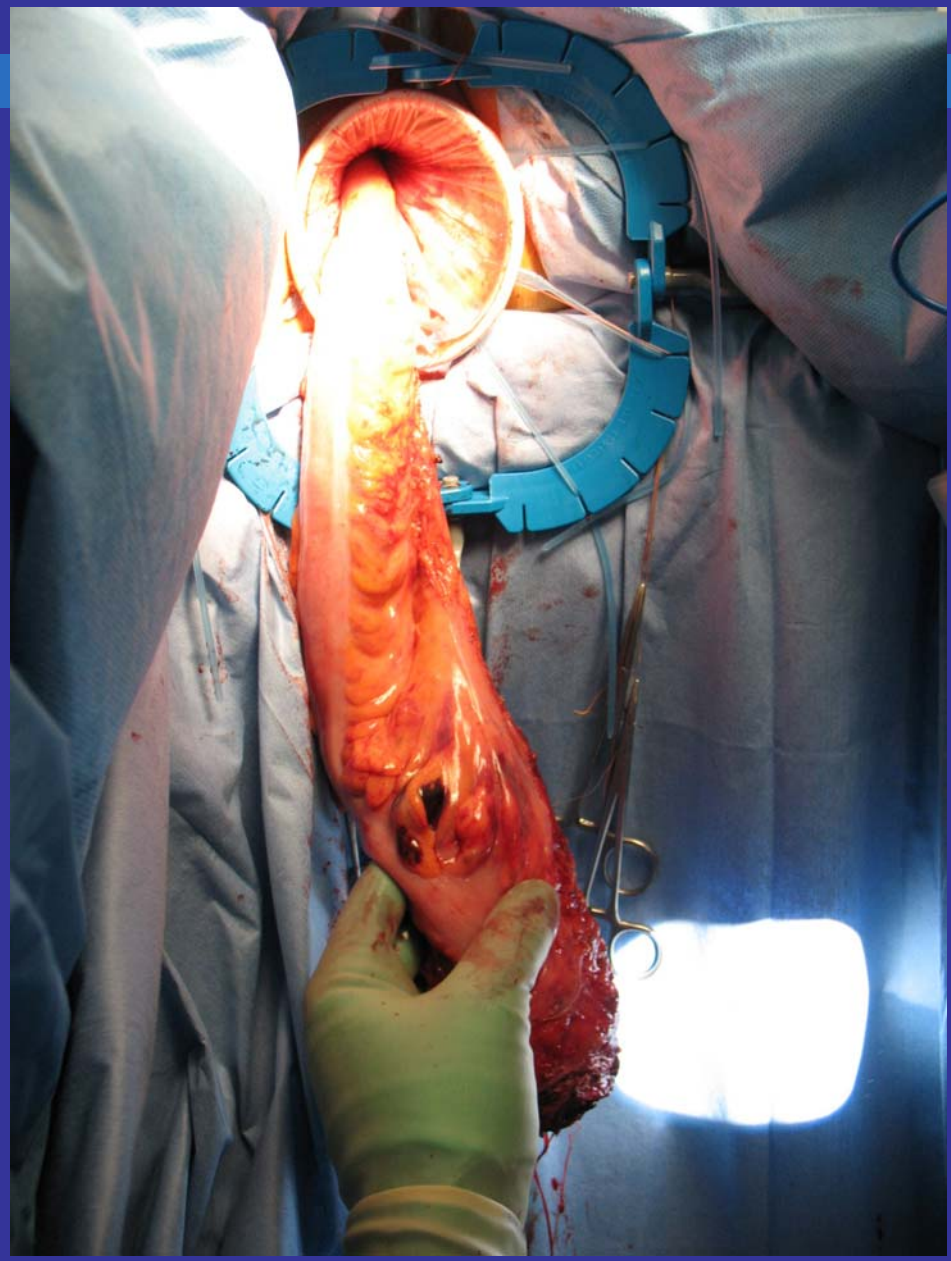
Transanal Dissection



Transanal – Transabdominal Approach (cont)

- Transfer the patient to the lithotomy position
- Do your total mesorectal excision until you reach the dissected area down in the pelvis
- If you do it laparoscopically you could remove the specimen through the anus, and avoid an abdominal incision
- Do your hand-sewn colo-anal anastomosis
- Loop ileostomy

Transanal Removal of Specimen



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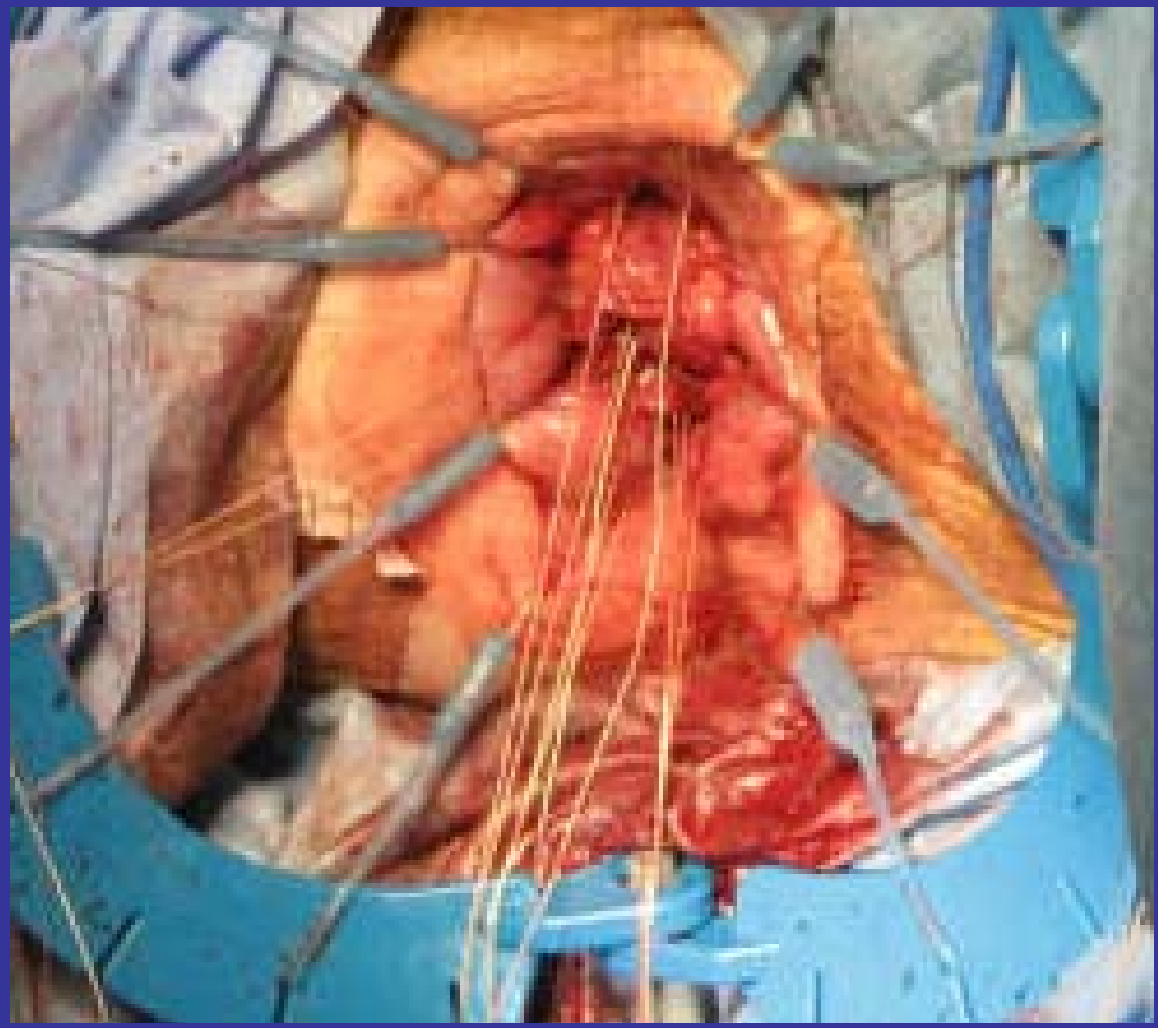
Coloanal Anastomosis (a la Parks)



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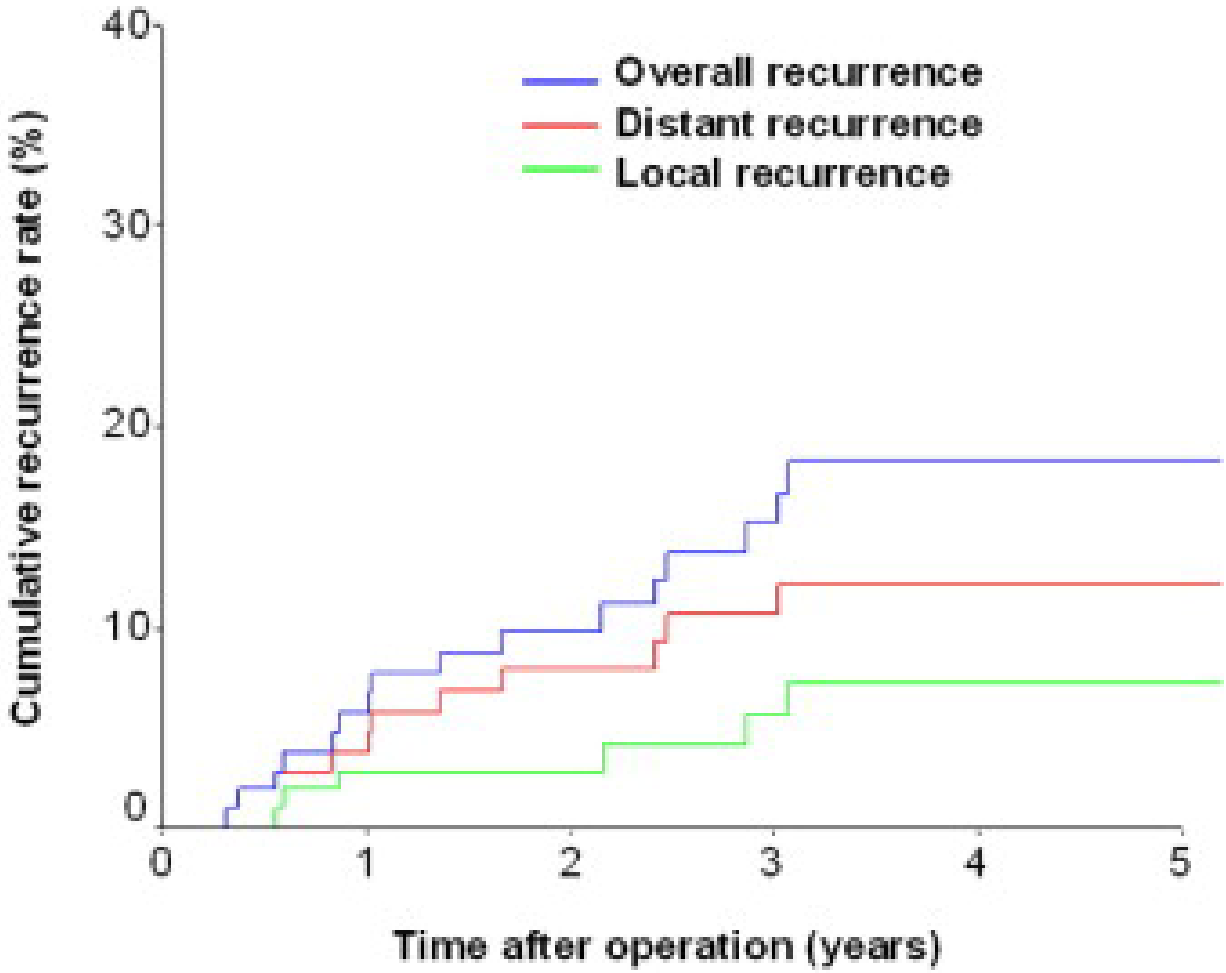
Intersphincteric Resection: Oncologic Outcomes



Akasu et al, J Am Coll Surg 2007

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Intersphincteric Resection: Functional Outcomes

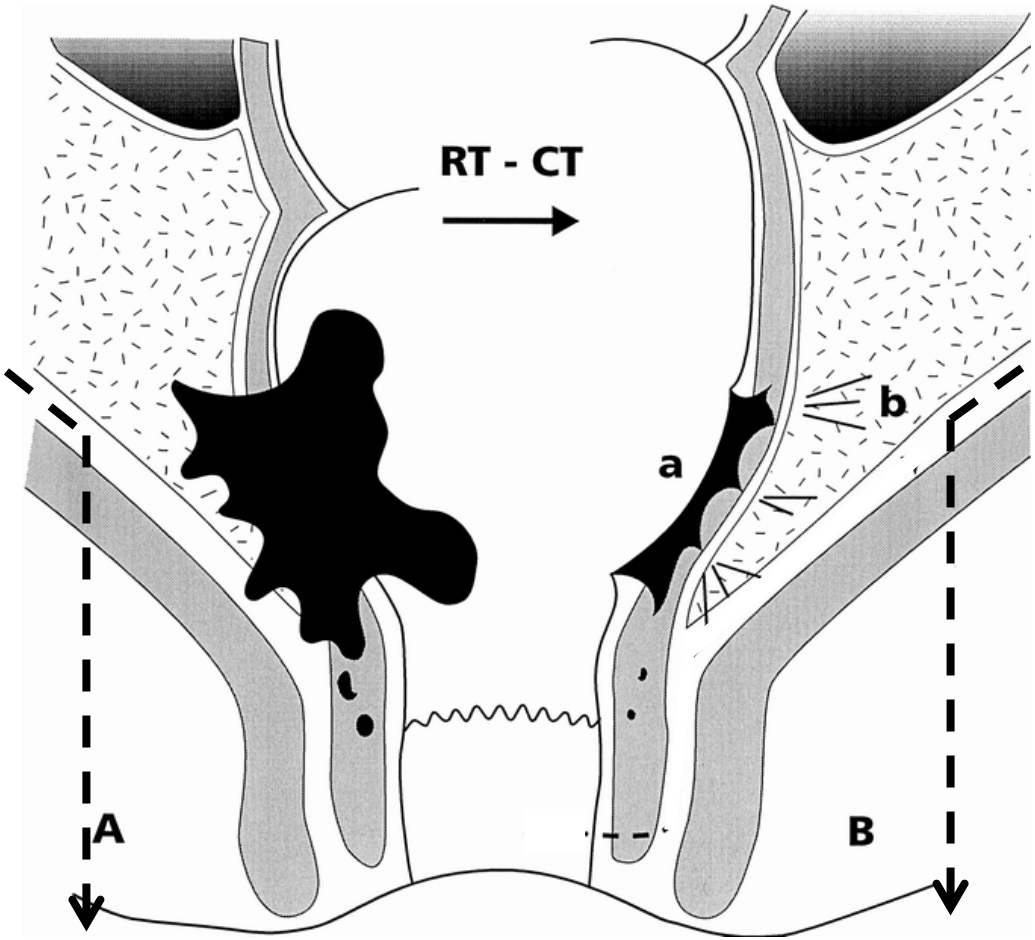
TABLE 3. Functional Results After ISR

Stool frequency per 24 h	2.3 ± 1.3
≤2	50 (60)
3–5	30 (36)
>5	3 (4)
Nocturnal defecation	24 (29)
Fecal urgency	16 (19)
Pad wearing	38 (46)
Intestinal transit regulators	22 (26.5)
Feces-flatus discrimination	21 (25.3)
Stool fragmentation	40 (41)
Low fiber diet	30 (36)

Values inside parentheses indicate percentages.

Chamlou et al, Ann Surg 2007

APR: Tumors Infiltrating the Levator or the Sphincter Before Neoadjuvant Therapy



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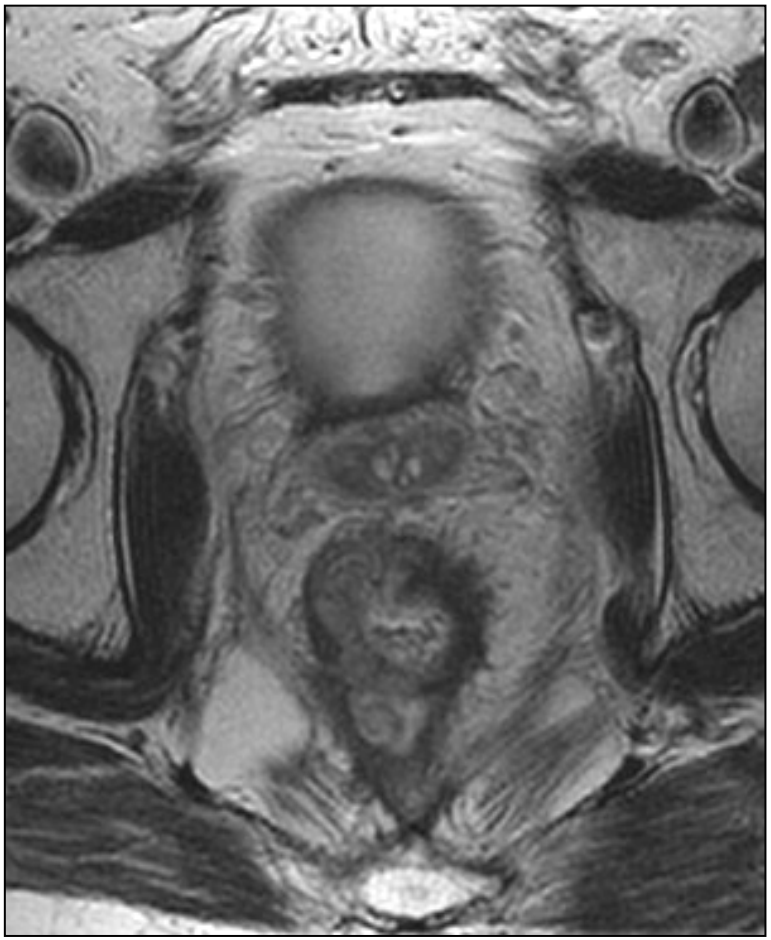
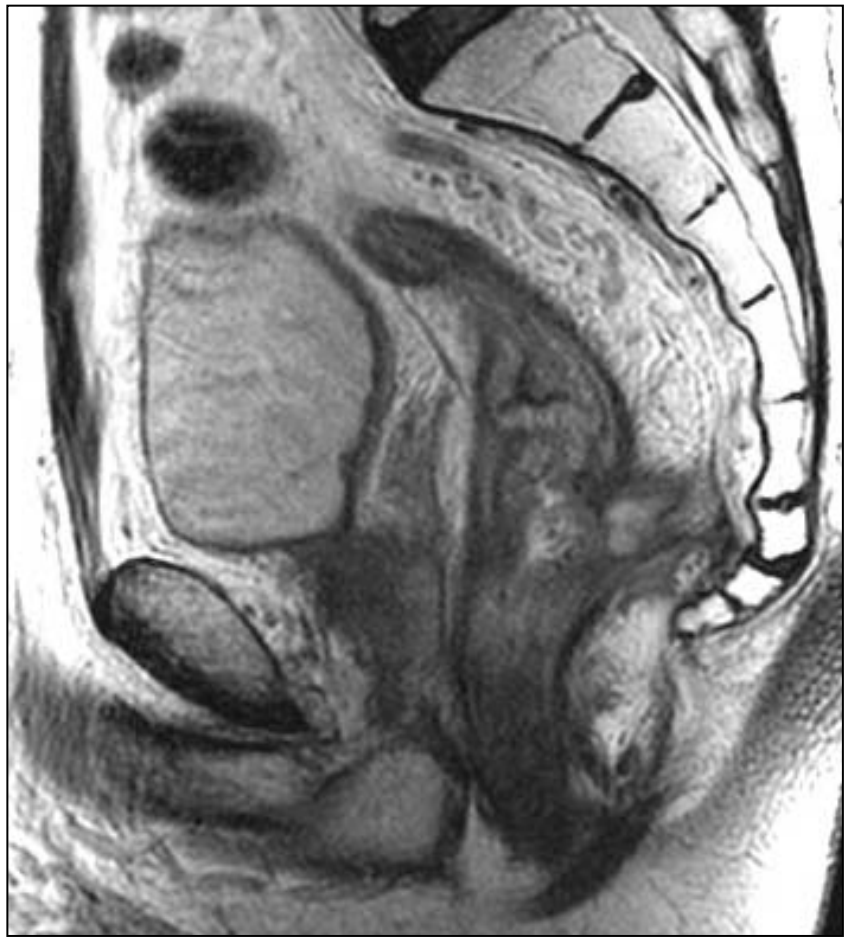
Low Tumor Infiltrating the Levators





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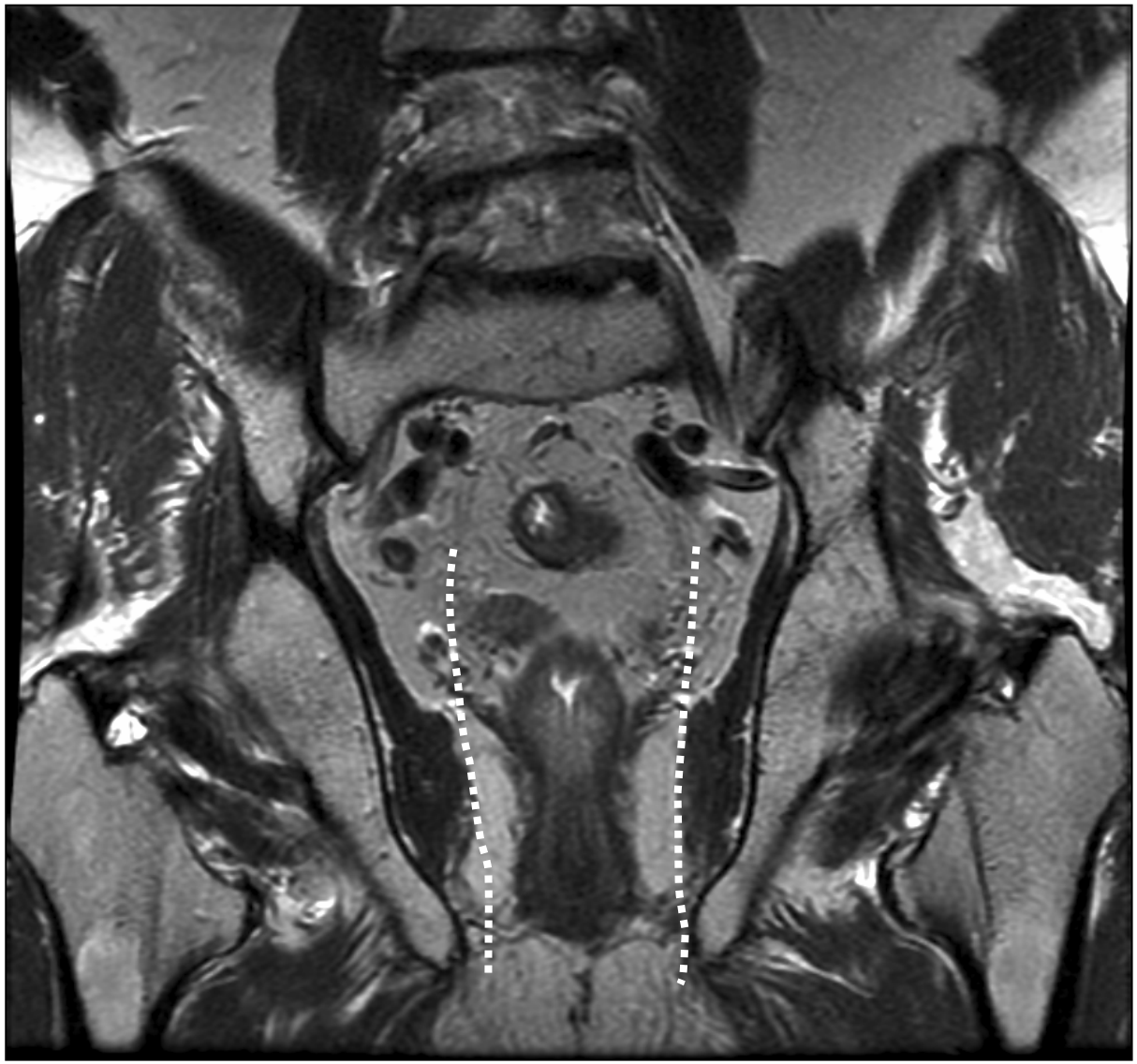
Cylindrical APR



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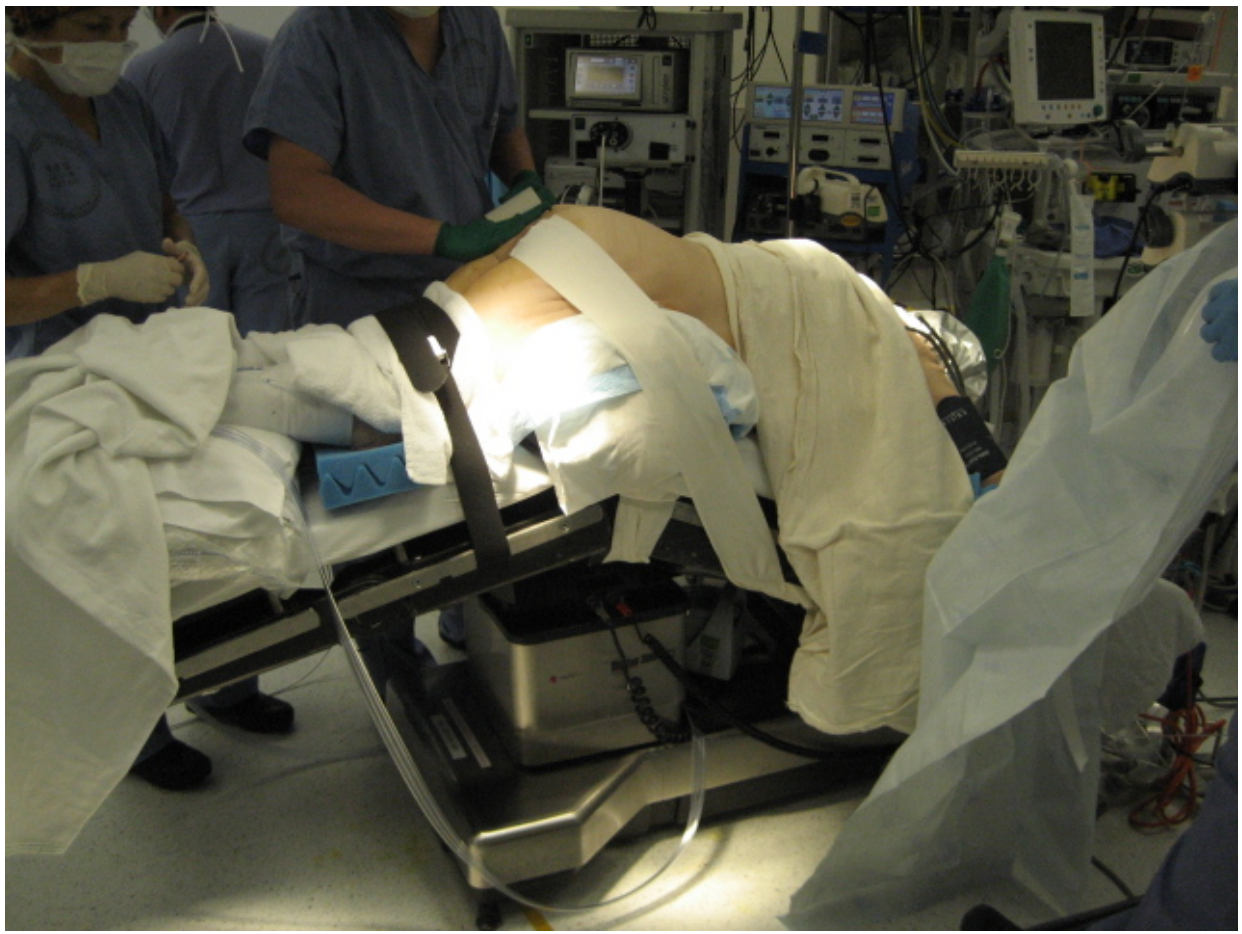
Prone Position for the Transanal Dissection and APR



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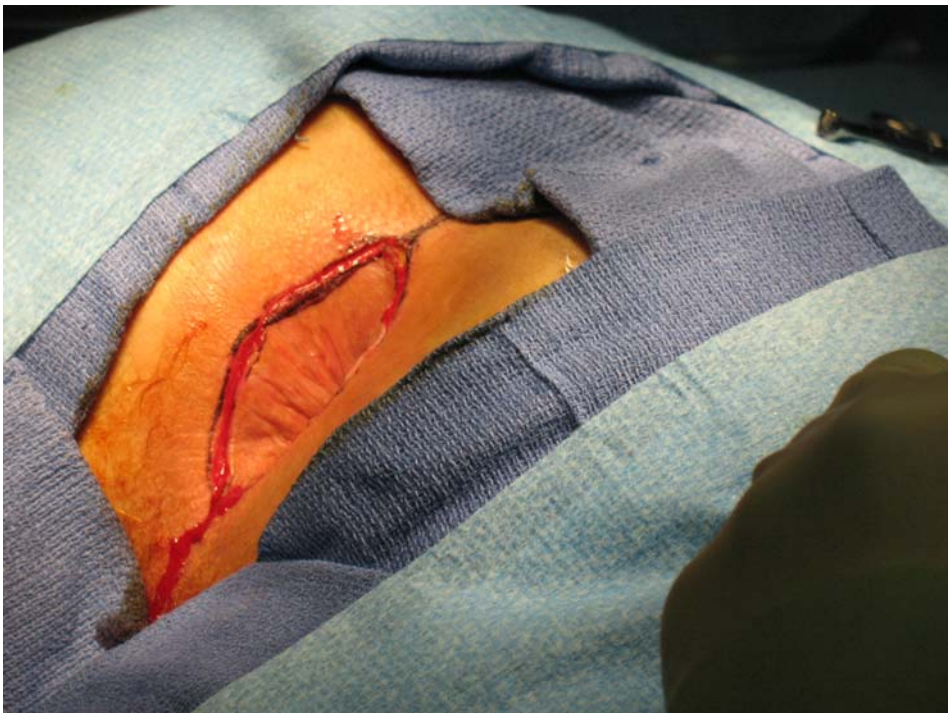
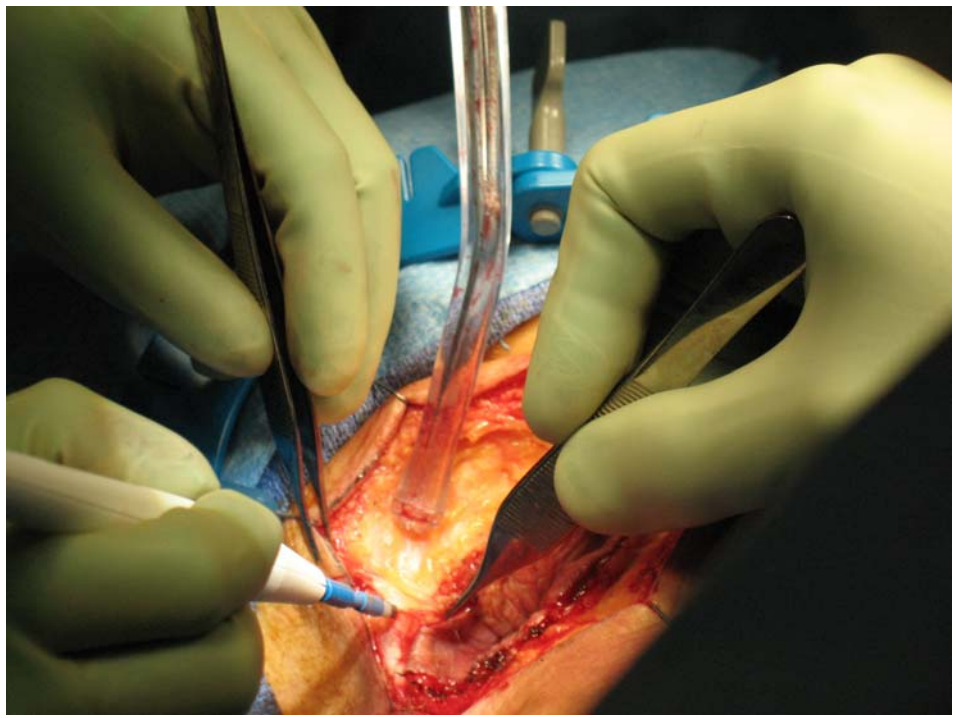
Abdominoperineal Excision in the Prone Position

Exposure



Assistance



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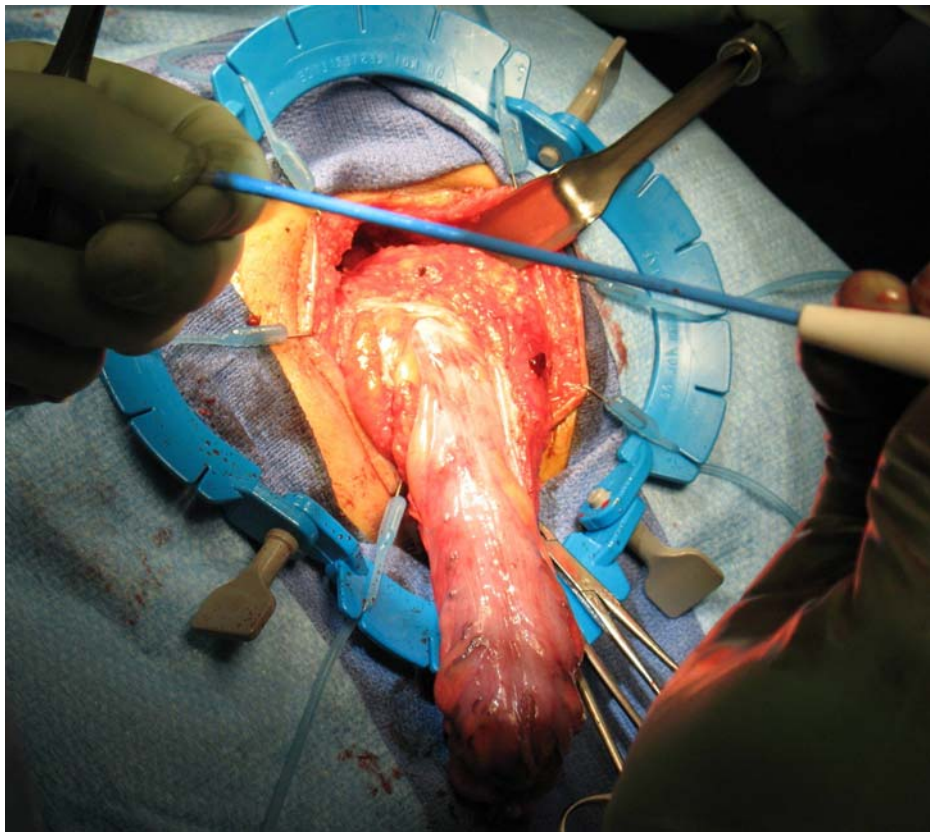
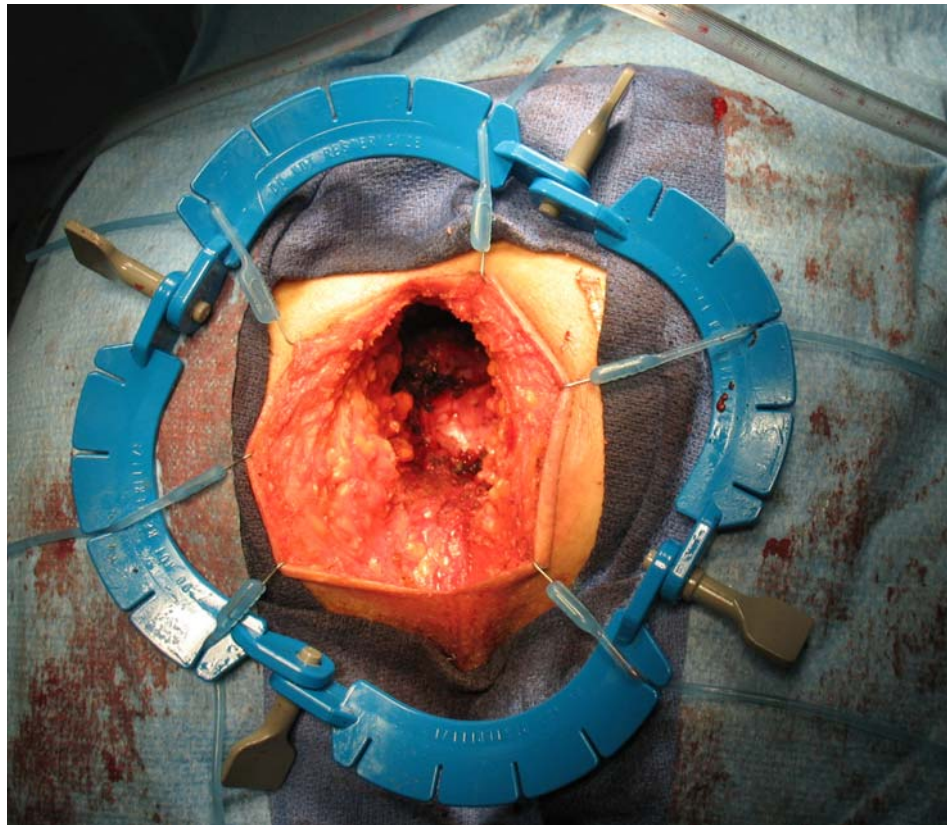
Abdominoperineal Excision in the Prone Position





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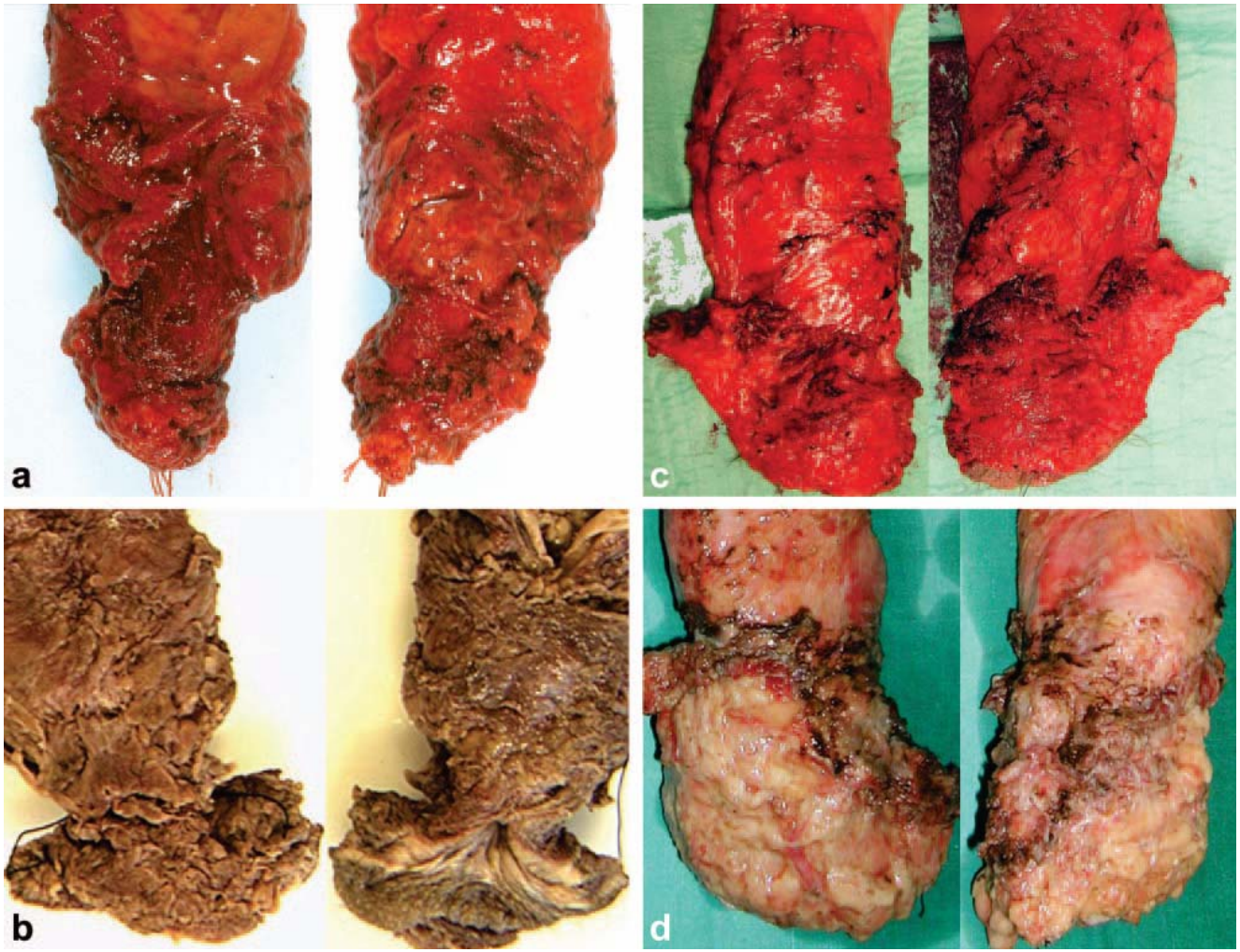
Cylindrical APR



From Marr et al, Ann Surg 242, 2005

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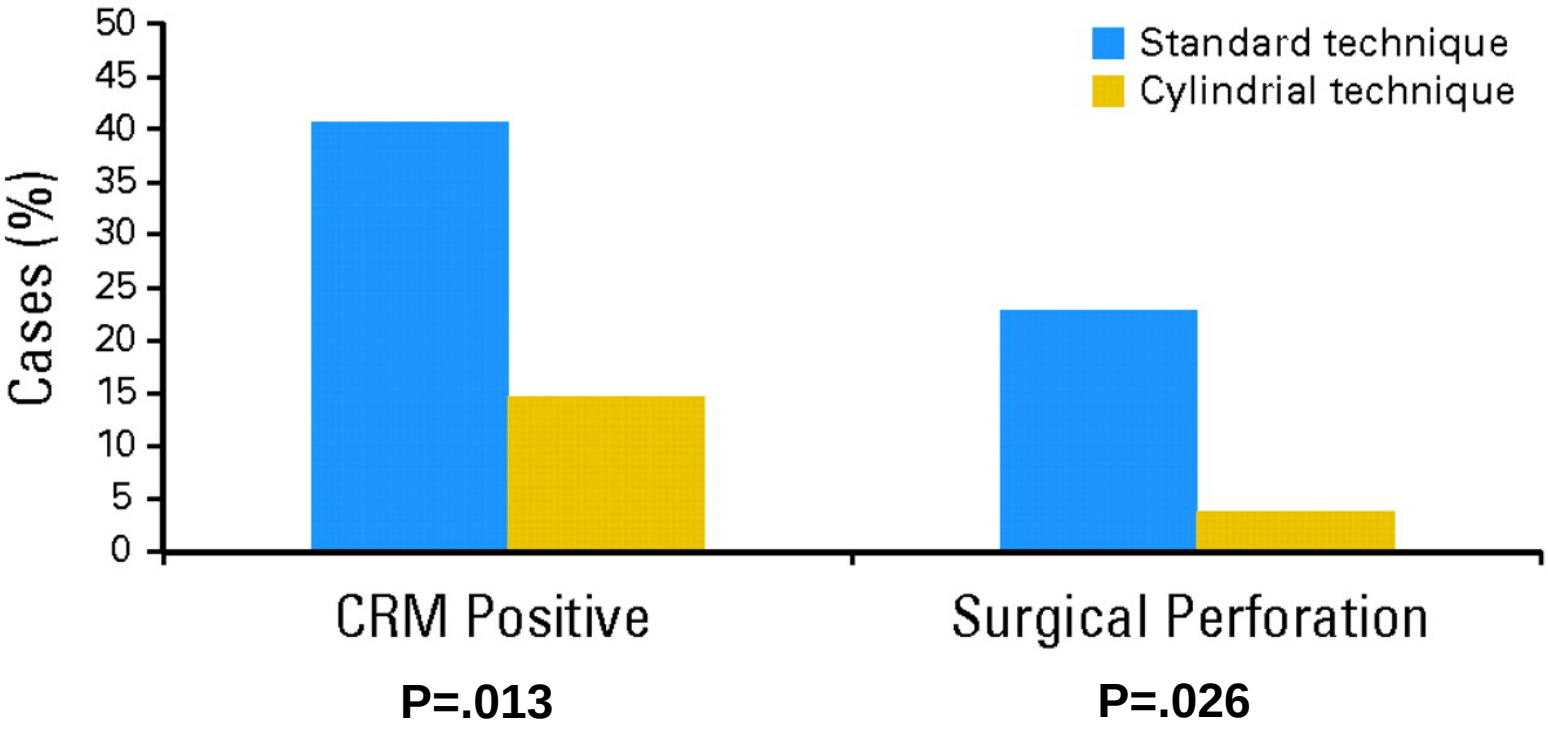
Cylindrical APR: Positive CRM and Surgical Perforation



West, N. P. et al. J Clin Oncol 2008

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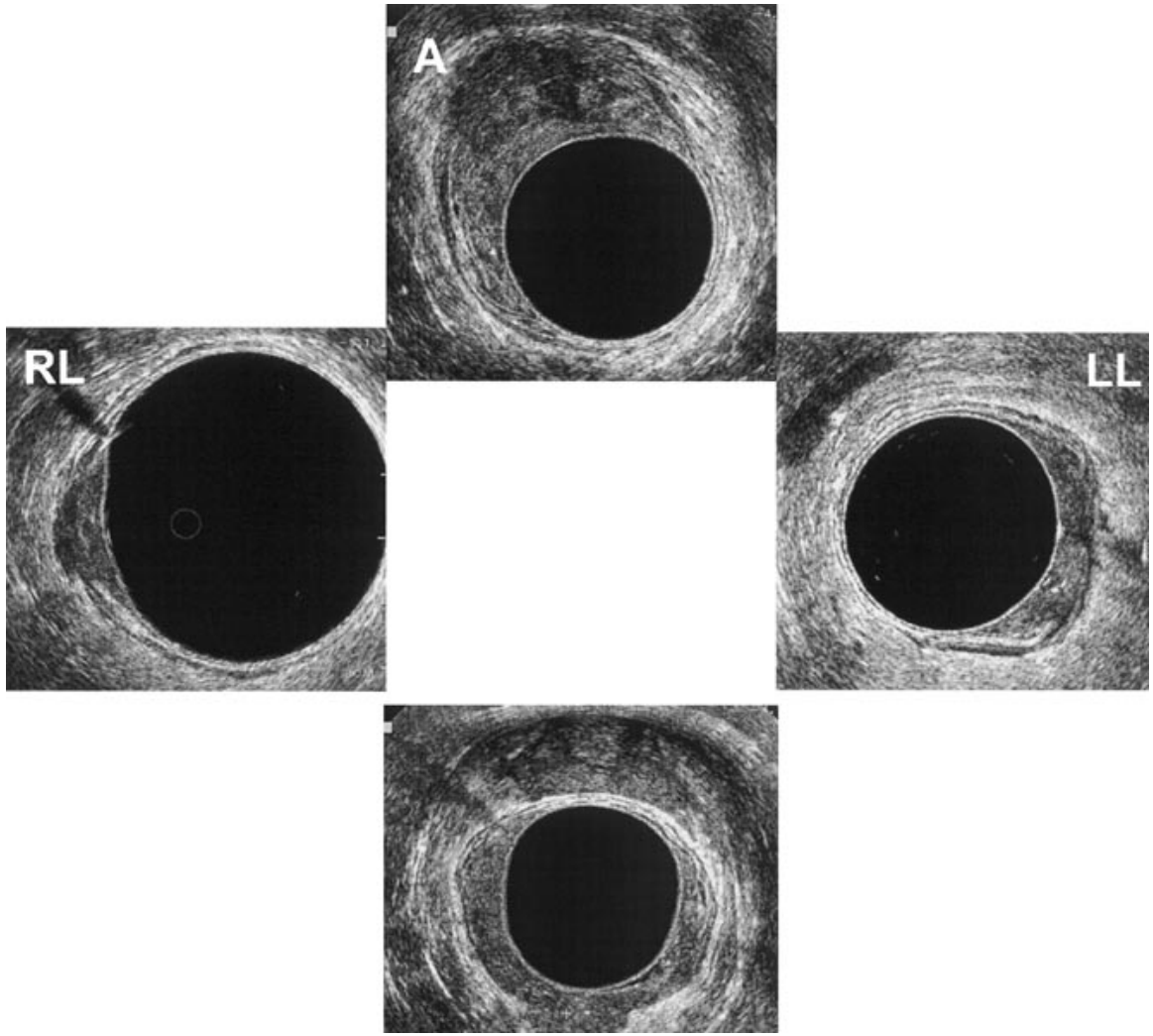
Circumferential Tumor Location



Lee et al, DCR 2005

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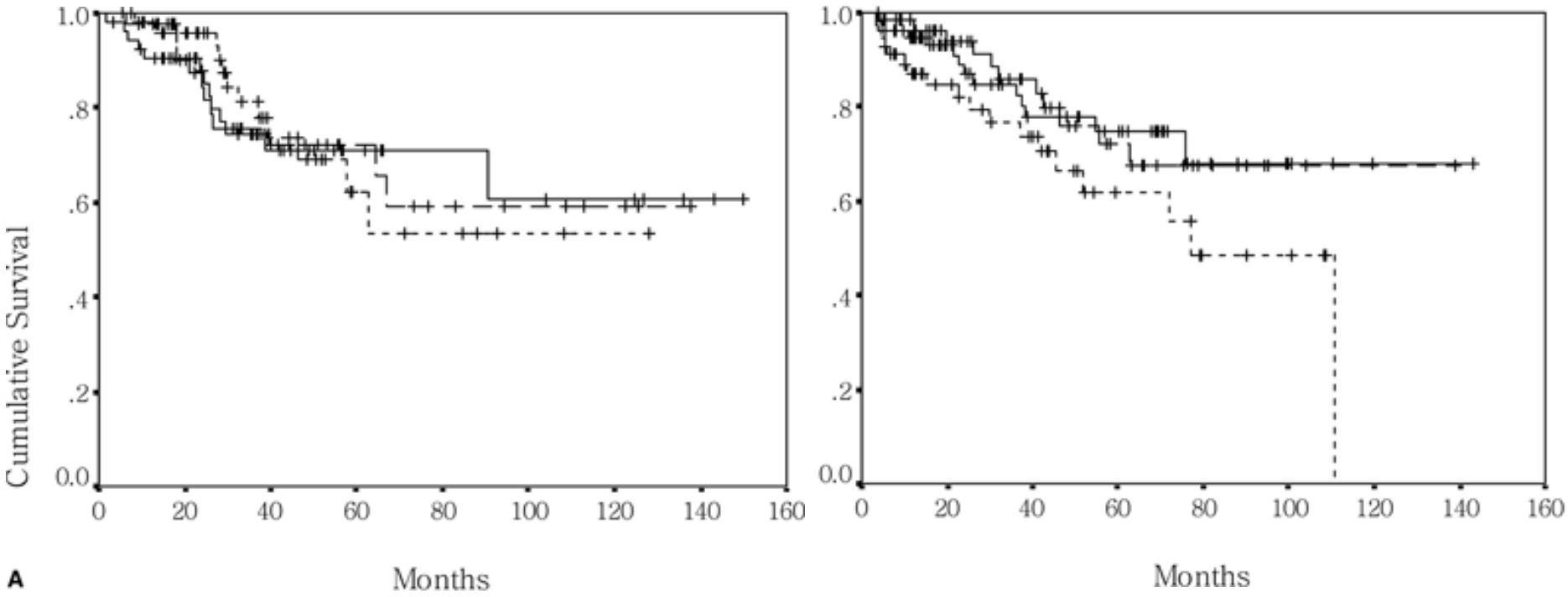
Anterior Location: Worse Survival in Males

Females

Males



Lee et al, DCR 2005

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Tumor Location: Impact on CRM and Survival

Location	Positive CRM	Survival (RR)
Anterior	44%	1.0
Lateral	21%	0.81
Posterior	23%	0.88
Circular	17%	0.63
Unspecified	17%	0.67

Den Dulk et al, Ann Surg 2007

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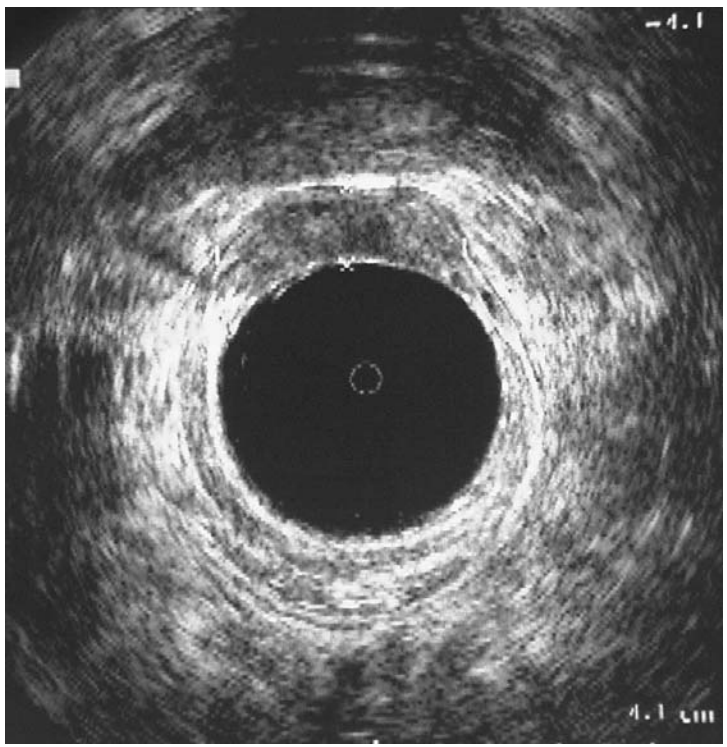
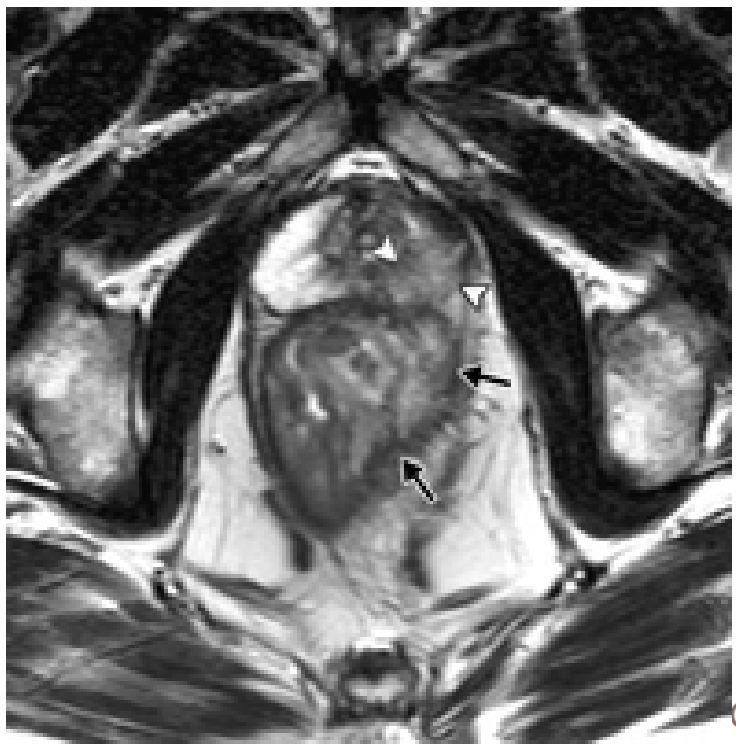
Anterior Distal Rectal Cancer

- Mesorectum thinner in the front
- Prognosis worse in anterior tumors
- Stay anterior to Denonvillier's
- Consider extended resection if fat plane not seen
- Males less likely to have an "extended" resection





Summary

- Distal rectal cancer represents a surgical challenge
- Treatment requires expertise and judgment
  - Preoperative tumor staging
  - Assessment of anorectal function
  - Use of neoadjuvant therapy
  - Selection of surgical procedure
  - Precise surgical technique