Recurrent and Locally Advanced Rectal Cancer Surgery

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Case

- 67 year-old female with prior anterior resection for rectosigmoid CA with recurrent pain and LBO
Questions to Ask

- Urgency of the situation?
- What was done surgically?
- Adjuvant therapy?
- Prior radiation?
- Anatomy of involvement
- Who do I need?
- Palliative or curative?
- Staged treatment?
Local Recurrence

- >5,000 patients/year in the USA
- If untreated:
  - median survival <12 months
  - Horrible complications
  - pelvic pain
- Most have exhausted other treatment options
- Many resectable at the time of diagnosis

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Recurrent Rectal CA - Candidates

- **Pre-TME**
  - Local recurrence rates were 20-30%
  - Primarily due to inadequate mesorectal resection

- **5-17% of patients will develop recurrent rectal cancer (RRCA)**
  - Despite TME
  - Despite adjuvant therapy

- **Approximately 50% of patients are potential candidates for surgical resection**
  - Only 30-40% will achieve an R0 resection
  - ~20% patients with recurrent rectal cancer are surgical candidates for cure
Anterior and Posterior Margins

Anterior: the urogenital organs

Posterior: sacrum, piriformis, sacral plexus
Pelvic Patterns of Recurrence

Most located in the posterior part of the bony pelvis

Fewer than 5% involve the pelvic side wall

Sacrum & Coccyx involved in 30%
Advanced Pelvic Recurrence
What is a “Difficult Pelvic Dissection” in Recurrent Rectal Cancer?

- Distortion of anatomic planes
  - Inflammation
  - Scar tissue/adhesions

- Bleeding

- Injury to pelvic structures
  - Ureters
  - Bladder

- Multi-visceral involvement
- Local recurrence
  - After local excision
  - After radical excision

Neoplasia = High stakes situation

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Strategic Planning

- Imaging
  - Know what you are getting yourself into!

- Team Building
  - Multidisciplinary surgical teams are better prepared

- Intra/pre-operative
  - Neoadjuvant therapy
  - Stents

- Reconstruction
  - Putting it back together
The Team

- Radiology
- Pathology/Blood
- GYN-Onc
- Urology
- Vascular Surgery
- Orthopedics
- Surgical Oncology
- Neurosurgery
- Plastic Surgery
- Radiation Oncology
- Anesthesia
- Colorectal Surgery
- Medicine / Impact
Planning Considerations

- 12% of rectal cancers extend beyond the mesorectum
- Postop chemorxrt doesn’t prevent recurrence if circumferential margin is involved by tumor.
- R0 resection imperative

- Urinary System
- Male reproductive organs
- Female reproductive organs
- Small bowel
- Sacrum
- Pelvic side walls
Preoperative Evaluation

- Confirm the diagnosis
- Exclude distant metastasis
- Assess resectability
- Evaluate operative risk
Preoperative Staging = Proper Patient Selection
Limitations of Imaging Studies in Recurrent Rectal Cancer

- Most patients with recurrent rectal cancer received prior chemoradiation and/or prior surgery

- Preoperative images do not reliably predict postoperative pathology
  - Fibrosis vs tumor

- We still rely on imaging to help plan
  - Combining modalities may help mitigate the limitations of each one
MRI to Look for Local Invasion

No Invasion

Invasion
Tumor Infiltrating Bladder Imaging Importance

CT Scan

MRI

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Upper Margin: Resectable Recurrence
Upper Margin: Unresectable Recurrence
Lateral Margins

Lateral: ureters, iliac vessels, side wall
Preoperative Considerations

- Anatomic planes distorted from previous surgery
- Distinction between scar and tumor almost impossible
- Anatomic planes opened at original operation potentially involved by recurrence
Operative Decisions

- Exclude intra-abdominal spread
- Assess resectability; if you think you can’t remove the tumor, don't try
- Start dissection in planes that were normal on imaging
- Work around the tumor
- Avoid opening planes involved by tumor
- En-block (total or partial) resection of adjacent organs
- Take frozen sections
- Identify positive margins
Extensive resections often require complex reconstruction and permanent urinary diversion.

Urinary leaks are common after chemoradiation.

Complete cystectomy or prostatectomy better results than partial resection.

Ureteral stents are helpful.
Pelvic Exenteration and Sacrectomy

Abdominal approach

Perineal approach

Tumor
Perineal Dissection

Incision

Ischiorectal fat
Sacral View
Periosteal Elevation

Laminectomy

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Reported Outcomes

- 5-year survival
  - R0 resection: 37-60%
  - R1: 22%
  - R2: 10-14%

- Multimodality treatment
  - OS 31% vs. 24% in surgery alone

- Predictors of survival
  - *R0 resection*
  - Multimodality treatment
  - Neoadjuvant radiation
<table>
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<th>R0 Resection</th>
<th>Morbidity (%)</th>
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Intra-operative Radiotherapy (IORT)

- Indications
  - Close R0 margins
  - Known microscopically positive margins
  - Grossly unresectable pelvic disease
  - After sacrectomy

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Intra-operative Radiotherapy (IORT)

- **Controversial Data on efficacy**

- Improved Local control
  - Compared to surgery alone
  - No clear effect on overall survival

- Others: No difference in Local control or Survival
  - Wiig 2002, Tan 2013

- Most studies too underpowered to make definitive conclusions

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Conclusion

- High morbidity
- Potentially curable
- Multidisciplinary team is critical
- Long-term survival in recurrent disease is possible if:
  - recurrence is truly isolated
  - diagnosed early
  - treated aggressively
  - resected with negative margins
Department of Colorectal Surgery
Our Mission

To be leaders of Colorectal Surgery, rooted in our heritage, committed to the care of our patients, well-being of each other, and excellence in research, innovation, and education.
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Every life deserves world class care.