

## TRANS-ANAL APPROACH TO THE SURGICAL MANAGEMENT OF RECTAL CARCINOMA

### Presentation:

- Common presenting complaints include rectal bleeding, change in bowel habits, sense of rectal “fullness”; however majority of patients are asymptomatic
- Tenesmus, the constant sensation of needing to move the bowels, usually indicative of large stage II or III cancer
- Pain with defecation suggests lesion in lower third of rectum; lesions above sphincter are usually painless

### Diagnostic workup:

- Digital rectal exam: using this exam the physician may assess possible fixation of the lesion to the anal sphincter, possible fixation to the rectal wall and the pelvic wall muscles, and relationship to anorectal ring or sphincters
- Rigid Sigmoidoscope: determines distance between distal margin of tumor, top of anorectal ring, and the dentate line

### Preoperative Staging:

- CXR: to rule out pulmonary metastases
- CEA level: not used as a screening method; however, level has prognostic utility. Preoperative CEA of >5 has a worse prognosis stage for stage. Additionally, CEA levels that do not normalize after surgery imply presence of persistent disease
- CT scan: to demonstrate regional tumor extension, lymphatic and distant metastases, and tumor related complications such as perforation, or fistula formation
- Endoluminal ultrasound: (ERUS) may provide a more accurate characterization of the primary tumor and the status of the perirectal lymph nodes. This test may also distinguish tumors that only involve the mucosa or submucosa from those that penetrate the muscularis propria or extend through the rectal wall into the peri-rectal fat
  - In staging the tumor; the accuracy of ERUS is from 80 to 95%, compared with 65-75% for CT, 75-85% for MRI, and 62% for digital rectal exam (DRE)
  - However, due to interobserver variability and a significant learning curve associated with this procedure, ERUS more frequently understages rather than overstages the tumor
- MRI: endorectal coil approach has several advantages over ERUS; it allows a larger field of view, may be less operator and technique dependent, and allows for study of stenotic tumors

### Selection of surgical procedure:

There are 3 major curative surgical options for rectal cancer: local excision, sphincter-sparing surgery (LAR), and abdominal-perineal resection (APR).

- APR: Indicated when:
  - the tumor involves the anal sphincters
  - it penetrates into the rectovaginal septum

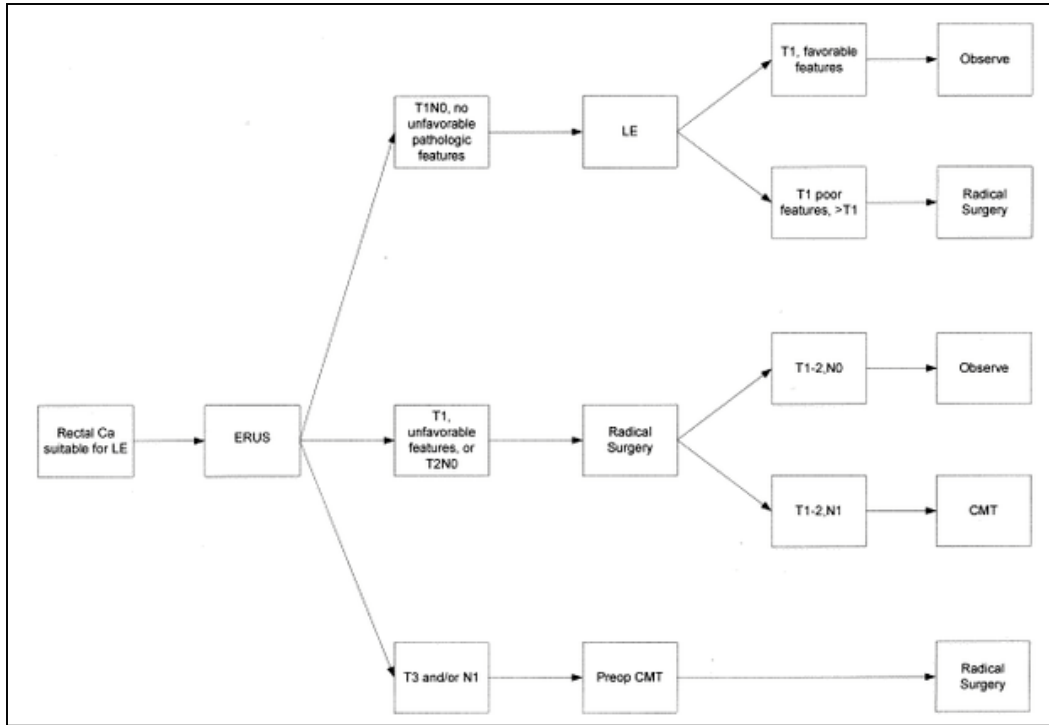
- in patients in whom a sphincter-preserving operation is not possible due to unfavorable body habitus or poor preoperative sphincter control.
- Sphincter-sparing:
  - LAR:
    - An operation for cancer of the proximal third to two thirds of the rectum (lesions located 5 to 6 cm above the dentate line).
  - Coloanal anastomoses:
    - Candidates for this procedure include young patients with low rectal tumors who have a favorable body habitus, good preoperative sphincter function, and lack of sphincter involvement by tumor.
  - Local excision: A local excision for rectal cancer involves removal of the primary tumor by a full-thickness excision followed by reapproximation of the rectal wall.
  - Criteria used to determine whether a local excision is suitable include:
    - tumor size less than 4 cm; location 8 cm or less from anal verge; well or moderately well differentiated histology; mobile tumor; no suspicion of perirectal or presacral nodes; tumor involves less than 1/3 of circumference of rectal wall; tumor is T2 or less
    - Trans-sacral approach (Kraske procedure): The posterior proctotomy is indicated for patients with low-lying rectal tumors that cannot be reached transanally. An incision is made above the anus, and via this incision the coccyx is excised, the pelvic fascia is divided, and the rectum is mobilized. A sleeve of rectal wall including the tumor is resected, and then the rectum is reapproximated in an end-to-end fashion.
    - Trans-sphincteric approach: Bevan or York-Mason procedure, is useful for T1 or T2 lesions of the distal rectum that cannot be adequately visualized for transanal excision. Unlike the transanal excision, this approach allows limited sampling of pararectal lymph nodes. With the patient in the prone jackknife position, the anal sphincter muscles are divided in the posterior midline, allowing access under direct vision to the distal 6 cm of the rectum. A full thickness excision of the tumor is carried out, the rectal wall, as well as the sphincter muscles are reapproximated.
- Trans-anal excision: most common local procedure performed
  - After placing self-retaining retractors at the anal verge, the anus is dilated to allow identification of the tumor. The lesion is excised with a full-thickness margin of rectal mucosa, to the perirectal fat with a 1-cm circumferential margin. The rectal defect is then closed transversely with interrupted sutures.
  - Transanal approach, with no adjuvant therapy → there is 18% recurrence for T1 lesions, and 47% for T2 lesions.
    - 5 year survival → 72-90% for T1 lesions, and 55-78% for T2 lesions
  - Transanal approach, followed by radiation +/- 5-FU based chemotherapy has a local recurrence of 8-17%, which improves to approximately 5% when only T1 and T2 lesions studied
    - 5 yr survival reported as 94% in one series
  - Local excision considered adequate for T1 lesions with favorable pathologic features

- T1 lesions with poor pathological features, or locally advanced T2 tumors on ERUS are recommended for radical surgery
- One retrospective study has compared patients undergoing local excision with chemoradiation to patients with same staged lesions undergoing APR
  - Results suggest comparable outcomes for early-staged lesions with favorable pathologic features, but not for unfavorable pathologic features
- In one study, patients who undergo immediate salvage by APR or LAR after local excision of a lesion with unfavorable features have significantly improved disease-free survival vs. patients with similar features who undergo salvage after local failure
- Novel approach: Transanal endoscopic microsurgery (TEM) –an alternative for early lesions of the middle and upper thirds of rectum that are out of reach or traditional transanal approach

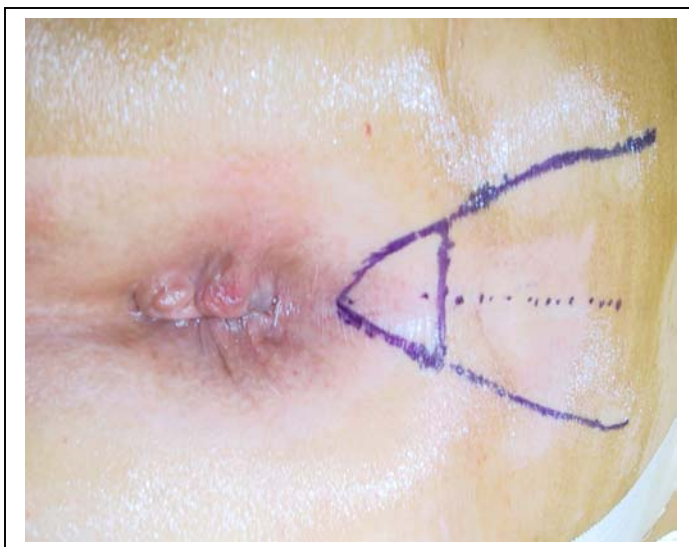
References:

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- Moore HG, et al. Local Therapy for Rectal Cancer - *Surg Clin North Am* - 01-Oct-2002; 82(5): 967-81
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Michael Wolfeld M.D.  
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Rectal cancers that meet criteria for local excision ( $\leq 8$  cm from the anal verge,  $\leq 4$  cm,  $\leq 1/3$  of the rectal circumference) are evaluated by endorectal ultrasound (ERUS). Management is based on ERUS results for depth of rectal wall invasion (T stage) and nodal status (N stage) as well as the presence or absence of unfavorable pathologic features (lymphovascular invasion, perineural invasion, poor differentiation). LE = local excision; CMT = combined modality therapy (radiation and chemotherapy).



Kraske procedure

• Rigid sigmoidoscopy: determines distance between distal end of the sigmoid flex and the distal flex  
 • CCR: in the sigmoid flex  
 • CEA level: 50 ng/ml in a screening patient; however, level > 100 ng/ml suggests a worse prognosis stage for CRC. Additionally, surgery may be necessary if presence of peritoneal disease  
 • TTT: used to determine regional lymphatic drainage, lymph node involvement, such as peritoneal, or distant sites

DATE : 07.08.01  
 TIME : 22:14:22  
 FREQ : 7.5MHz  
 RANGE : 9cm  
 GAIN : 9  
 CONT : 2  
 SCALE: 10mm  
 DIR : INVERSE

**Rectal cancer** Endoscopic ultrasound image of a rectal cancer with involvement of perirectal lymph node (arrow). Courtesy of Gavin C Harewood, MD and Mauritis J Wiersema, MD.

DATE : 07.15.00  
 TIME : 11:08:25  
 FREQ : 8.0MHz  
 RANGE : 6cm  
 GAIN : 9  
 CONT : 1  
 SCALE: 5mm  
 DIR : NORMAL

**Rectal cancer** Endoscopic ultrasound image of a T2 rectal cancer invading through submucosa and extending into superficial muscularis propria (arrow). Courtesy of Gavin C Harewood, MD and Mauritis J Wiersema, MD.