

Management of Non-metastatic Rectal Cancer: A Surgeon's Perspective

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Outline

- Anatomy and staging overview
- Goals of care
- Early vs locally advanced Rectal Ca
- Surgical Options
- Watch and Wait approach

Challenges with Rectal Cancer Management

- Pre-therapy Staging.
- Post-therapy Staging: Assess response.
- Anatomy: Confined space, vital structures.
- Physiology: Important QOL functions.

Bowel function and QOL

“There’s three things in this world that you need: Respect for all kinds of life, a nice bowel movement on a regular basis, and a navy blazer.”

Robin Williams

Goals of Rectal Cancer Management

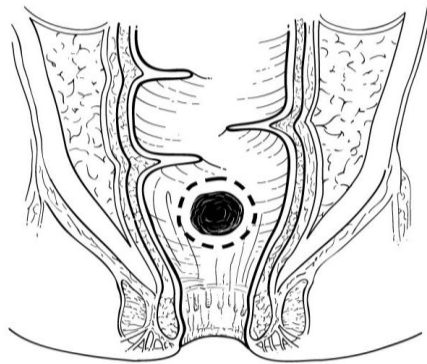
- Eradicate disease with durable local and distant control.
- Preserve bladder, sexual and anorectal function

Rectal Cancer Therapy: Considerations

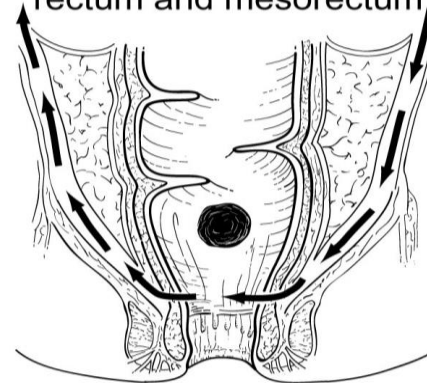
- Local excision or radical resection?
- Sphincter preserving or not?
- Autonomic nerve preservation
- Trans-anal or trans-abdominal?
- Robotic or open?
- Preoperative Long Course Chemoradiation?
- Preoperative short course radiation?
- Preoperative short course radiation > Chemo?
- Total Neoadjuvant Chemo > ChemoRT TNT (Induction)?
- Total Neoadj ChemoRT > Chemo TNT (Consolidation)?
- Preop Chemotherapy alone?
- Non-operative (organ-preserving) approach?

Basic Surgical Options for Rectal Cancer

Local Excision

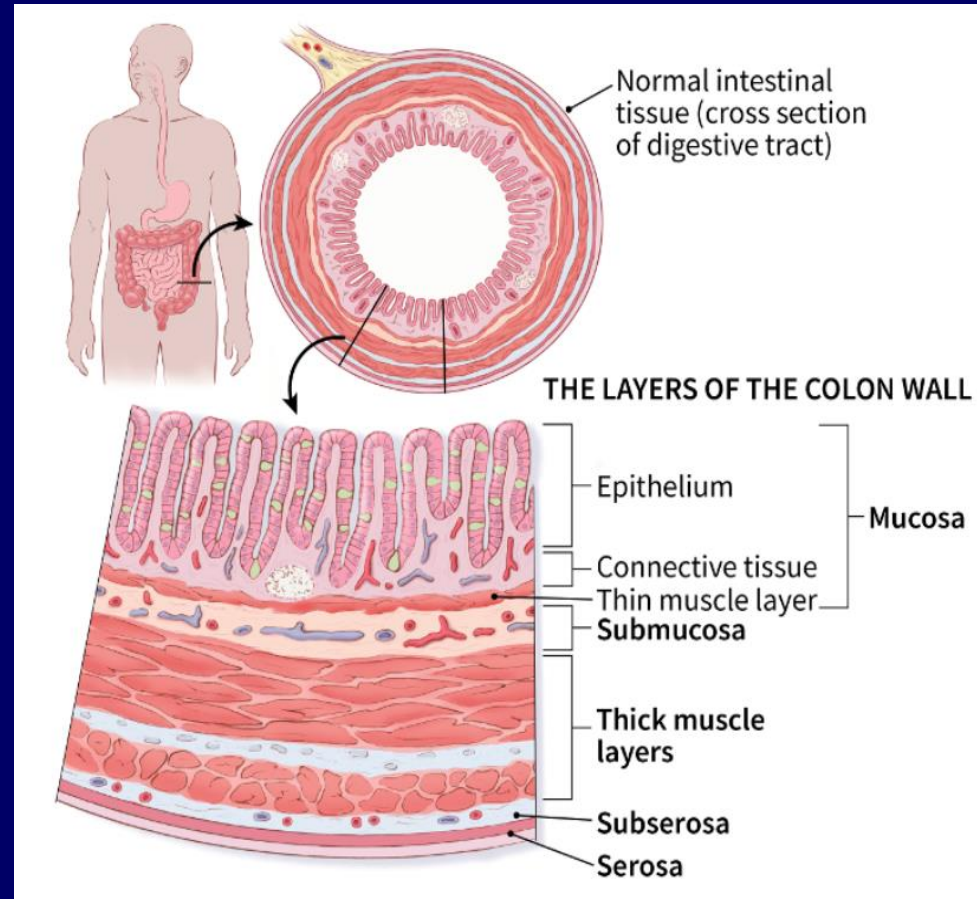


Resection of rectum and mesorectum



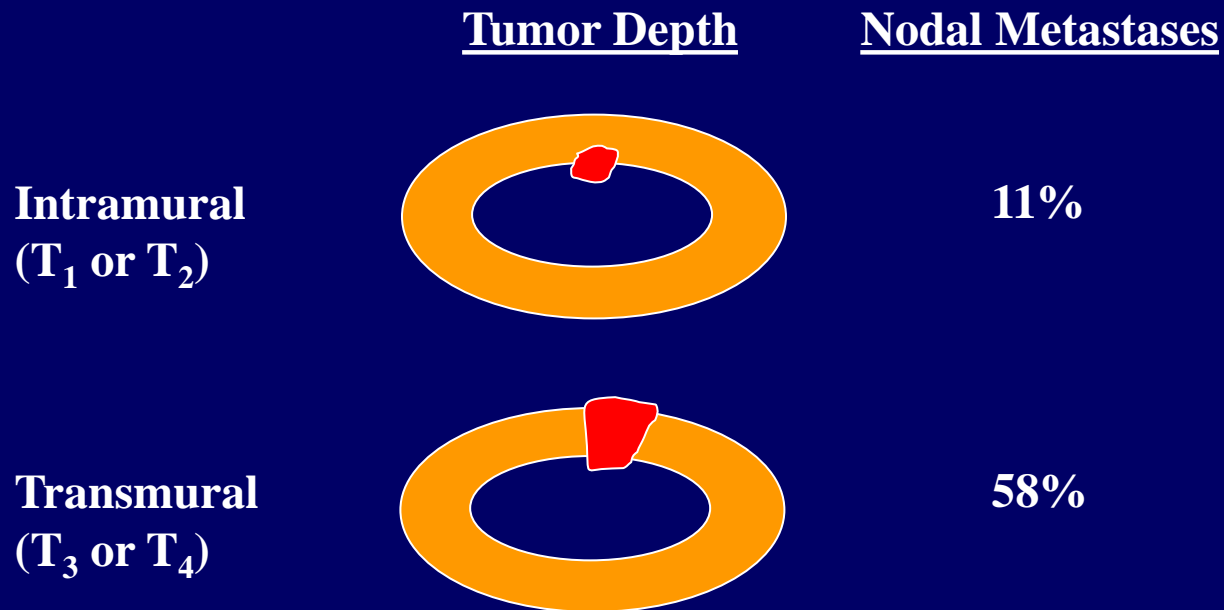
Rectal Cancer Staging¹

AJCC Stage	Stage Grouping
0	T _{is} N ₀ M ₀
I	T _{1/2} N ₀ M ₀
IIA	T ₃ N ₀ M ₀
IIB	T _{4a} N ₀ M ₀
IIC	T _{4b} N ₀ M ₀
IIIA	T _{1/2} N _{1/1c} M ₀ OR T ₁ N _{2a} M ₀
IIIB	T _{3/4a} N _{1/1c} M ₀ OR T _{2/3} N _{2a} M ₀ OR T _{1/2} N _{2b} M ₀
IIIC	T _{4a} N _{2a} M ₀ OR T _{3/4a} N _{2b} M ₀ OR T _{4b} N _{1/2} M ₀
IVA	Any T Any N M _{1a}
IVB	Any T Any N M _{1B}
IVC	AnyT Any N M _{1c}



¹ The American Cancer Society, Colorectal Cancer Stages. 2023

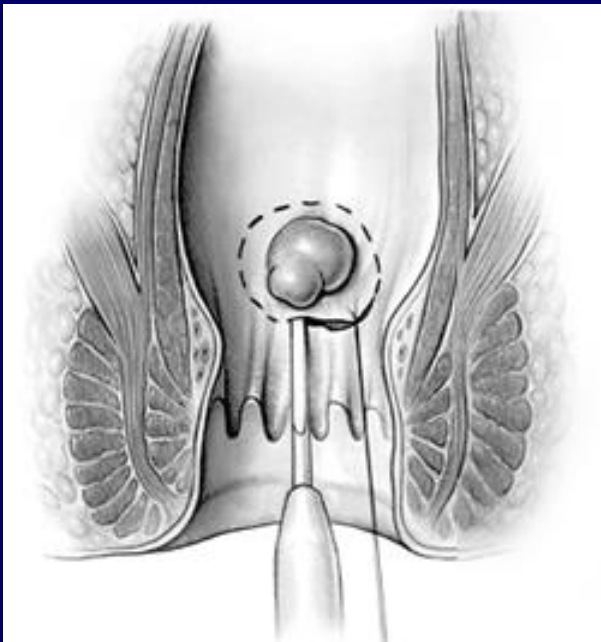
Regional Spread of Rectal Cancer



Preoperative Staging of Rectal Cancer

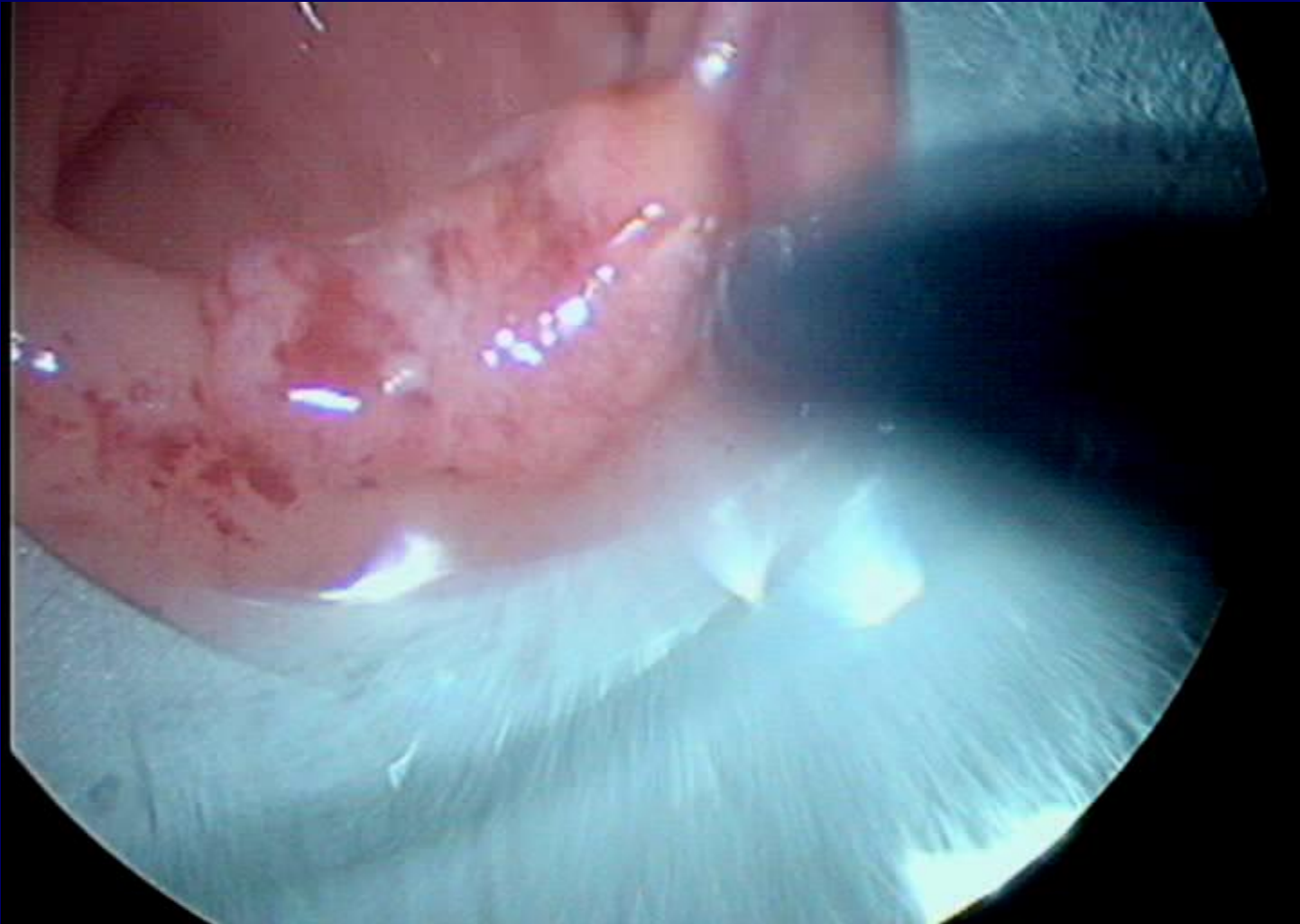
- Taking all available modalities (ERUS, MRI, PET/CT and DRE) into consideration, we are at best 85% accurate. In essence, 15% of patients presenting for rectal cancer management may be over or under treated.

Local Excision for Rectal Cancer



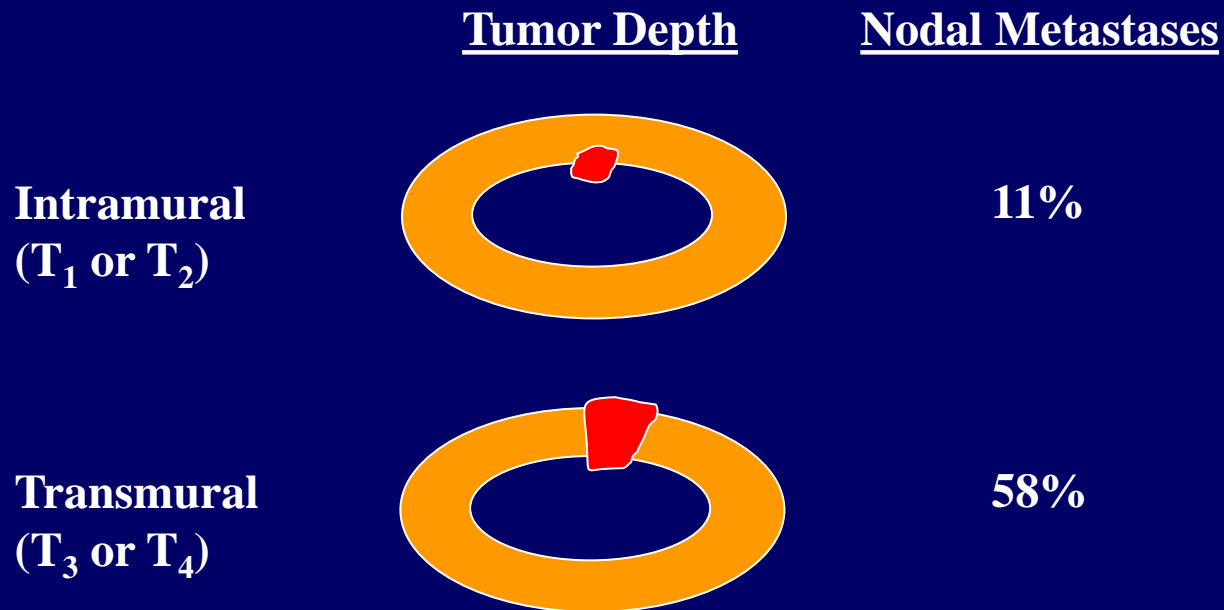
- Low morbidity
 - No colostomy
 - Excellent functional results
-
- Unknown regional LN status
 - Adequate cancer treatment?
 - T1 without “bad features”

Video



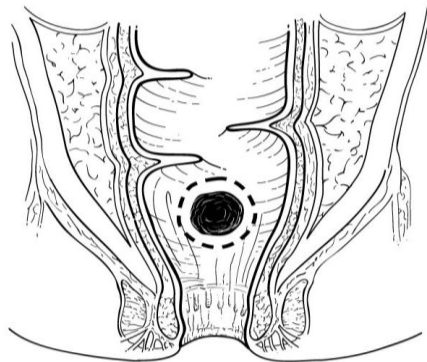


Regional Spread of Rectal Cancer

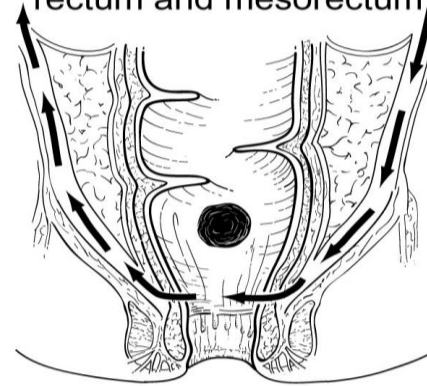


Rectal Cancer Basic Surgical Options

Local Excision

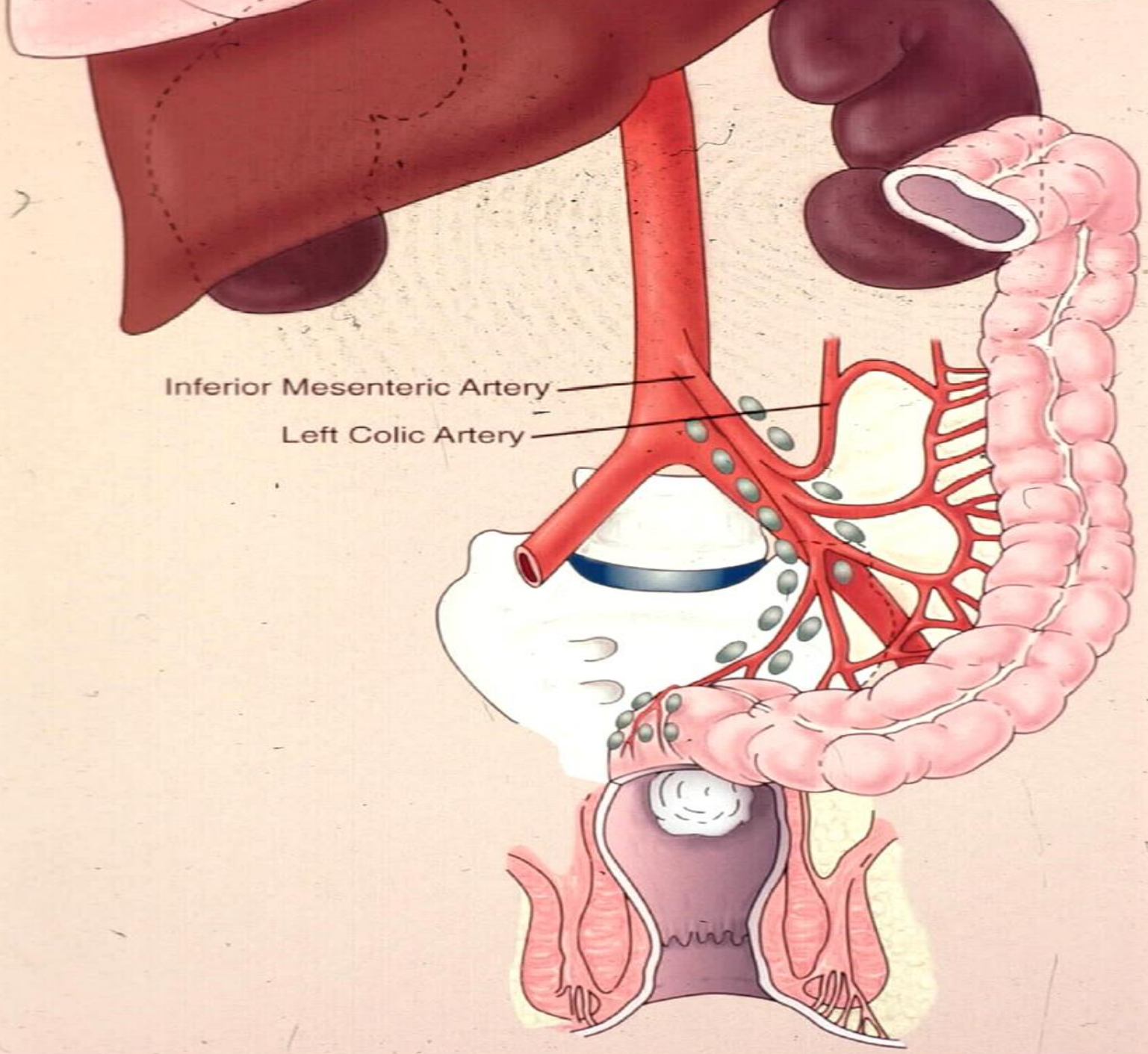


Resection of rectum and mesorectum

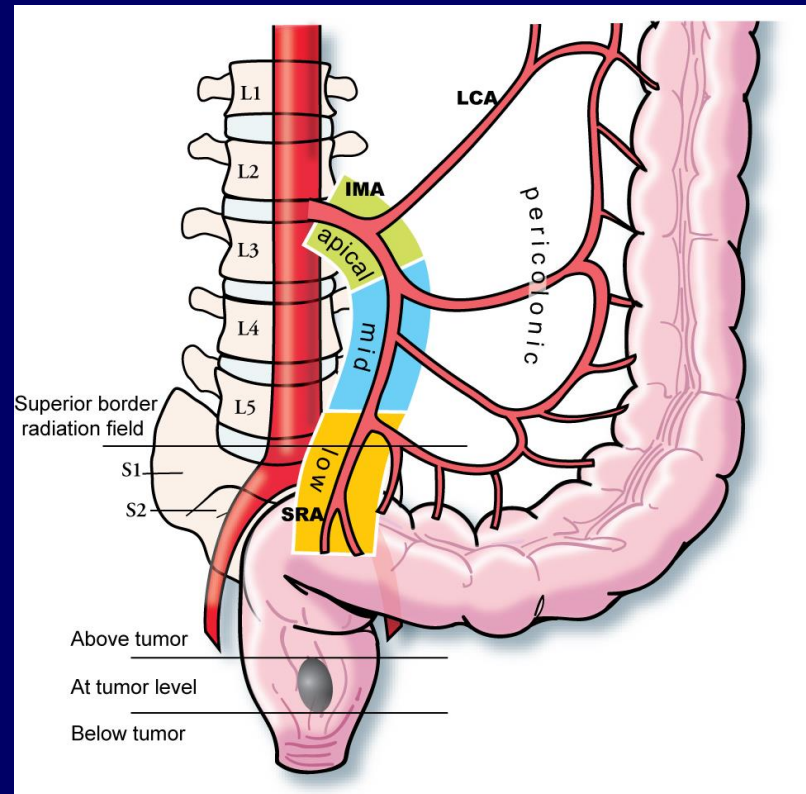


Inferior Mesenteric Artery

Left Colic Artery



Lymph Node Regions



Im:1/9
Cor P39.1

12/16/97
17:53

ET:16

R
8
0

L
8
0

FSE
TR:5000
TE:105/Ef
EC:1/1 15.6kHz

PELVIC
FOV:16x16
4.0thk/1.0sp
18/05:20
256x224/4 NEX
FCf/St:SIa/NP/VB/ED

1264 1 - 567

v ↑

x:14258
e:6/6
m:3/22
x S83.7

65 M 998252
12/16/97
16:38

T:12

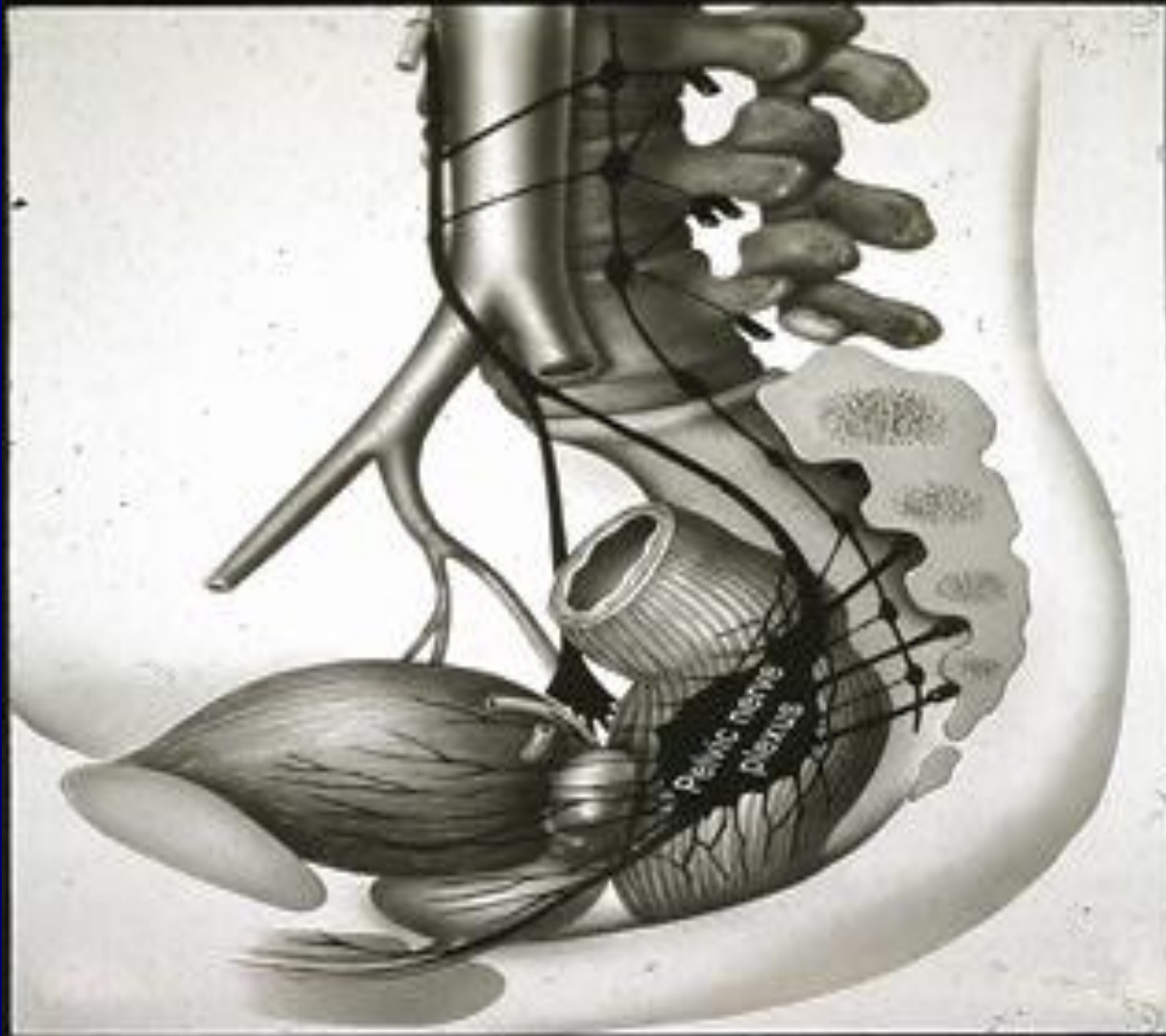
L
8
0

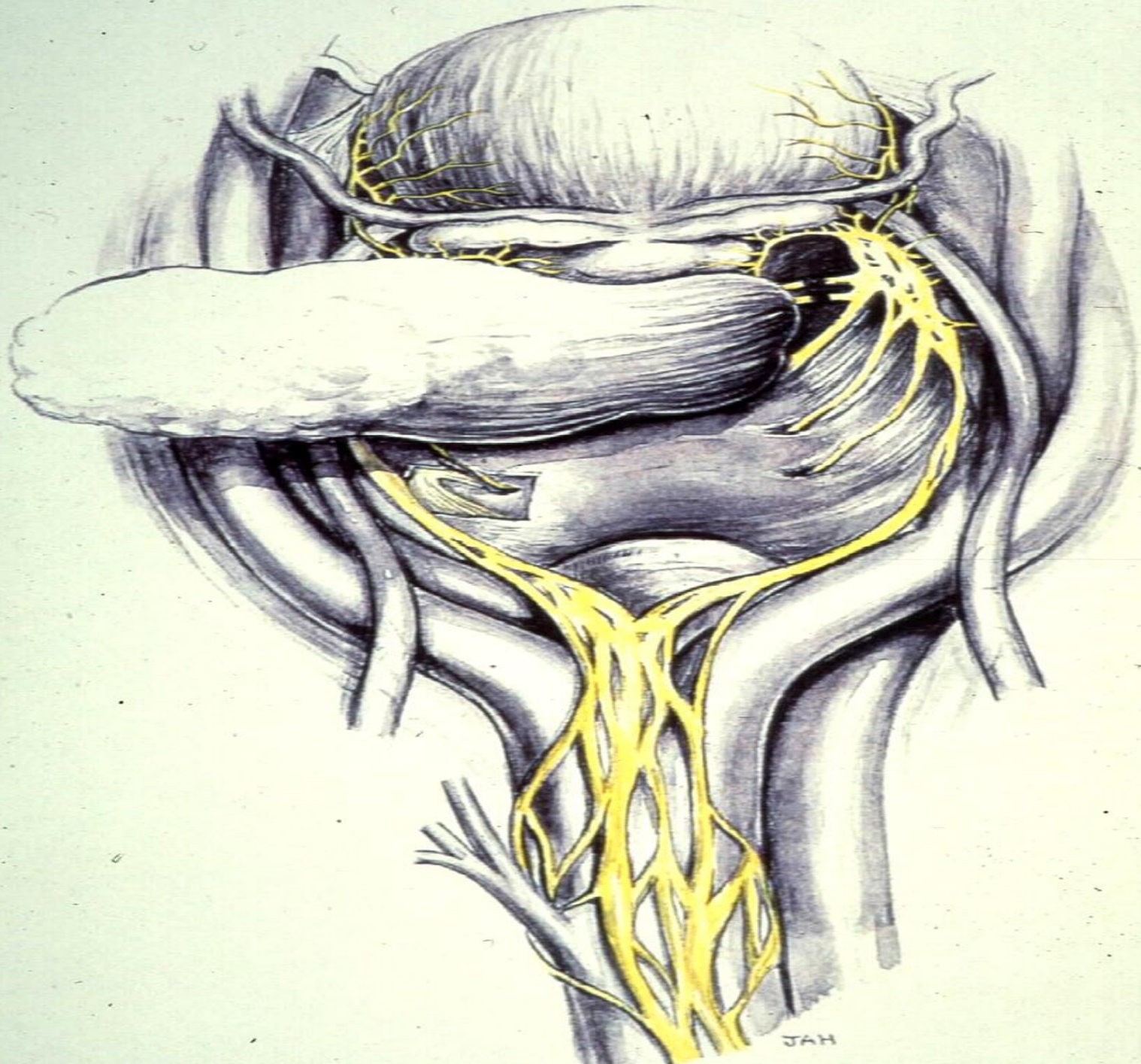
SE
R:5000
E:105/Ef
C:1/1 15.6kHz

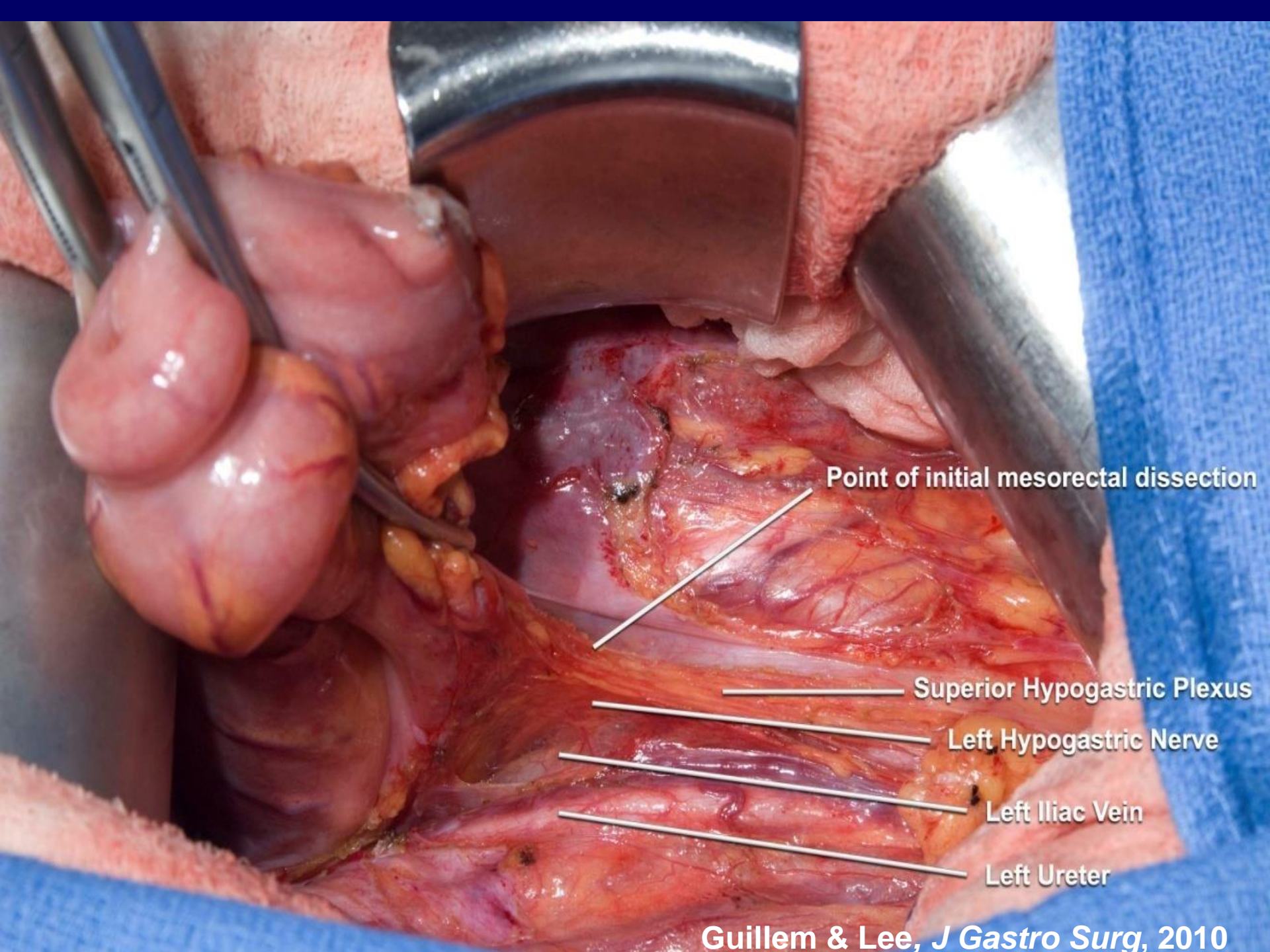
PELVIC
FOV:14x14
1.0thk/1.0sp
2/06:59
256x224/4 NEX
:Ce/St:STa/NP/VR/ED/SPF

v ↑

Relationship of Rectum to Pelvic Nerves







Point of initial mesorectal dissection

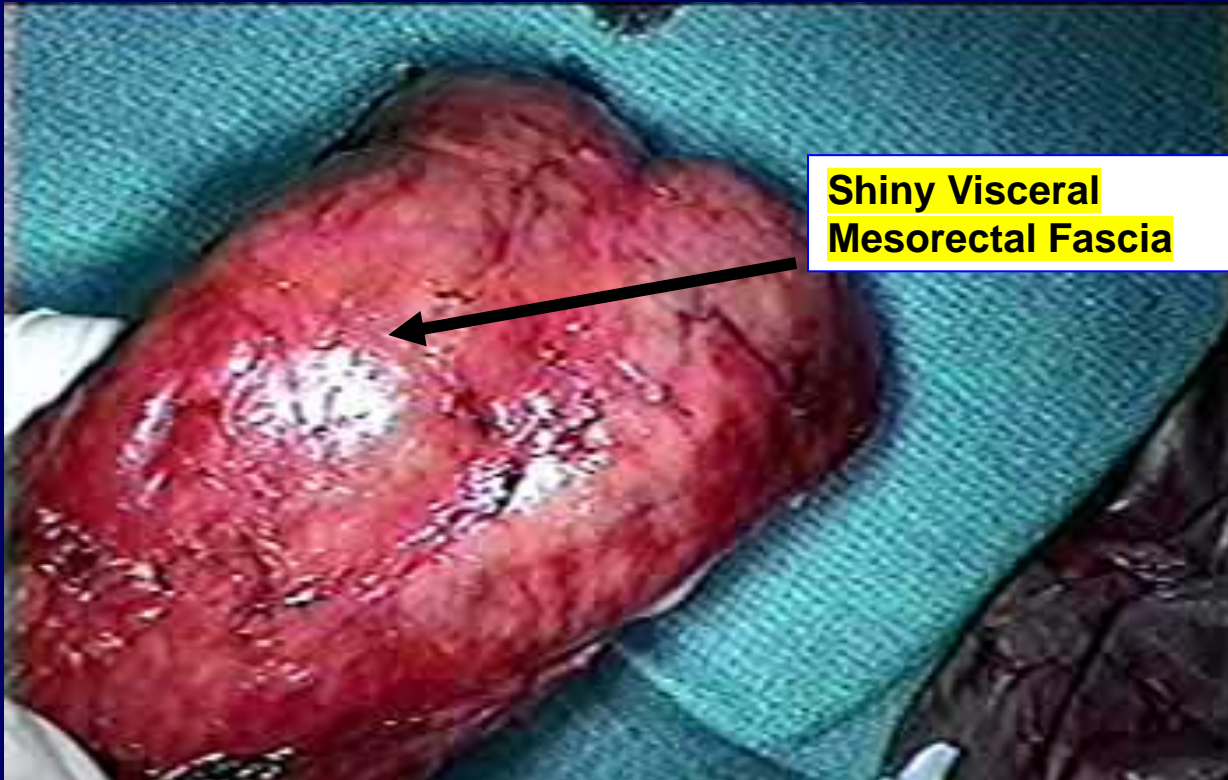
Superior Hypogastric Plexus

Left Hypogastric Nerve

Left Iliac Vein

Left Ureter

LAR Specimen Assessment



b281

Quality of Mesorectal Excision



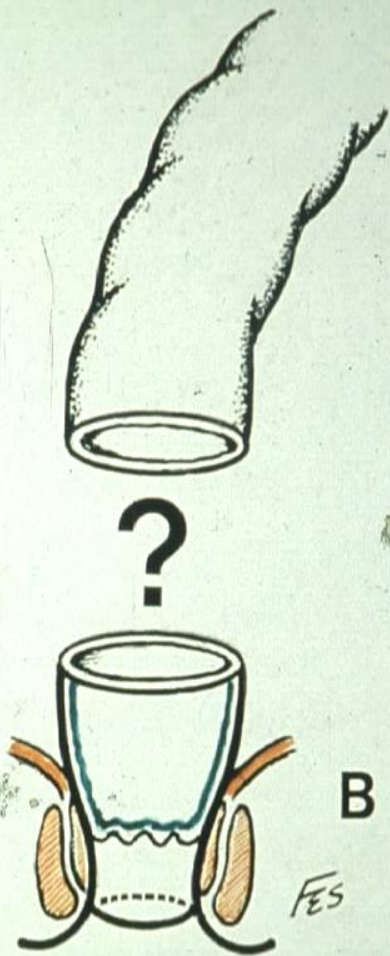
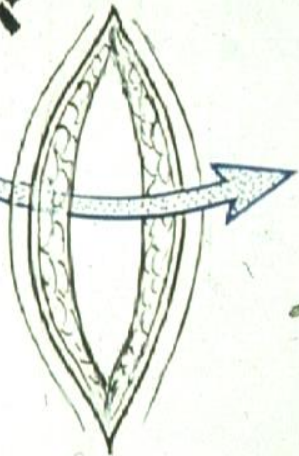
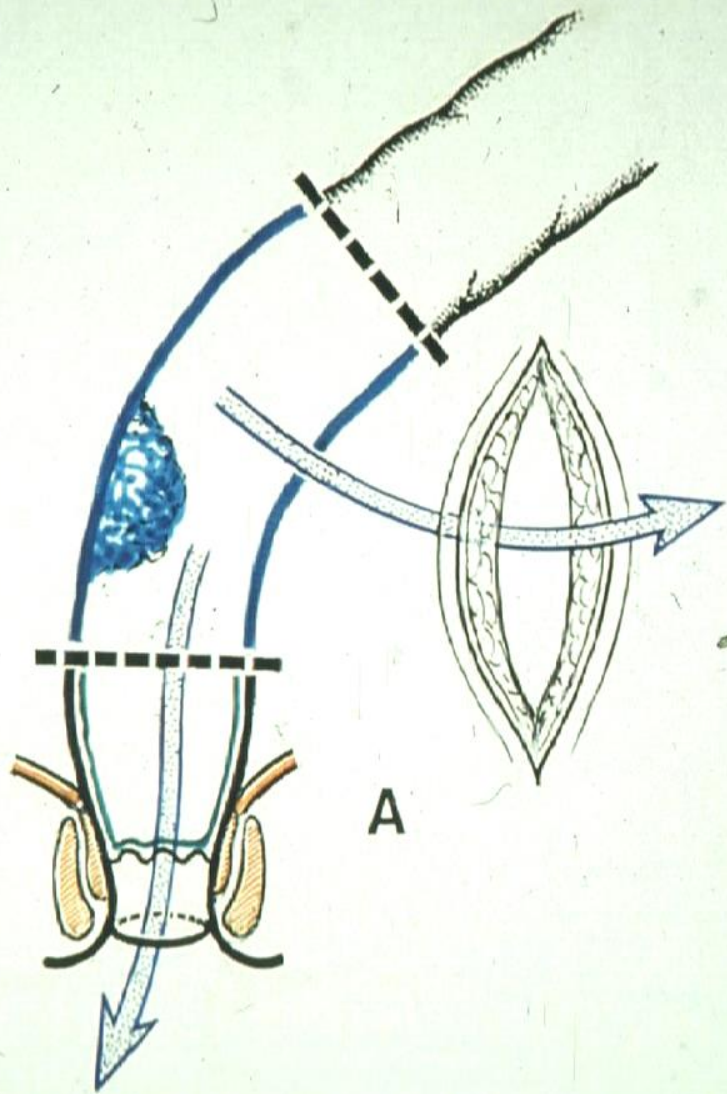
Complete



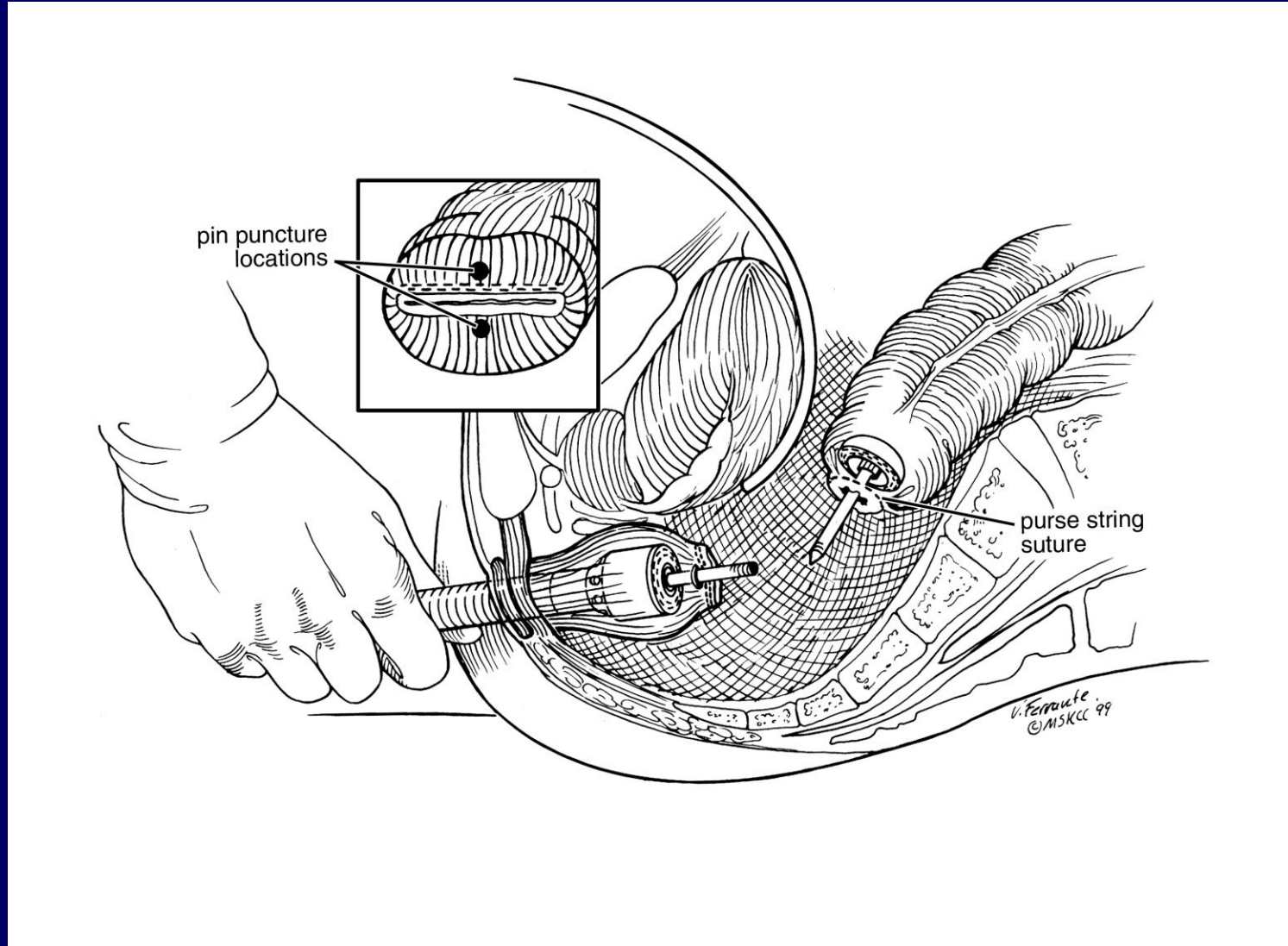
Near Complete



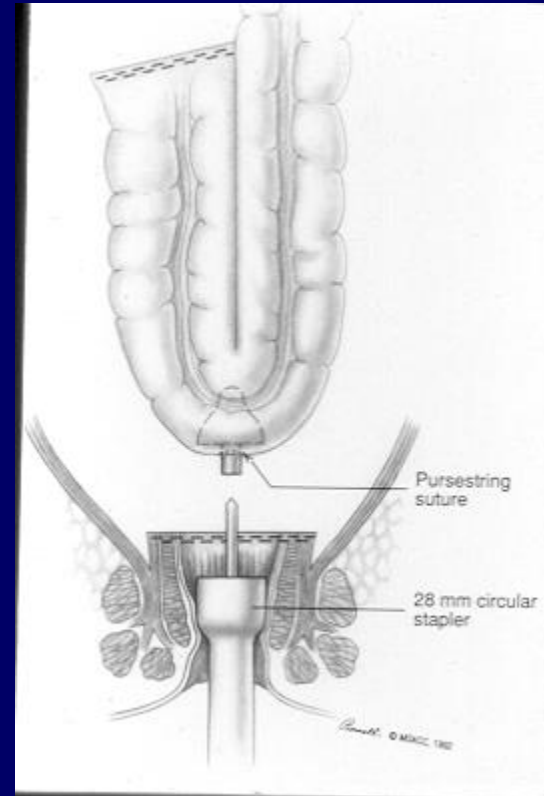
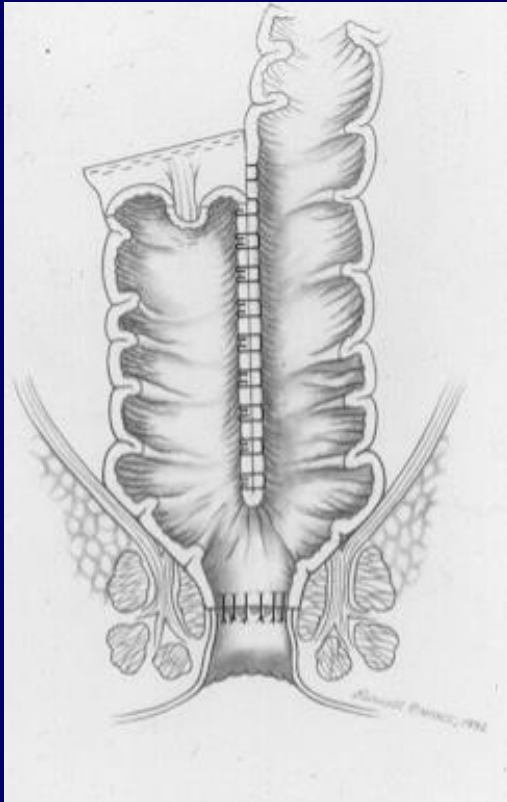
Incomplete



LAR using “Double Staple” Technique

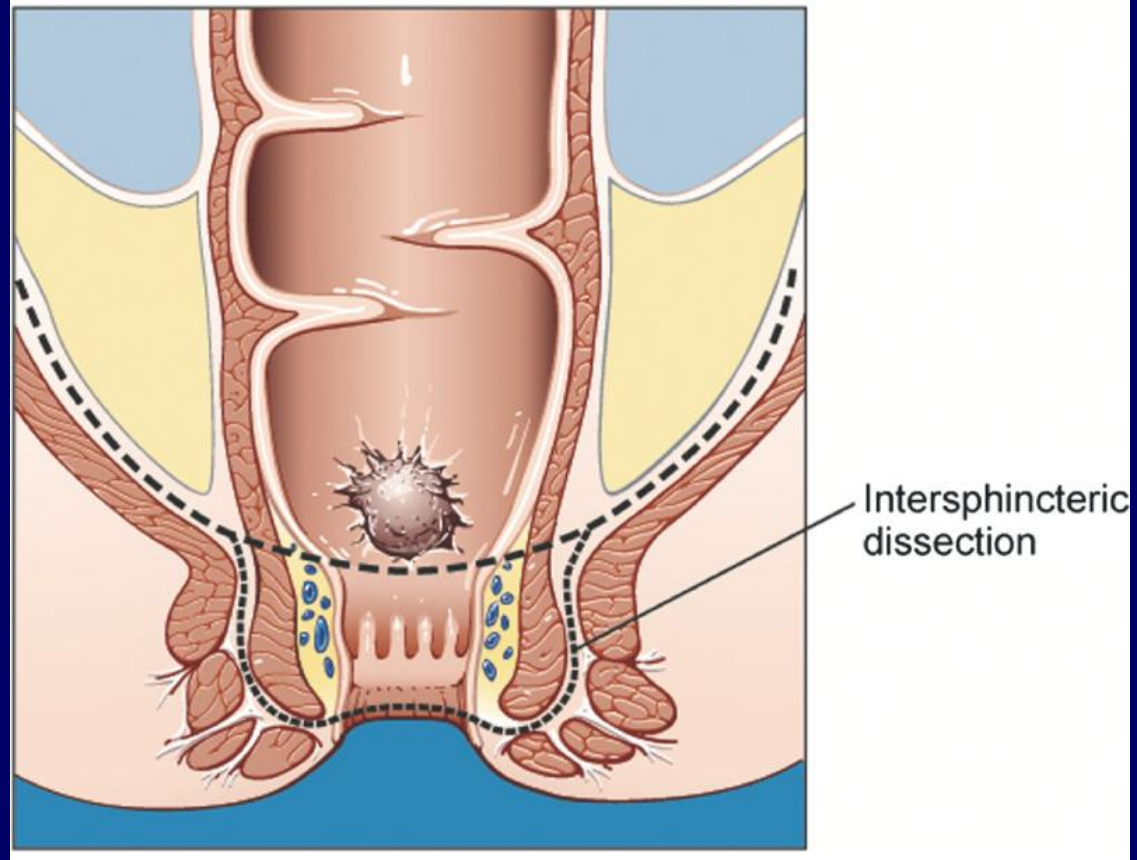


Colon J-Pouch

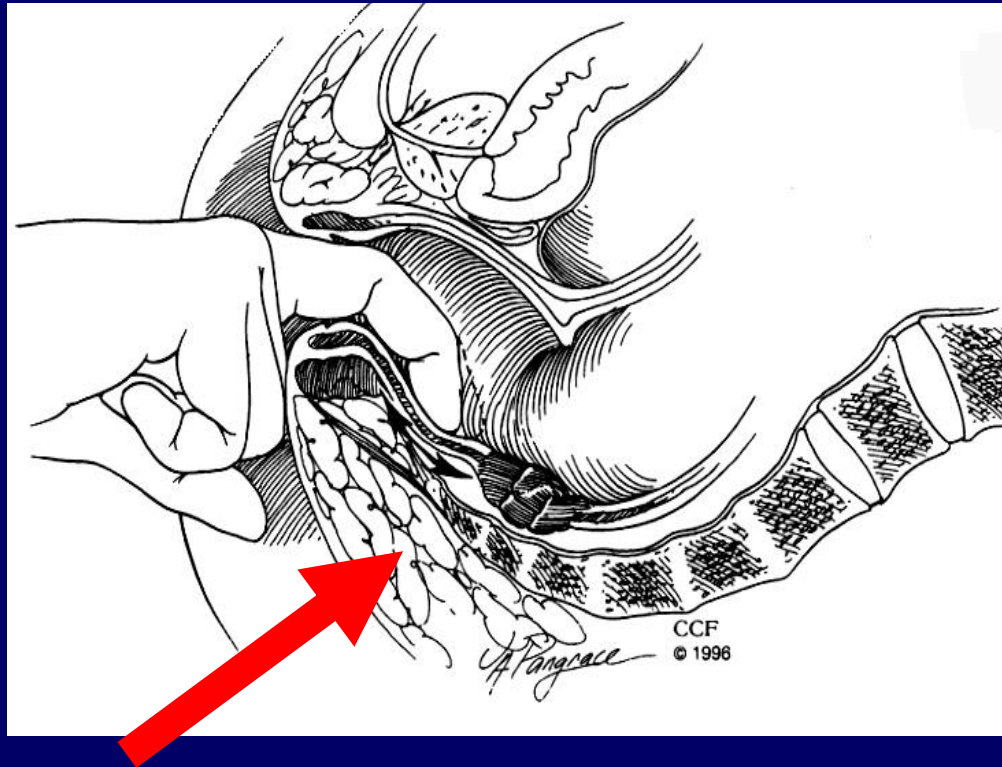


Ultralow Low Anterior Resection/CAA with Intersphincteric Dissection

1. We need less distal margin than we once thought
2. Internal sphincter is an extension of the rectal wall

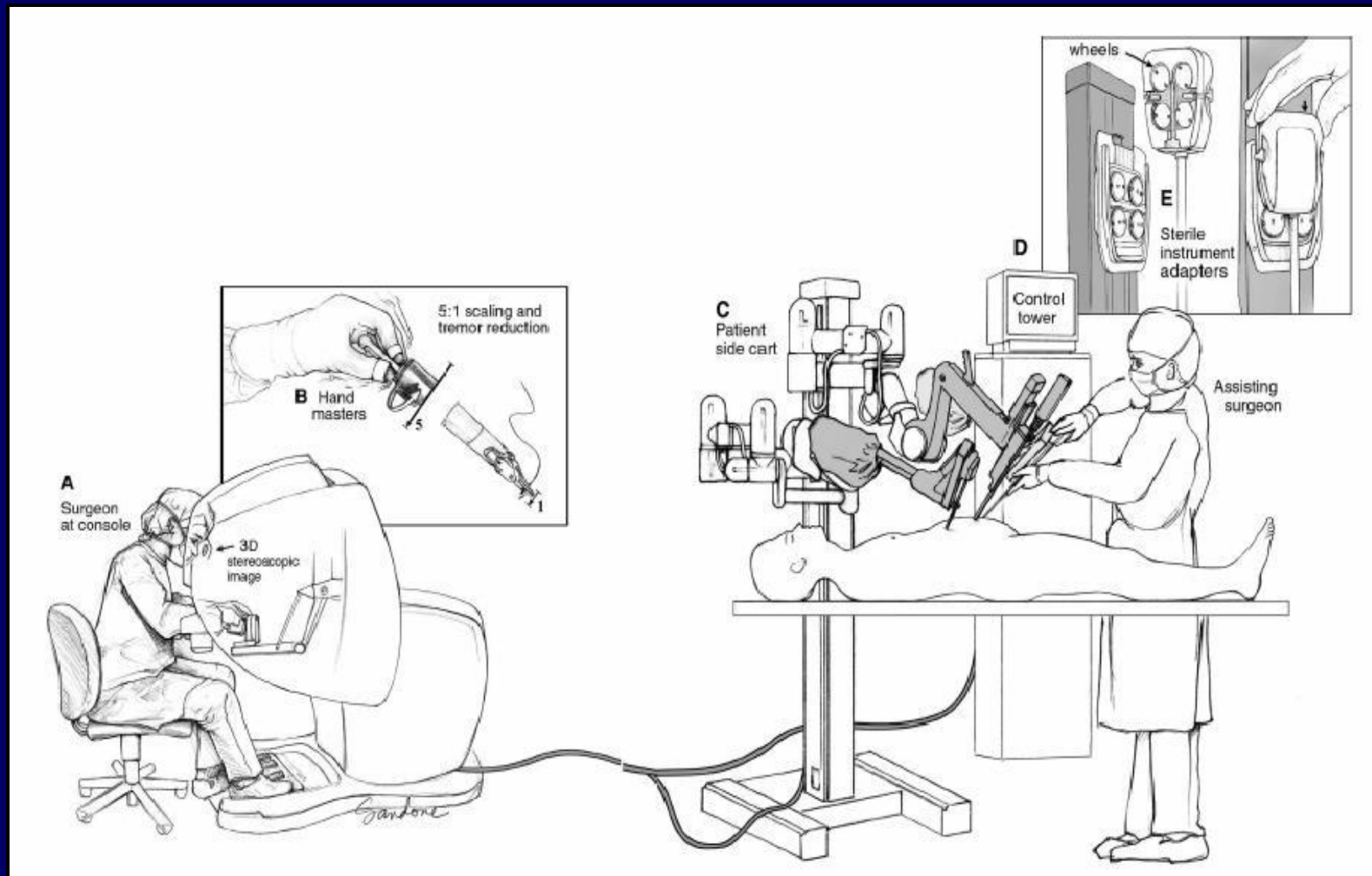


Sphincter Preservation ?



Contraindication: External sphincter involvement

Robotic Surgery

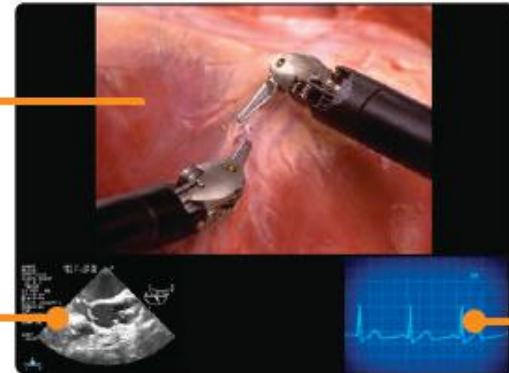


Robotic Platform



Surgical image

TilePro
Input 1



TilePro
Input 2

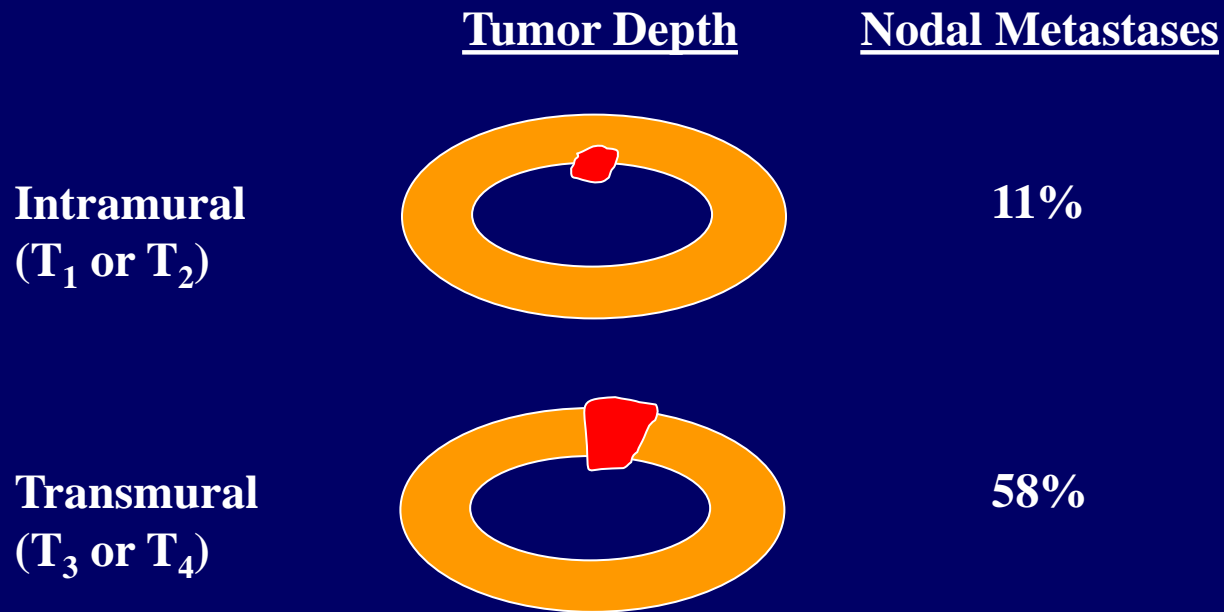
Robotic, Laparoscopic-Assisted Low Anterior Resection

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Maria S. Kammire, BS

Total Abdominal Colectomy and IRA



Regional Spread of Rectal Cancer



Indications for Adjuvant Therapy

- **NIH Consensus Conference (1990)**
*PostopAdjuvant radiation and chemotherapy
for Stage II-III rectal cancer*
- **Preoperative chemoradiation (CRT)**
*For locally advanced rectal cancer
(ERUS/MRI T3-4 and/or N1-2, bulky lesions)*

Rectal Cancer Response to Preop ChemoRT

ERUS \geq
T3 and/or
N1

Preop
CMT

Partial Response



~80%

Complete Response



~20%

Watch and Wait, Non-Operative approach

- Pathologic complete response (pCR) to neo-adjuvant treatment occurs in 10-44%
- Oncologic outcome for pCR patients is markedly better.
- Is surgical resection necessary for patients with complete clinical response (cCR)?



Habra-Gamma et al, Ann Surg 2004

Guillem et al, Ann Surg 2007

Maas et al, Lancet Oncol 2010

Garcia-Aguilar et al, Ann Surg Oncol. 2012

Rationale for W and W

Since patients with a complete pathological response have such a favorable outcome following a resection, can these patients be managed successfully without surgery so as to spare them the perioperative and long-term morbidity of rectal resection?

Challenge with W and W

- cCR does not = pCR
- Durability of cCR in individual patient is uncertain
- Lack of sustained response leads to regrowth
- Regrowth requires a delayed TME
- Delayed TME increases morbidity
- Regrowth ? association with increase metastases.

Quality of life with “Non-Operative” approach?

Painstaking q4 month follow-up consisting of:

- Sigmoidoscopy
- DRE
- CT scan
- MRI
- Lab work
- 2 Fleets enemas

...Not to mention the looming anxiety associated with the uncertainty of when and how you will recur....

Conclusions/Take-Away on W&W

- In carefully selected, well-informed patients committed to long-term surveillance and managed by an experienced multidisciplinary team, W&W may be a viable organ preserving option.
- Assessment of response remains a challenge.
- Local regrowth after W&W may be resected with negative margins in most cases but may compromise sphincter preservation.
- Results with W&W in near-cCR appear inferior to those noted in cCR.
- Long-term results on the relationship between local regrowth and distant mets are needed.

Conclusions

- Local excision is an option for superficial T1 rectal cancers without bad features.
- TME based resection (LAR or APR) is indicated for T2N0, T3N0 rectal cancer.
- In locally advanced (T3 and/or N1) rectal cancer, multimodality therapy including chemotherapy, radiation therapy and surgery have improved local and distant control (75%) and have been able to preserve sphincter function in 75% of cases.
- The sequence of therapy is based upon stage of disease and suitability of patient to tolerate multiple therapies defined by co-morbidities, baseline function, frailty, etc.
- Multimodality therapy for rectal cancer is tolerated by most patients but is associated with short- and long-term toxicities (LARS and Hand-foot Syndrome).
- The Non-Operative approach is encouraging in very highly selected cases but remains investigational.
- Long-term surveillance is a multidisciplinary approach.

Rectal Cancer Case #1

- Tailor treatment to the patient's disease, overall medical and physical state and wishes.

HPI

- 97F healthy
- PMH: none
- PSH: none
- Family history
 - Son with rectal cancer at age 54

Physical Exam

- DRE:
 - mass at 6.5cm from AV, 3cm above ARR
 - 80% circumferential
 - Tethered, not fixed
 - Anal tone $\frac{1}{4}$, anal squeeze $\frac{1}{4}$
- Flex sig:
 - Proximal aspect 11cm from AV

CT AP

Se:2
Im:92

[A]

Study Date:7/3/2013
Study Time:6:14:15 PM
MRN:



GASTRO & OMNI 300

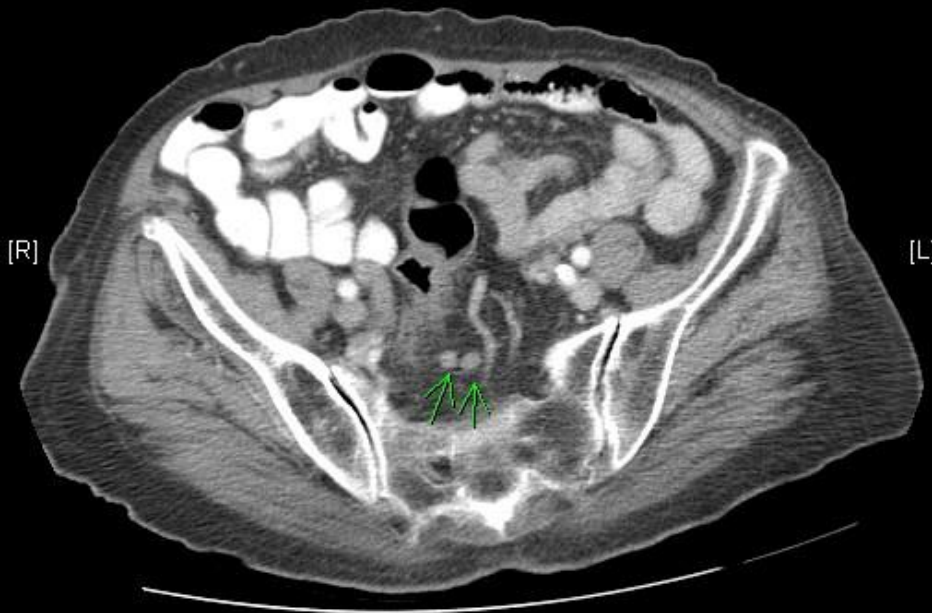
[P]

C30
W400

Se:2
Im:89

[A]

Study Date:7/3/2013
Study Time:6:14:15 PM
MRN:

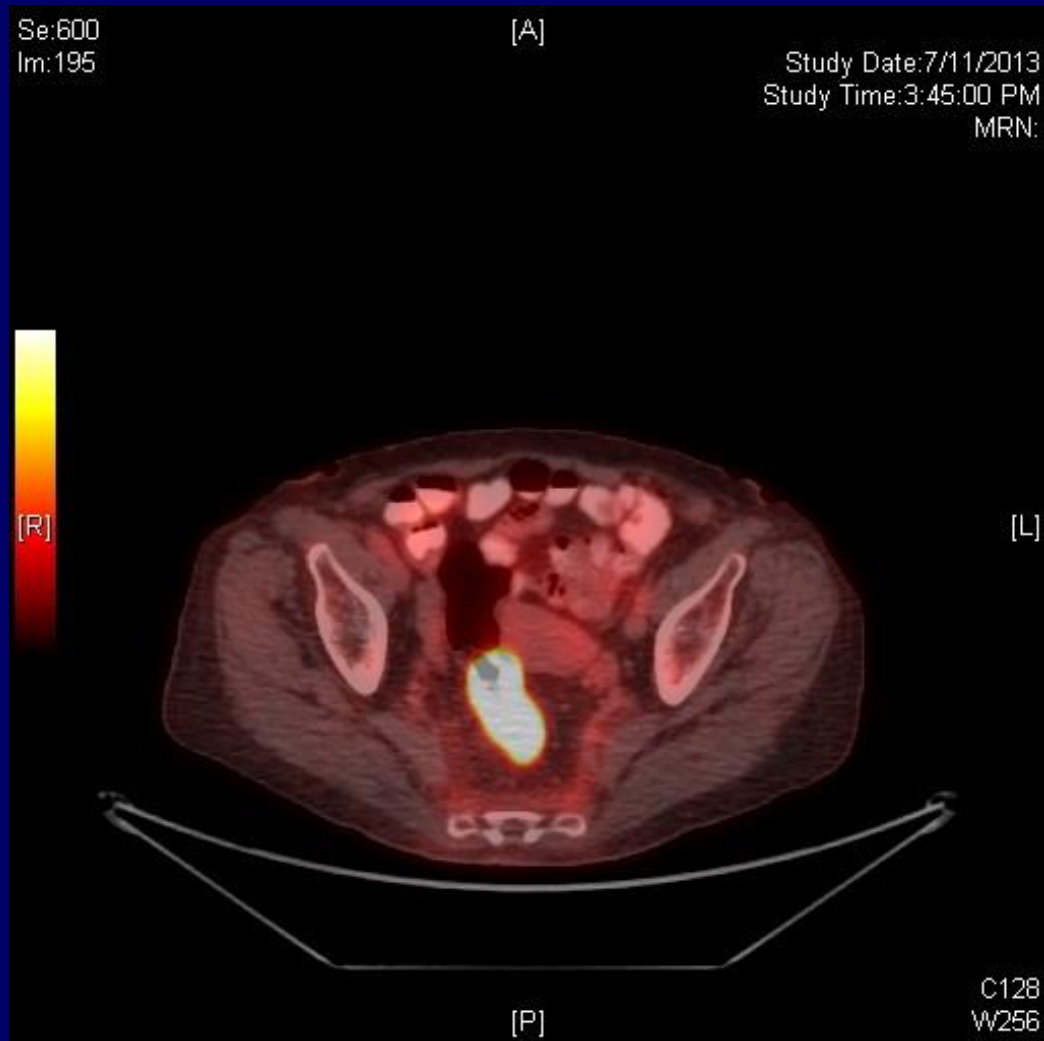


GASTRO & OMNI 300

[P]

C30
W400

PET-CT



Subcentimeter presacral and perirectal nodes, suspicious for mets despite paucity of metabolic activity.

Pathology

- LAR, PSWD, end colostomy with Hartmann's pouch
- Path:
 - Moderately differentiated adenocarcinoma
 - No LVI, no PNI
 - pT2N0
 - Surgical margins free of tumor





Rectal Cancer Case # 2

- Assessment of response is challenging and we need to recognize potential for false positives and false negatives.
- Remember the “good news, bad news” scenario.

MRI assessment of response to TNT



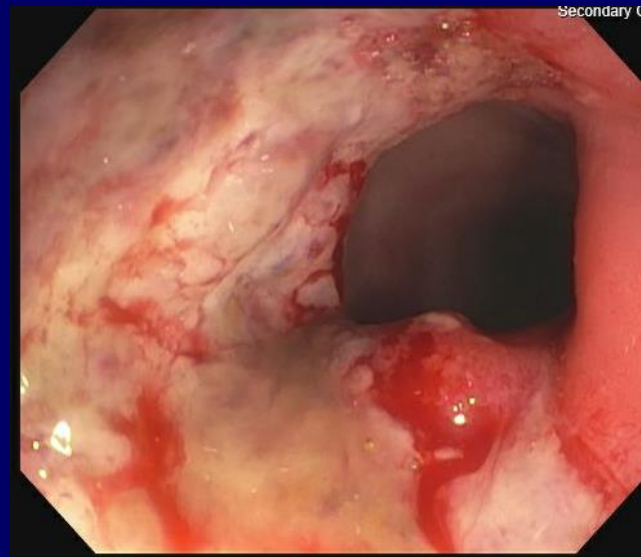
Pre-treatment MRI 2/2/18 – T3CN+



Post-treatment MRI 9/10/18 – TxN0

Flexible Sigmoidoscopy in Office (9/28/18)

Clinical examination – Persistent disease in
the posterior quadrant in MRI TxN0



Procedure (10/10/18):

Robotic Low anterior Resection, Hand sewn Colo-anal anastomosis with diverting temporary loop ileostomy .

Path Report:

Tumor Size: 3.5 cm

Treatment Effect: @ 10%

Margins: uninvolved

Distance from closest margin: 1.0 cm

Number of lymph nodes examined: 20

Primary Tumor (pT) (AJCC 8th Edition): yPT3N0

Molecular profile:

PIK3CA; TP53; MSS; 8 other investigational somatic alterations

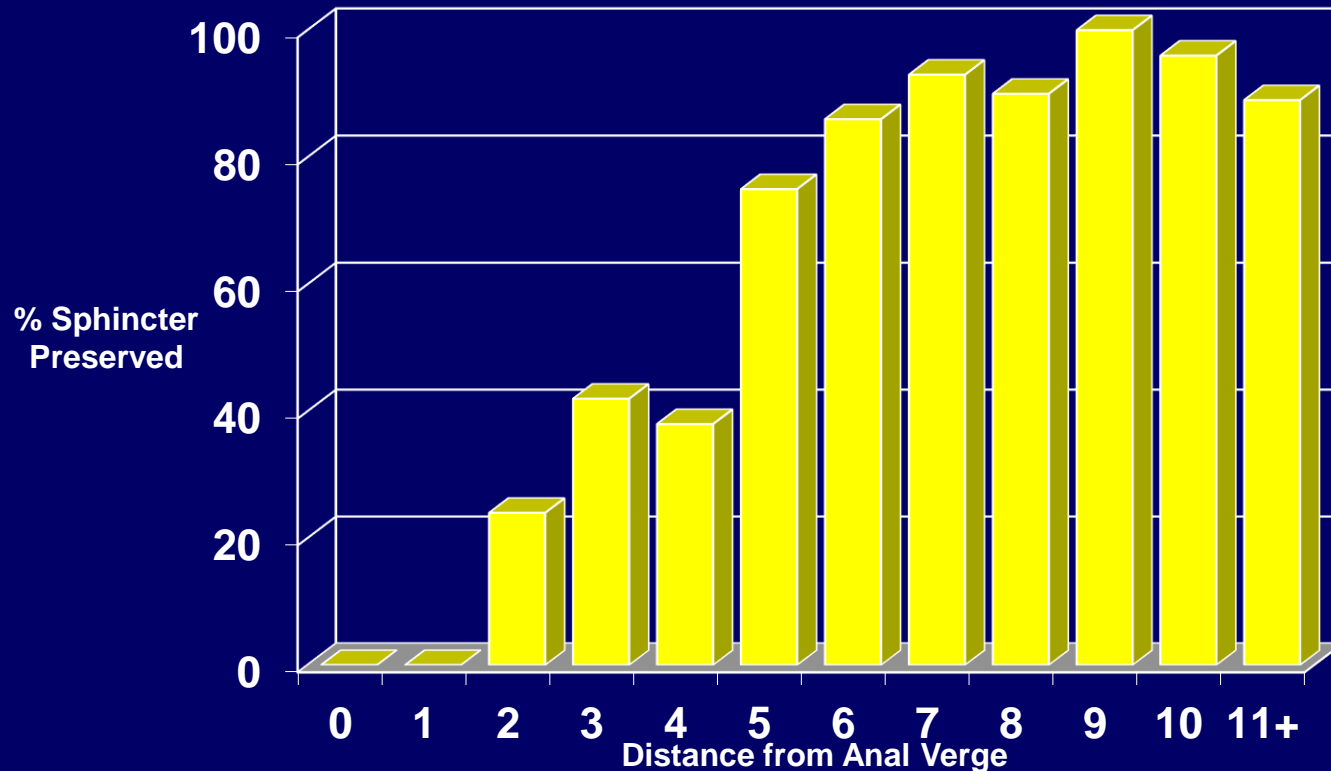
LAR Specimen (10/10/18)



Unanswered Questions in Rectal Cancer:

- How do we improve pre-therapy imaging?
- How do we improve a priori (Pre resection) identification of pCR?
- How do identify resistance early on?
- Durability of rectal CA and LNM response to preop CMT?
- Is there a persistent linear response to preop CMT and relapse-free survival?

Sphincter Preservation Rate pre "Watch and Wait" Era



As in fly fishing...“Match the Hatch”

“Match the Disease”

Should be the governing paradigm in the
management of rectal cancer

J Guillem, Ann Surg 2007