RECTAL CANCER UPDATE

Haili Wang MD MSc FRCSC

Colorectal Surgeon

University of Alberta Hospital

Endoscopy Skills Day

Banff, AB

Jan 25, 2025

New Approaches to Staging & Treatment of Rectal Cancer

Haili Wang MD MSc FRCSC

Endoscopy Skills Day, Banff AB
Jan 25, 2014

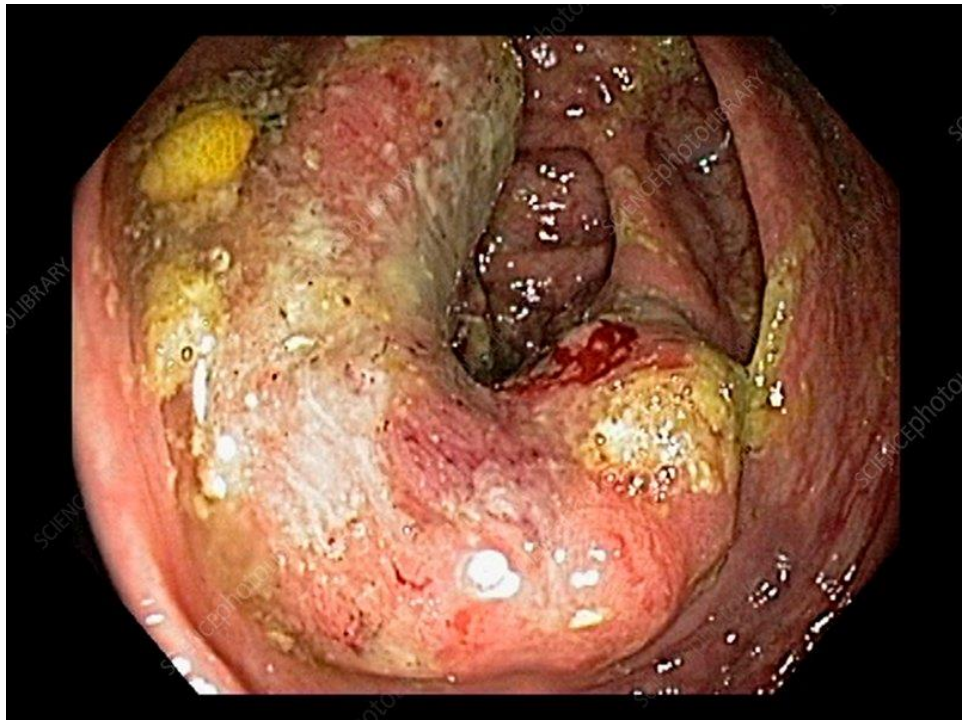
Conflict of Interest

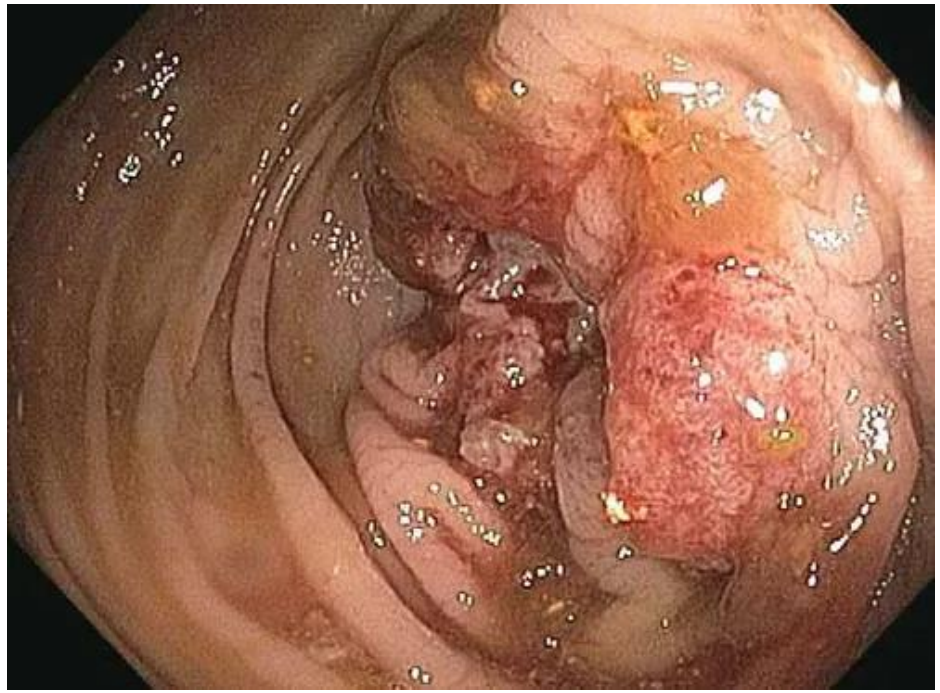
- Co-founder and shareholder of Metabolomics Technologies Inc. (MTI)

What's New..

- TNT – Induction TNT, consolidation TNT, "near-TNT"
- RAPIDO, PRODIGE, OPRA, PROSPECT
- Watch and Wait
- Immunotherapy
- Robotic surgery
- ICG

So you just found a rectal mass – now what?





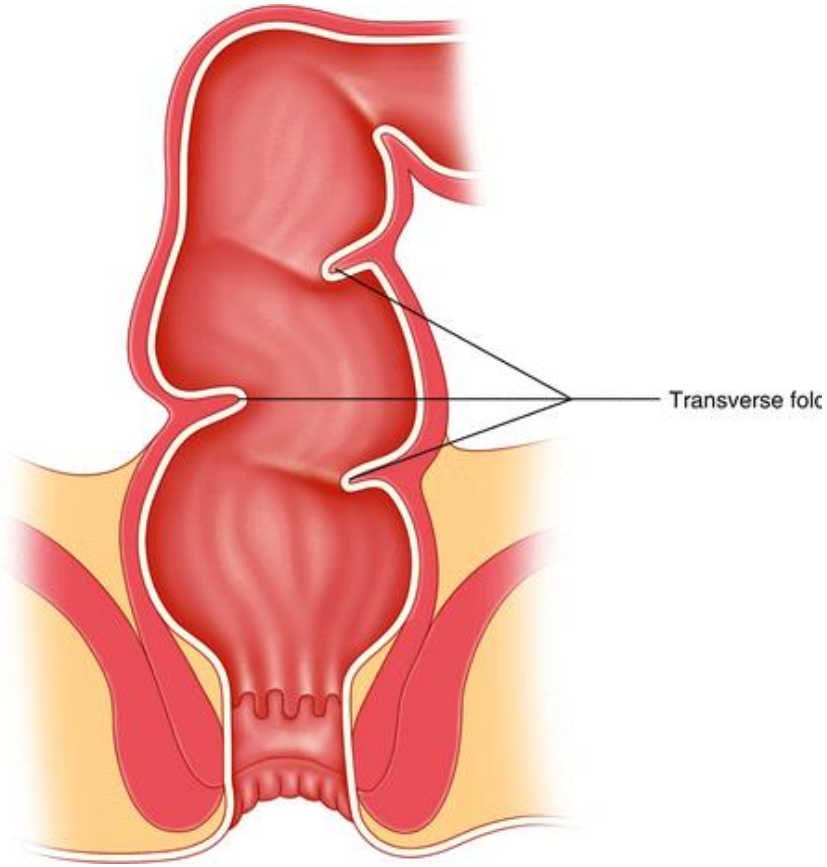
But wait, is it rectal?

What is the rectum?

- Anatomically: starts at end of sigmoid colon, where teniae coli splay and no longer distinctly identified

- Radiologically: sacral promontory

- Endoscopically??
  - If tumor distal margin is 15cm or less from anal verge
  - Have to take into account patient body habitus and sex
  - Relation to the rectal folds and sphincter

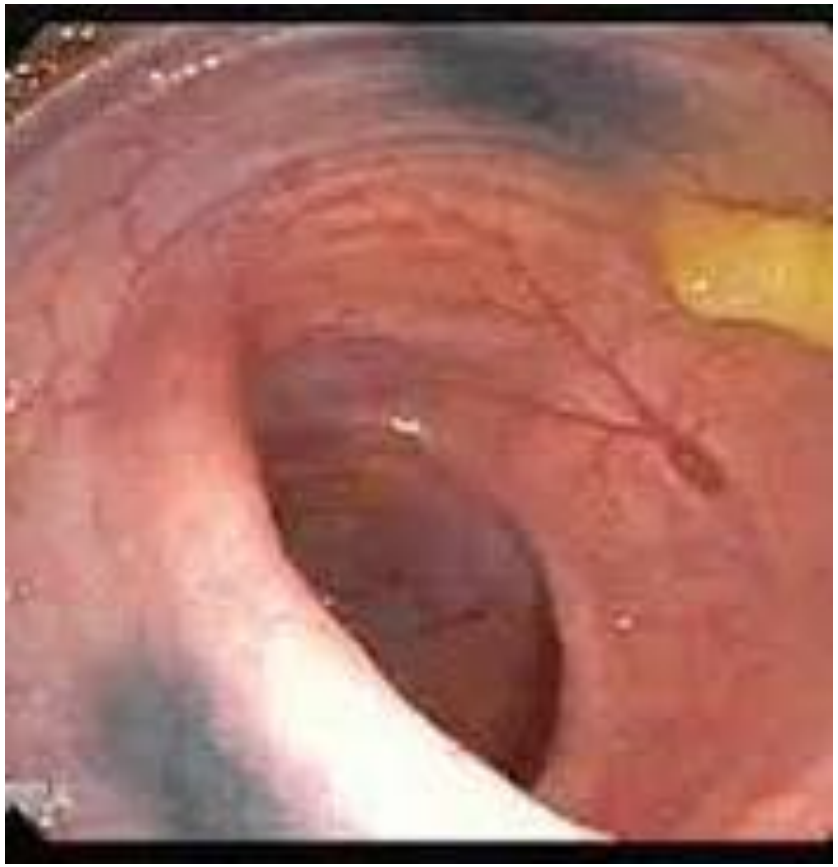


Other considerations

- Traversable?
- Bleeding?
- Synchronous lesions? Other pathology?
- Biopsy
- Tattoo

Tattoos are very important

- India ink or carbon black vs. methylene blue
- More is not better
- Distal to lesion
- Not in the lesion itself



Staging

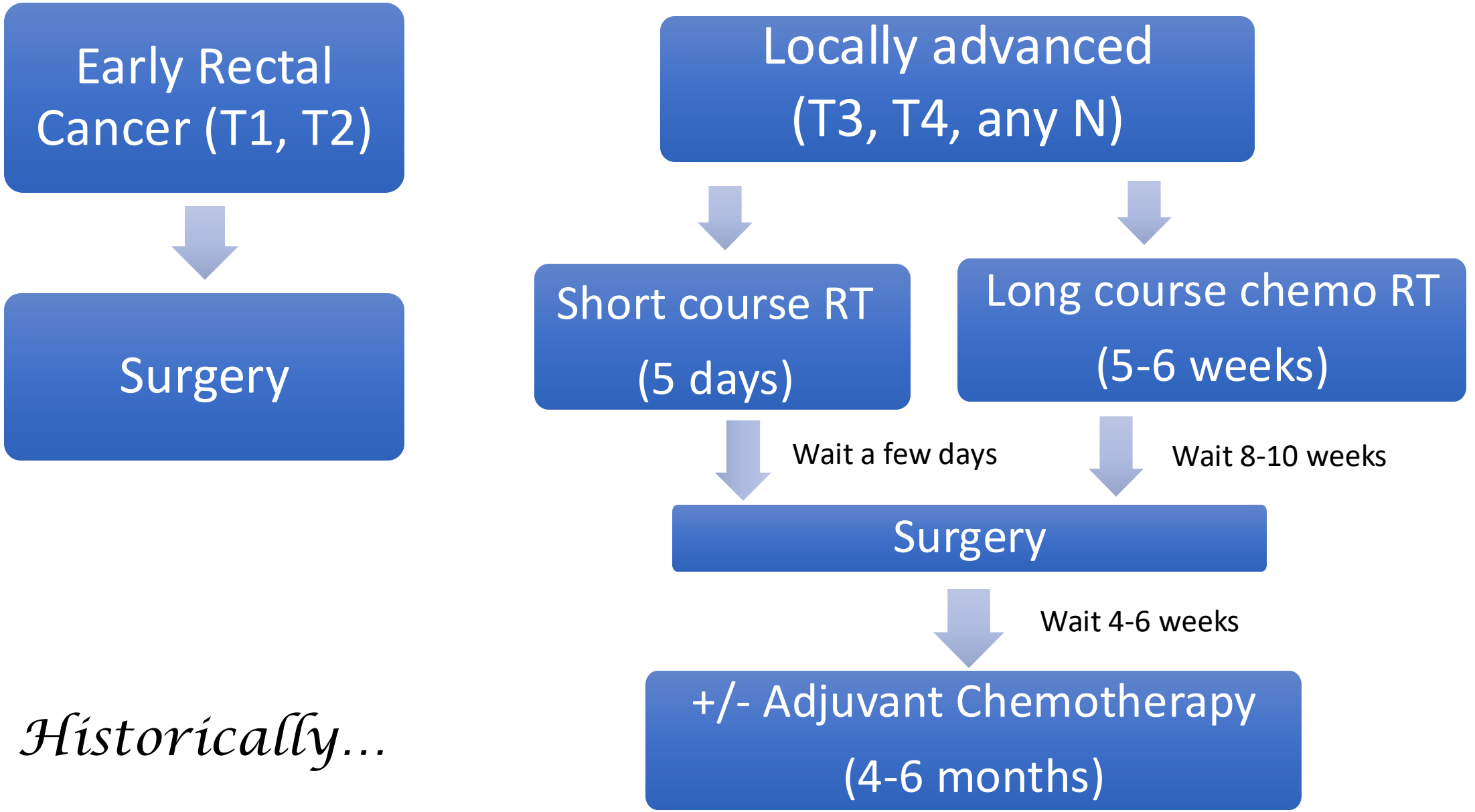
LOCAL

- EUS
  - Better for distinguishing T1 & T2 tumors
  - Operator dependent
  - Not suited for locally advanced or obstructive lesions
- MRI
  - CRM – shortest distance between rectal tumor and mesorectal fascia

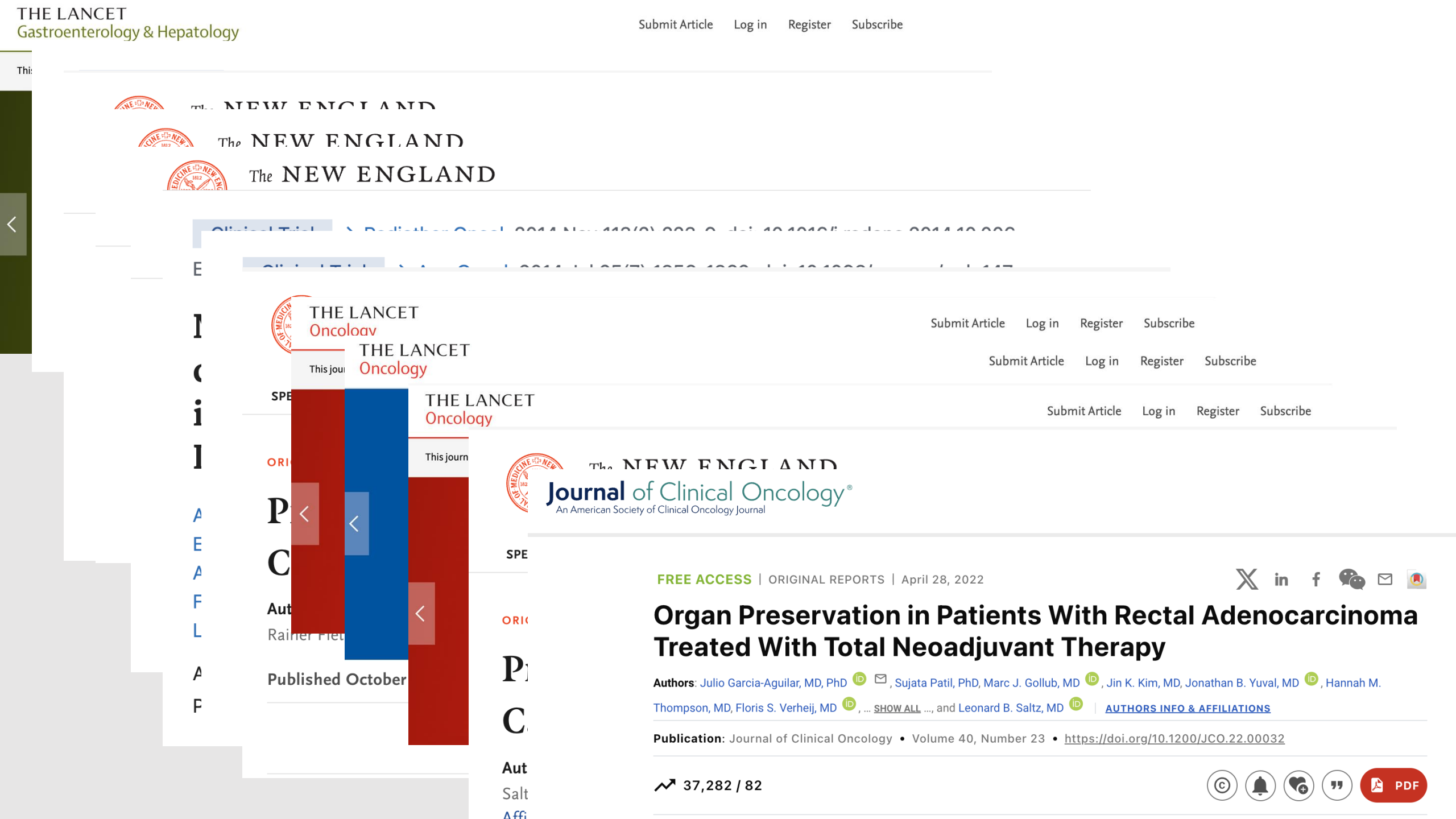
DISTANT

- CT chest/abd/pelvis

Tumour Boards



Historically…


THE LANCET
Gastroenterology & Hepatology
Submit Article
Log in
Register
Subscribe
The NEW ENGLAND
THE LANCET
Oncology
Journal of Clinical Oncology
An American Society of Clinical Oncology Journal
FREE ACCESS | ORIGINAL REPORTS | April 28, 2022
Organ Preservation in Patients With Rectal Adenocarcinoma Treated With Total Neoadjuvant Therapy
Authors: Julio Garcia-Aguilar, MD, PhD, Sujata Patil, PhD, Marc J. Gollub, MD, Jin K. Kim, MD, Jonathan B. Yuval, MD, Hannah M. Thompson, MD, Floris S. Verheij, MD, ... SHOW ALL ..., and Leonard B. Saltz, MD
AUTHORS INFO & AFFILIATIONS
Publication: Journal of Clinical Oncology • Volume 40, Number 23 • https://doi.org/10.1200/JCO.22.00032
37,282 / 82
PDF

The Original Trials

1997

Radiation is better than no radiation

2001

Post TME era
Radiation is better than no radiation

2004

ChemoRT is better given before surgery compared to after

Total Neoadjuvant Treatment (TNT)

Induction TNT

- Systemic chemo
- Then RT
- Then Surgery

Consolidation TNT

- RT
- Then systemic chemo
- Then Surgery

Near TNT

- RT and Systemic chemo
- Then Surgery
- Then Adjuvant chemo

- Higher rate of chemo completion
- Higher pCR
- Decreased time interval to ileostomy closure

Some New Trials

- RAPIDO
- PRODIGE
- PROSPECT
- OPRA

RAPIDO (Lancet 2021)

SCRT + 6 cycles CAPOX + TME

Vs.

LCRT + TME + adjuvant chemo

- TNT with SCRT
- 5 year update
  - LR 10% vs. 6%;
  - Locoregional failure 12% vs. 8%
  - Worse surgical quality (21% vs.4% breach mesorectum)
  - OS similar

PRODIGE (Lancet Oncology 2021)

6 cycles FOLFIRINOX
+ 5 weeks chemoRT (LCRT)
+ TME
+ 3 months adjuvant chemo

Vs.

5 weeks chemoRT (LCRT)
+ TME
+ 6 months adjuvant chemo

- Near TNT with LCRT
- 3 yr DFS was 76% and 69% (HR 0.69, p=0.034)
- Recurrences from distant mets - 17% vs. 25%
- Metastasis free survival 79% vs.72%
- pCR 28% vs. 12%
- LR no diff

PROSPECT (NEJM 2023)

Neoadjuvant FOLFOX +/- CRT
(If <20% decrease in tumor size or FOLFOX d/c'd)

Vs.

5 weeks chemoRT (LCRT)
+ TME
+ 6 months adjuvant chemo

- No RADIATION!
- cT2N+, cT3N0, cT3N+; sphincter sparing surgery
- Exclusion: T4, N2,
- 5yr DFS 80.8% (FOLFOX) vs 78.6% (standard CRT)
- OS and LR similar between groups

Watch and Wait

- Complete Clinical response
- 8-12 weeks post neoadjuvant tx
- DRE, endoscopy, MRI

WW Surveillance Protocol

First 2-3 years:

- DRE and endoscopy every 3 to 4 months
- MRI every 6 months

Then

- DRE and endoscopy every 6 months
- MRI performed annually

OPRA (JCO 2022)

Induction Chemo
+ CRT

Vs.

CRT
+ consolidation chemo

- Tumor restaging 8 +/-4 wk after TNT
  - complete (WW), near-complete (WW), incomplete (TME)
- WW protocol

- 3 yr DFS was 76% in both groups (same as historical 3 yr DFS of 75%)
- Organ preserved at 3 years: 41% in *induction* and 53% in *consolidation*

OPRA (JCO 2022)

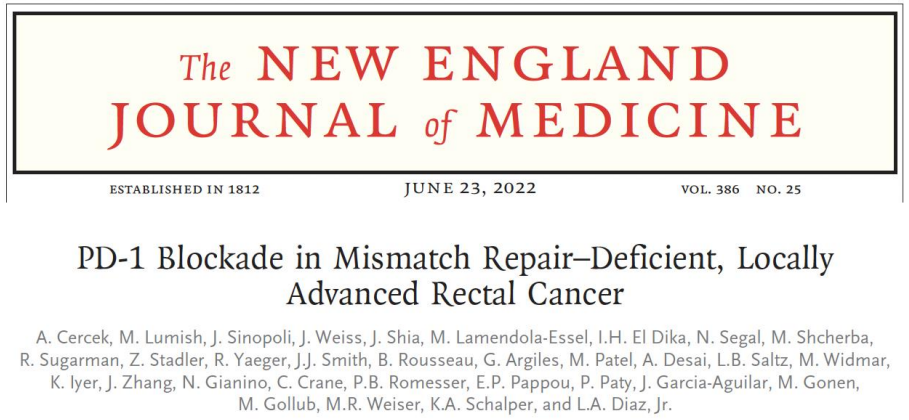
5 year results

- 34% in WW had recurrence within 5 years
  - 94% within 2 years
  - 99% within 3 years
- TME-free survival higher in consolidation (54%) vs. induction (39%)
- No diff in DFS or OS
- Patients who underwent TME upfront had no diff in DFS vs. TME after failed WW (62% vs. 61% at 5 years)

Immunotherapy

- 5-10% rectal cancers are DNA mismatch repair deficient (dMMR) and respond poorly to standard chemotherapy
  - *loss of expression of MLH1, MSH1, MSH6, and PMS2*

- **Dostarlimab (Jemperli):** a checkpoint inhibitor that targets the PD-1/PD-L1 pathway;



Surgery

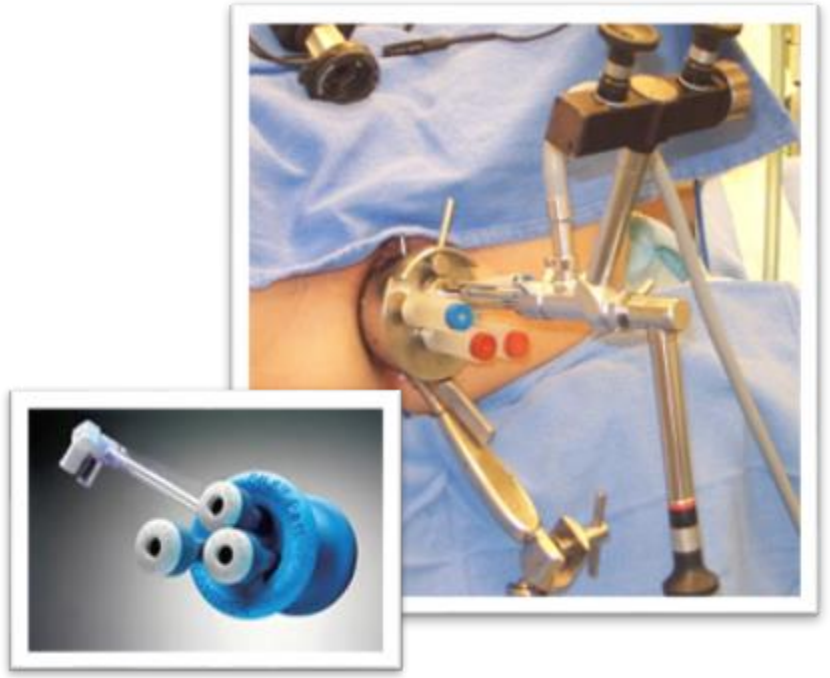
Local Excision

Transanal excision (TAE)

Trans-anal endoscopic microsurgery (TEM)

Trans-anal endoscopic operation (TEO)

Trans-anal minimally invasive surgery (TAMIS)



Local Excision of Rectal Cancer Advantages

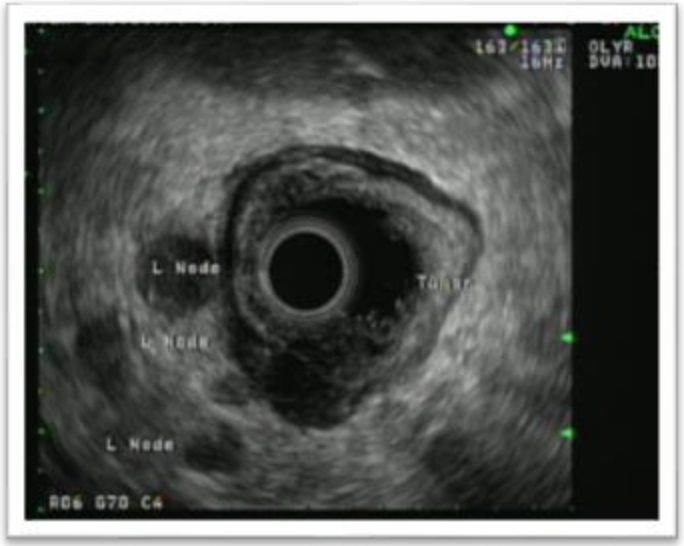
- …vs radical resection:
  - Decreased mortality and morbidity
  - Better functional outcomes (no stoma)
  - Shorter OR
  - Less blood loss
  - Decreased pain
  - Shorter hospital stay

Dr Graaf et al 2009 EJSO

Local Excision of Rectal Cancer

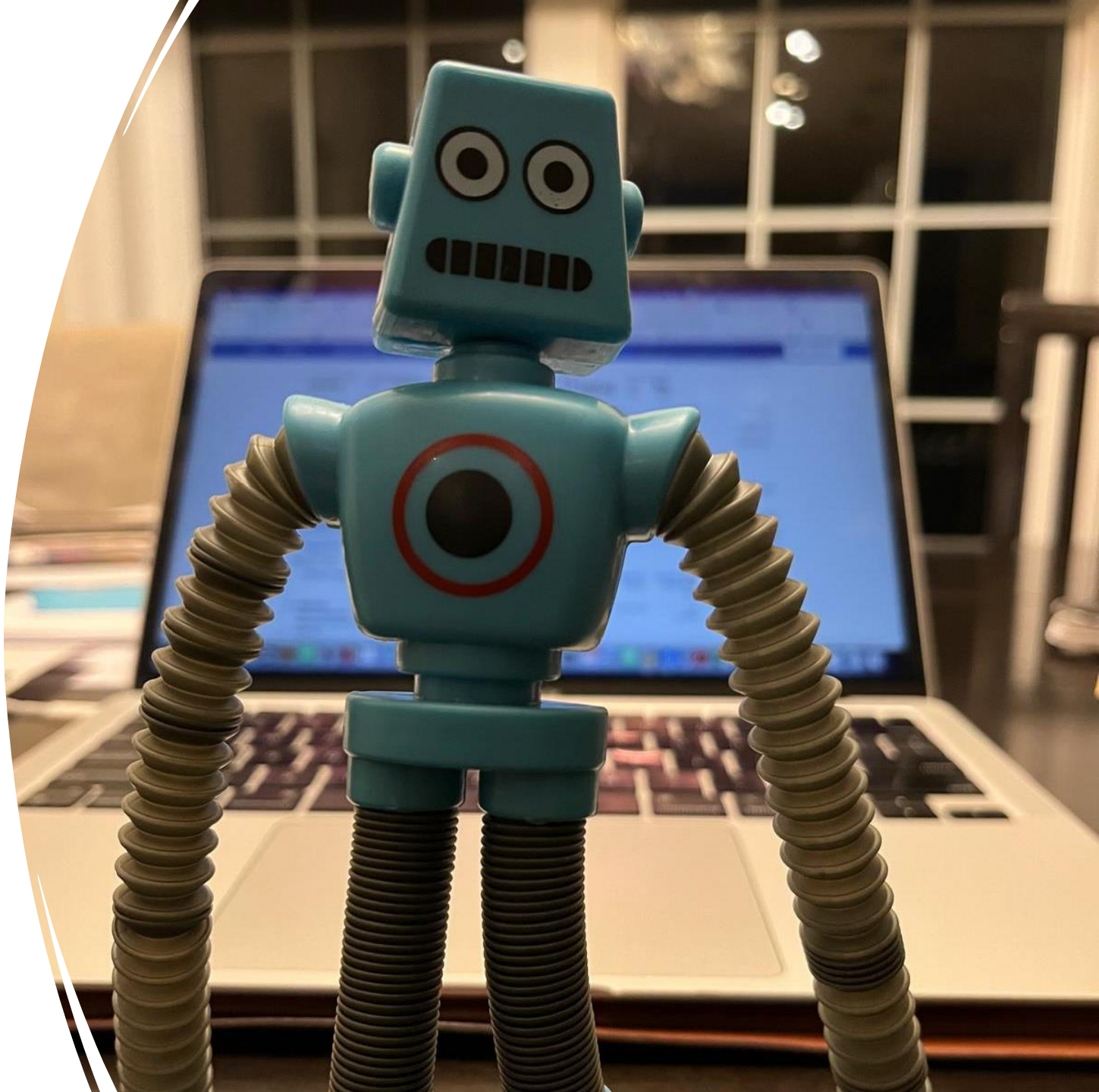
LOCAL RECURRENCE!!!

- Lymph nodes:
  - Increased risk of + N with higher T stage
  - 45% of +N <5mm
  - Poor predictability of +N on imaging



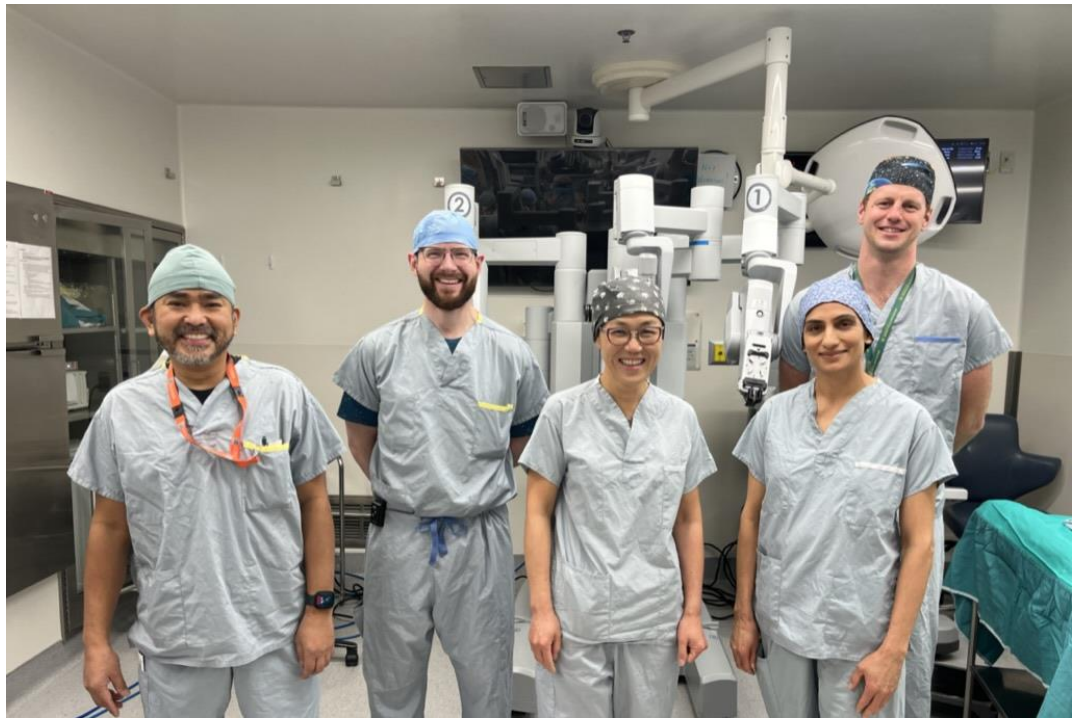
Andreola et al 2001 Ann Surg Onc

Robotic Surgery

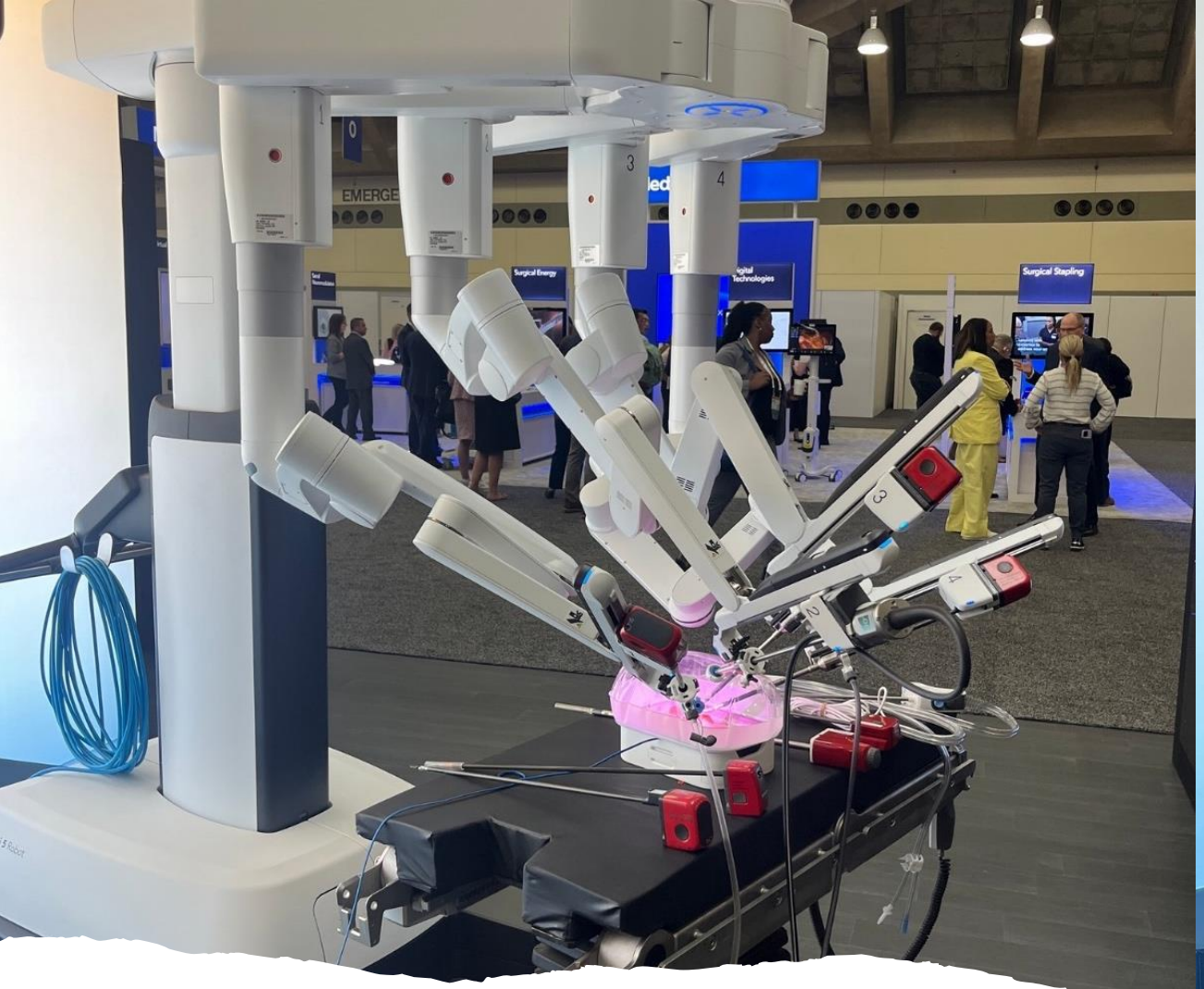


Nov 2018

Nov 2023

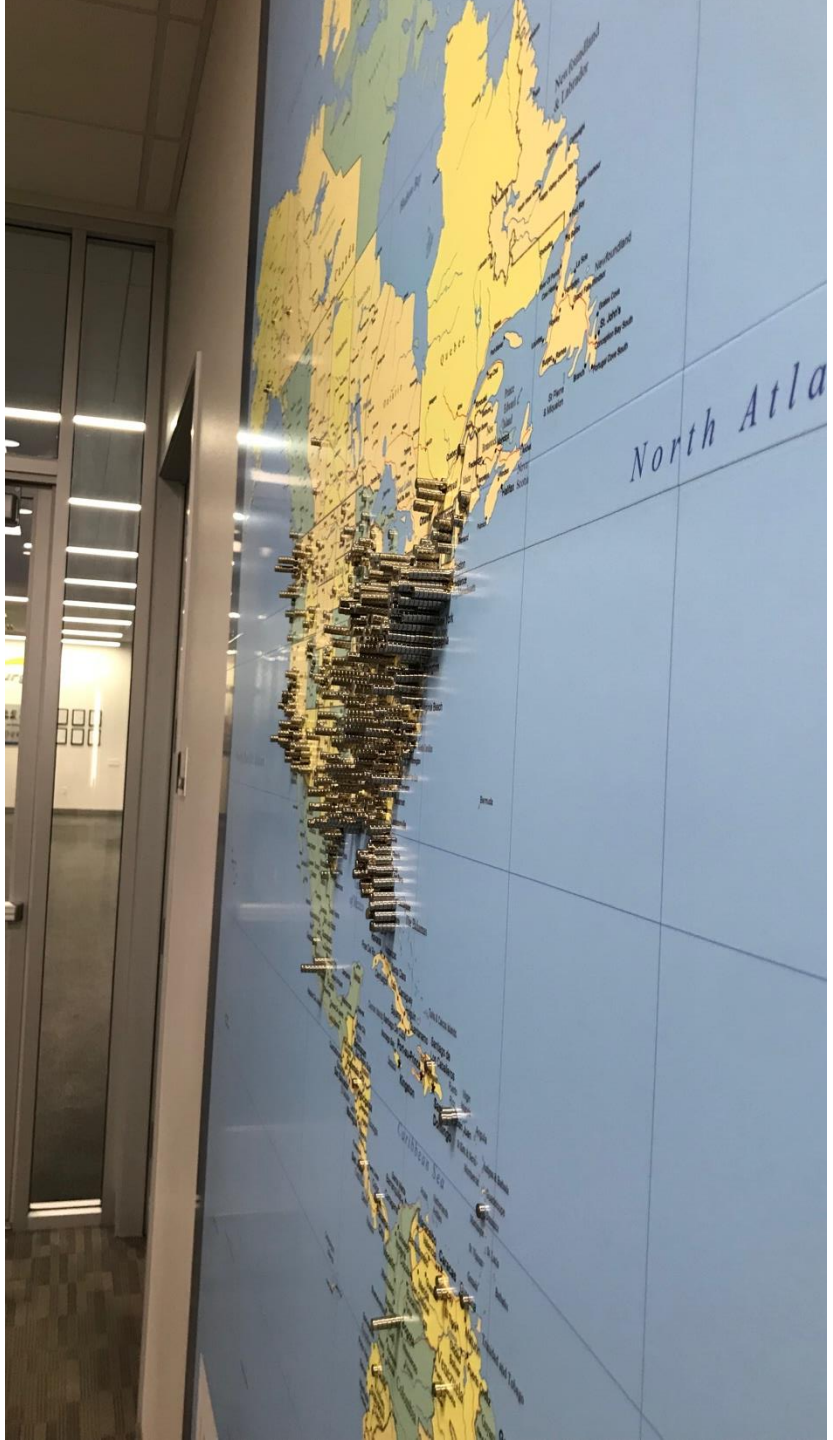


March 2024



The future…

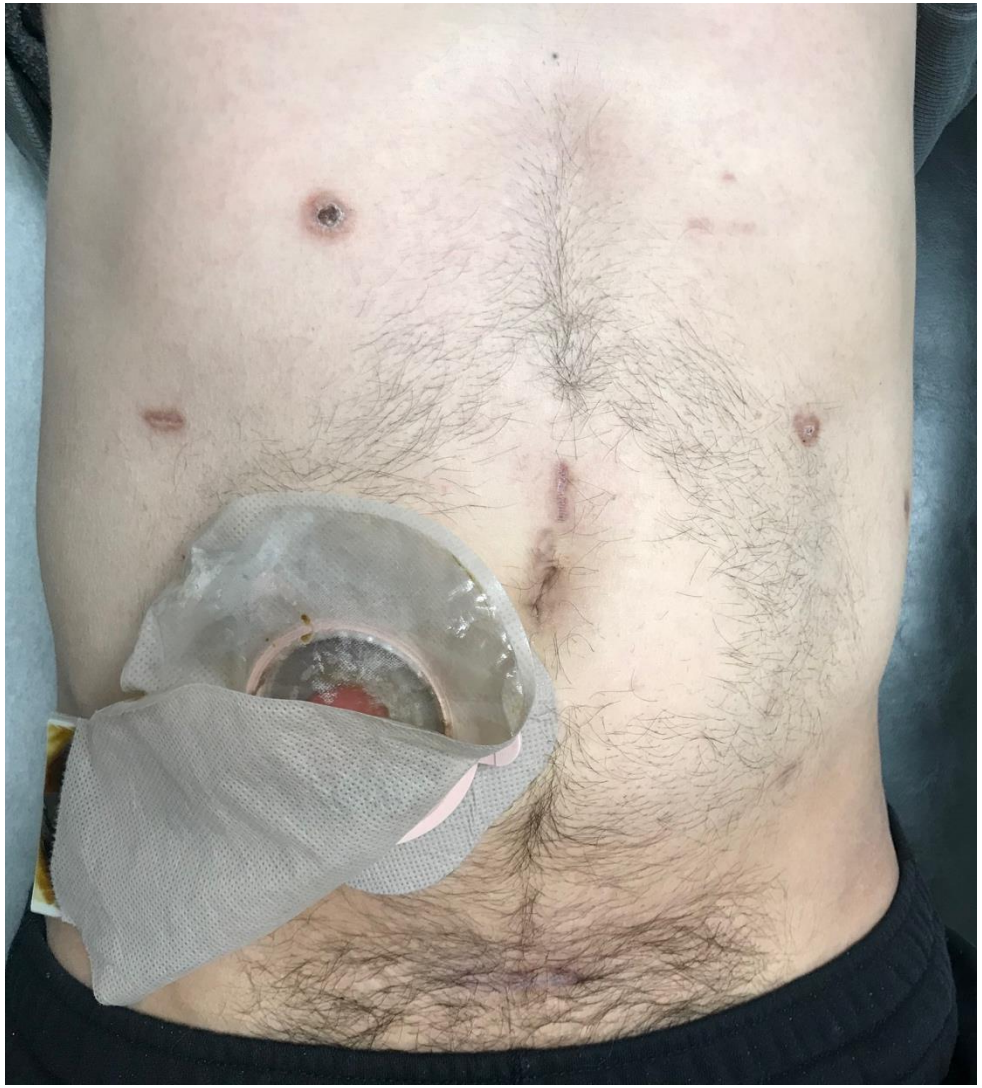
Da Vinci
Robots around
the world

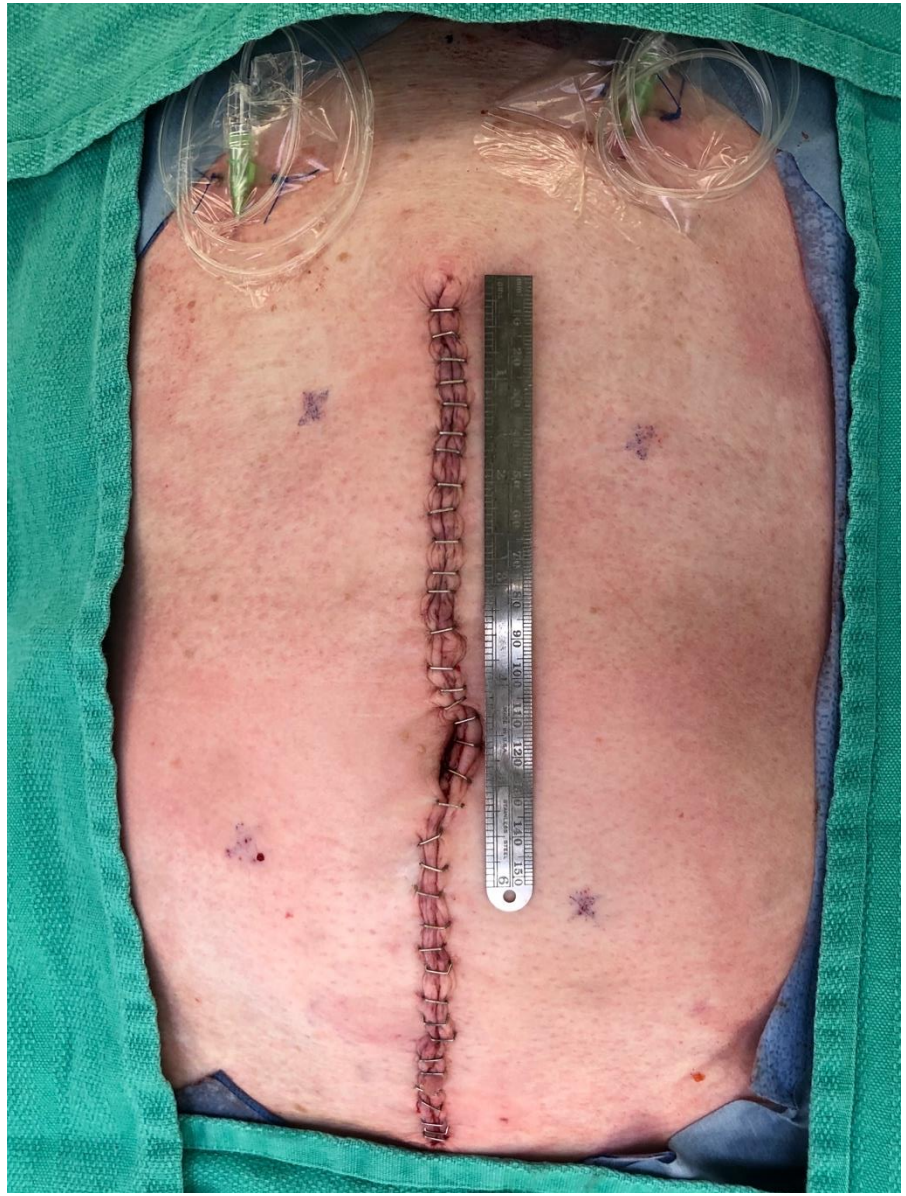


Da Vinci
Robots around the world

Benefits of Minimally Invasive Surgery

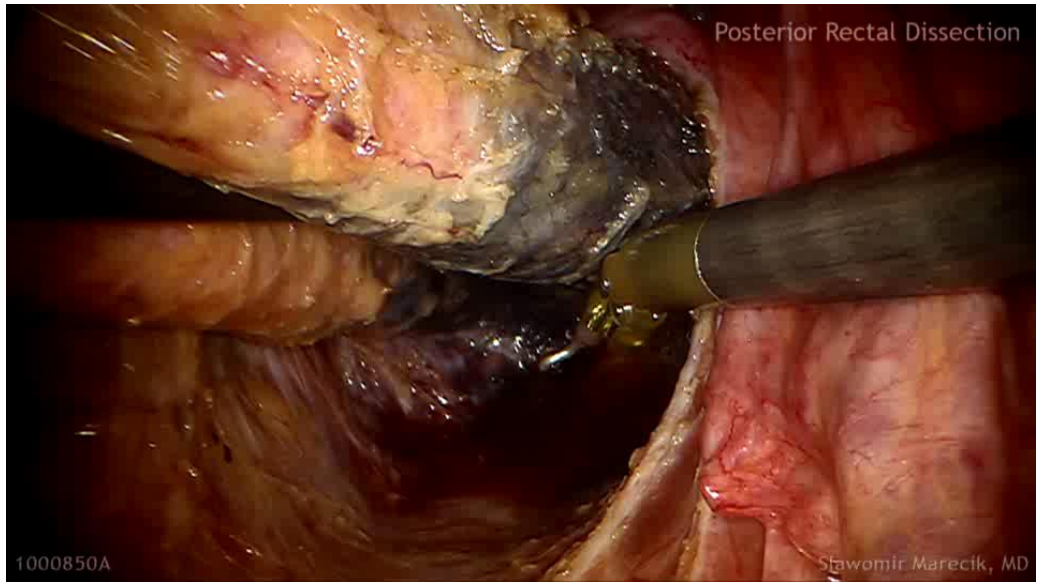
- Ileus
- Recovery
- Adhesions
- Hernia
- Bowel obstruction





Robotics Overcomes Limitations of Laparoscopic and Open Surgery

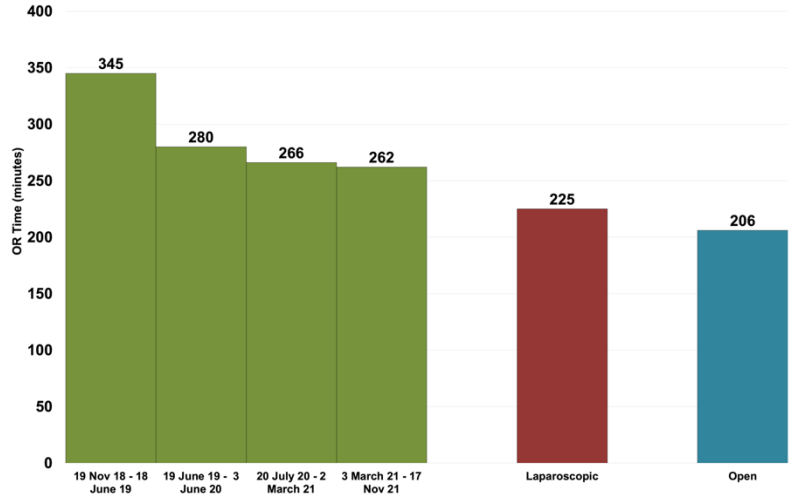
- Better access
- Stable, 3D visualization
- Better dexterity and precision
- Superior traction / counter traction
- Greater surgeon autonomy
- Improved ergonomics
- Enhanced ability to suture

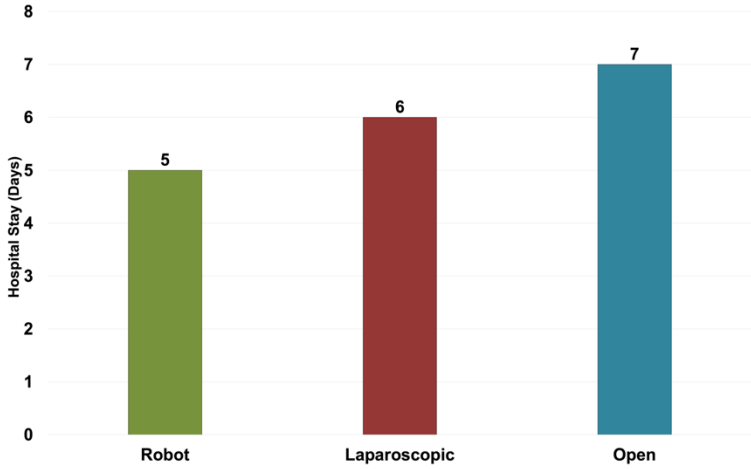


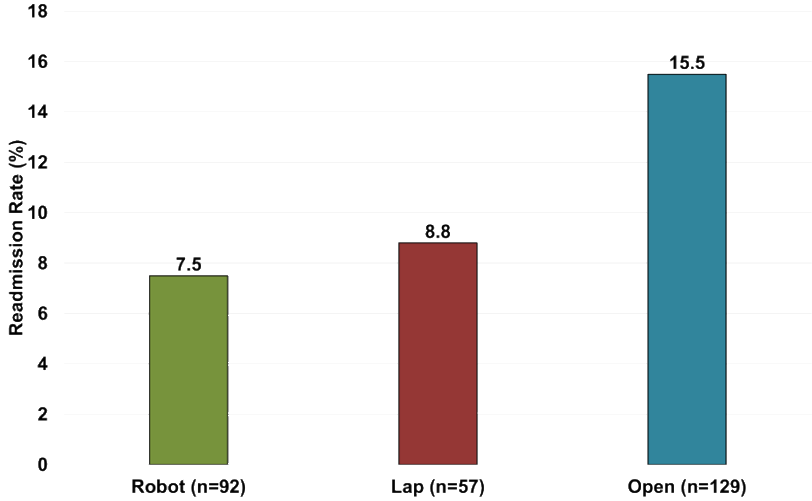
Difference Makers:

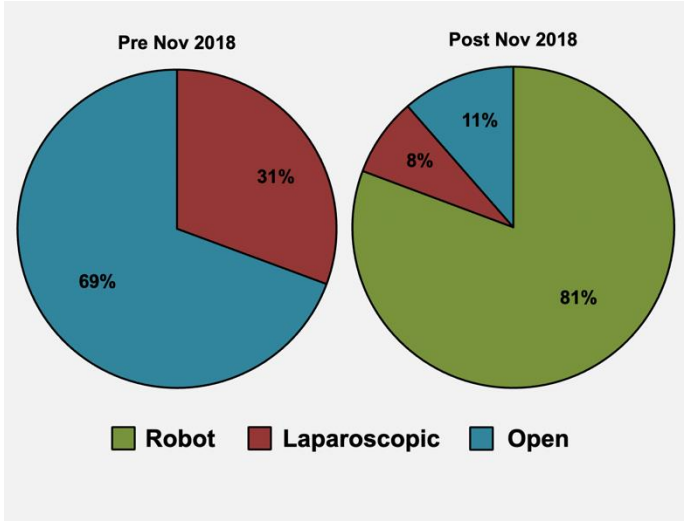
1) Surgeon (not assistant) controls stable camera platform
2) Surgeon (not assistant) controls 3rd arm for fixed retraction
3) Visualization and traction in pelvis when not possible lap or open

In the first 3 years..









What's New in Rectal Cancer

- TNT – Induction TNT, consolidation TNT, "near-TNT"
- RAPIDO, PRODIGE, OPRA, PROSPECT
- Watch and Wait
- Immunotherapy
- Robotic surgery
- ICG

Thank you!

Questions?