



ANNUAL

**Advances and Innovations in Endoscopic Oncology
and Multidisciplinary Gastrointestinal Cancer Care**

Precision Endoscopy: Transforming Colorectal Cancer Care from Diagnosis to Destruction

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Disclosures

- Consultant for Boston Scientific, Creo Medical, Cook Medical, Exact Sciences, Medtronic, Olympus, Pentax Medical, and Steris.
- Other Financial/material interests (Royalties) in Micro-Tech.
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The presentation and/or comments will be free of any bias toward or promotion of the above referenced companies or their product(s) and/or other business interests.

This presentation and/or comments will provide a balanced, non-promotional, and evidence-based approach to all diagnostic, therapeutic and/or research related content.

This presentation has been peer-reviewed and no conflicts were noted.

Cultural Linguistic Competency (CLC) & Implicit Bias (IB)

STATE LAW:

The California legislature has passed Assembly Bill (AB) 1195, which states that as of July 1, 2006, all Category 1 CME activities that relate to patient care must include a cultural diversity/linguistics component. It has also passed AB 241, which states that as of January 1, 2022, all continuing education courses for a physician and surgeon must contain curriculum that includes specified instruction in the understanding of implicit bias in medical treatment.

The cultural and linguistic competency (CLC) and implicit bias (IB) definitions reiterate how patients' diverse backgrounds may impact their access to care.

EXEMPTION:

Business and Professions Code 2190.1 exempts activities which are dedicated solely to research or other issues that do not contain a direct patient care component.

The following CLC & IB components will be addressed in this presentation:

- Rectal cancer management in young adults has different challenges that will be discussed.
- The healthcare system attitude towards patients who decline "standard of care" and how to overcome this bias.

The doctor of the future will give no medicine

- A. Hippocrates
- B. Thomas Edison
- C. Steve Jobs
- D. Donald Trump
- E. Joe Biden

The doctor of the future will give no medicine

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Thomas Edison

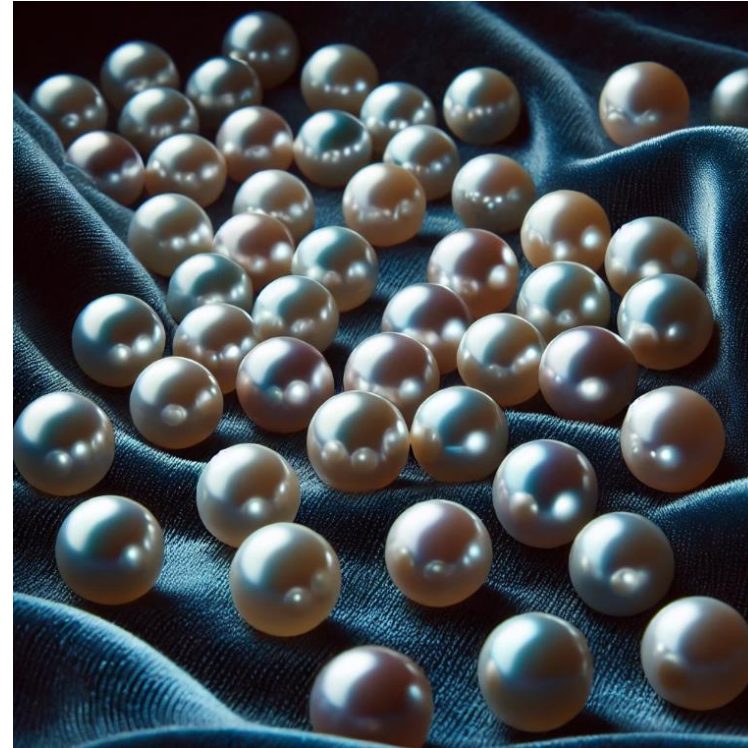
- Most prolific American Inventor (1,093 patents)
- Early in his career he worked as a telegraph operator, which inspired some of his earliest inventions.
- He was one of the first inventors to apply the principles of organized science and teamwork to the process of invention
- Credited with the first fluoroscopy equipment
- Died from diabetes complications

- An oncologist, a surgeon, and a gastroenterologist walk into a Las Vegas magic show. The magician promises to make something disappear.
- The oncologist says: Can you make cancer disappear?
- The surgeon asks: Can make my stress disappear?
- The gastroenterologist says: Just make sure whatever disappears doesn't end up in the colon!



Role of Endoscopy in Rectal Cancer

- Diagnosis
- Staging
- Assessment of tumor response
- Surveillance
- Resection
- Ablation



Some stats

- 15000 gastroenterologists in the USA
- 45,000 rectal cancers diagnosed yearly
- Most gastroenterologist occasionally see rectal cancer
- Be kind and savor the opportunity to help 2 people (patient and referring doctor)



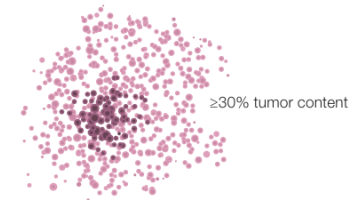
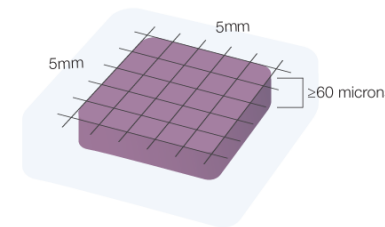
Diagnosis

- More than a biopsy
- Genomic testing
- Tattoo (based on surgeon preference)



2. Sample guidelines

- Tissue surface area should be $5\text{ mm}^2 \times 5\text{ mm}^2$
- Tissue volume should be ≥ 60 microns in total thickness
- Tumor content must be $\geq 30\%$



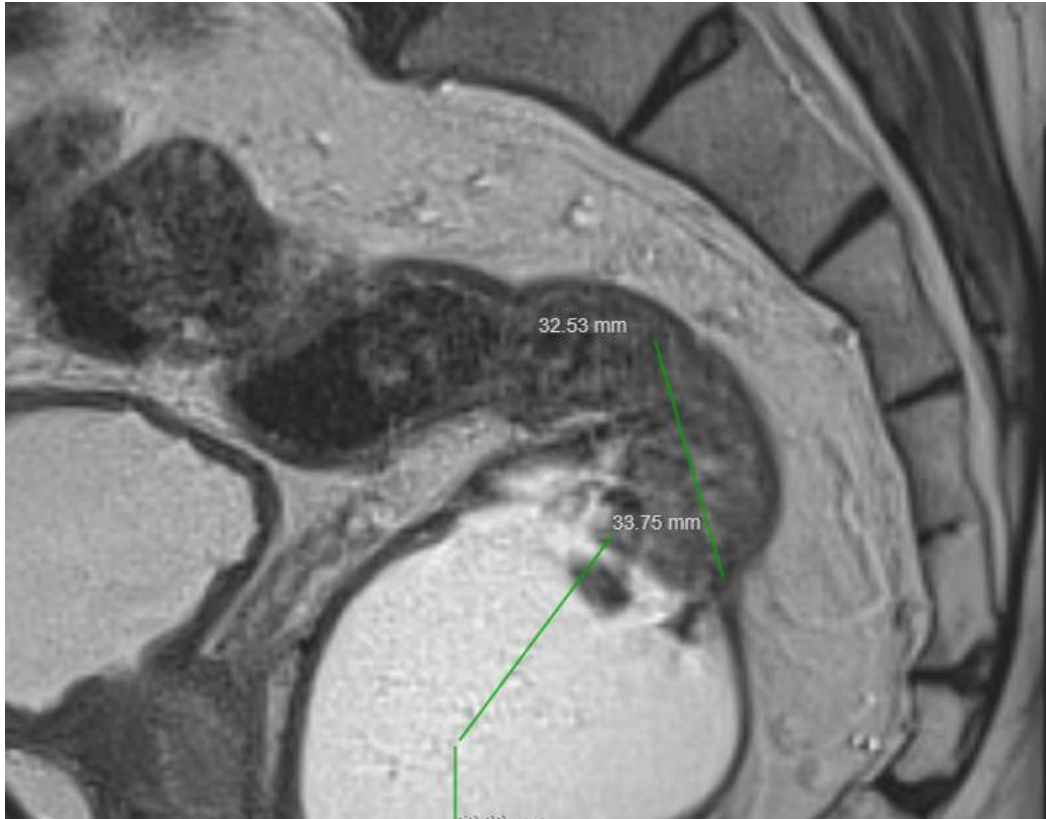
Note: Submitting suboptimal samples decreases the likelihood of test success and may lead to requests for additional unstained slides or blocks.

Staging

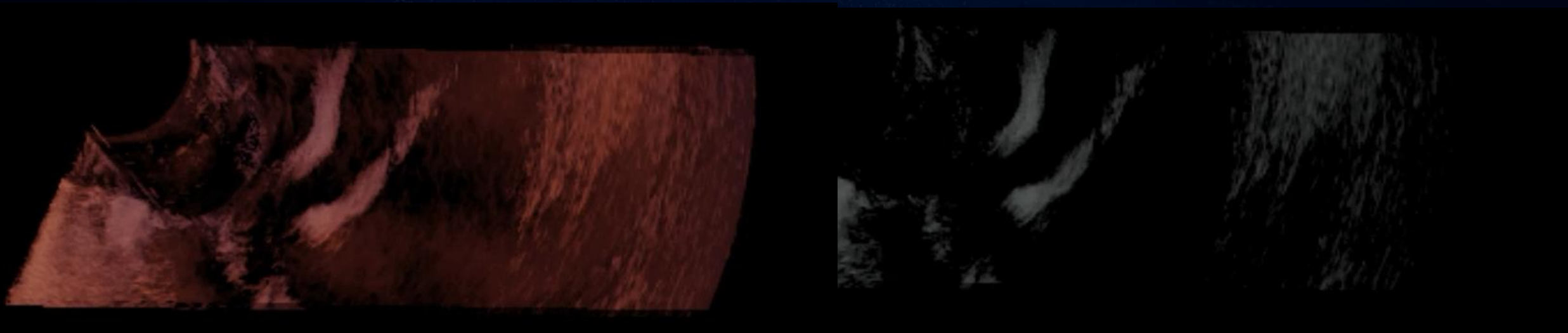
- NCCN guidelines favor MRI over EUS for bulky and advanced lesions
- Research is from old technology
- Proper staging is however suboptimal in the USA
 - 20-33 practices reported data across 1,158 unique patients.
 - Patients receiving guideline-recommended staging
 - 38% in 2016 and **56%** in 2019.

Chen Rc et al; ASCO Quality Publications Task Force. Pre-Treatment Staging Imaging in Rectal Cancer: Results From the Quality Oncology Practice Initiative. JCO Oncol Pract. 2022 Aug;18(8):e1367-e1373.

T2 by MRI and T3 by EUS



Newer EUS technology



Assessment of tumor response (TNT)

- To look for CCR: (sigmoidoscopy)
 - For patients treated with chemotherapy first followed by radiation (induction chemotherapy), assessment should be performed after 8 weeks after completion of radiotherapy
 - For patients treated with radiation first followed by chemotherapy assessment should be completed around a month of completion of chemotherapy.

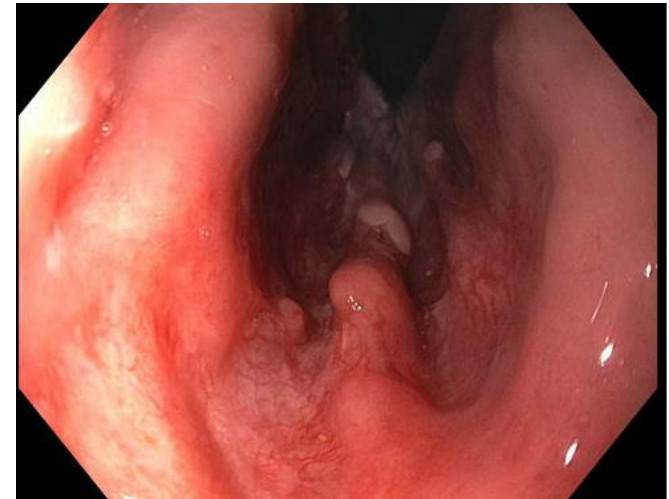
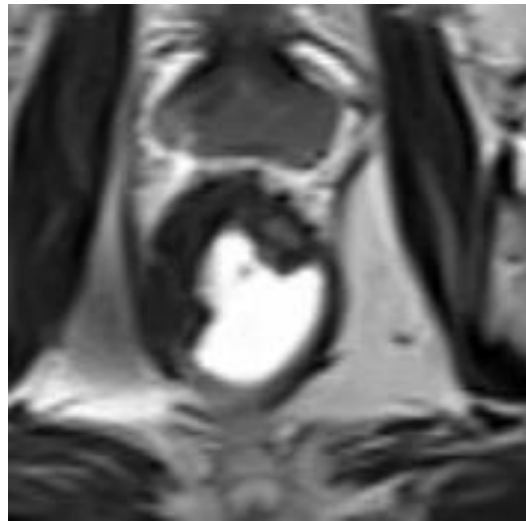
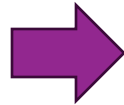
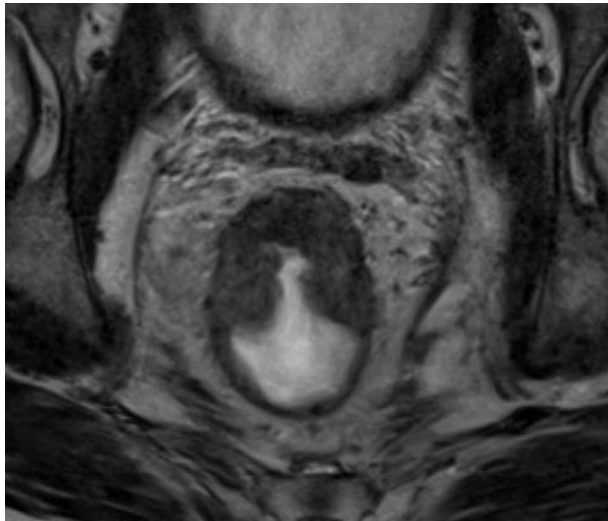
Surveillance: high risk for local recurrence

- Transanal excision (no lymphadenectomy)
- Endoscopic Resection (EMR/ESD)
- Complete clinical Response (CCR) with non surgical management

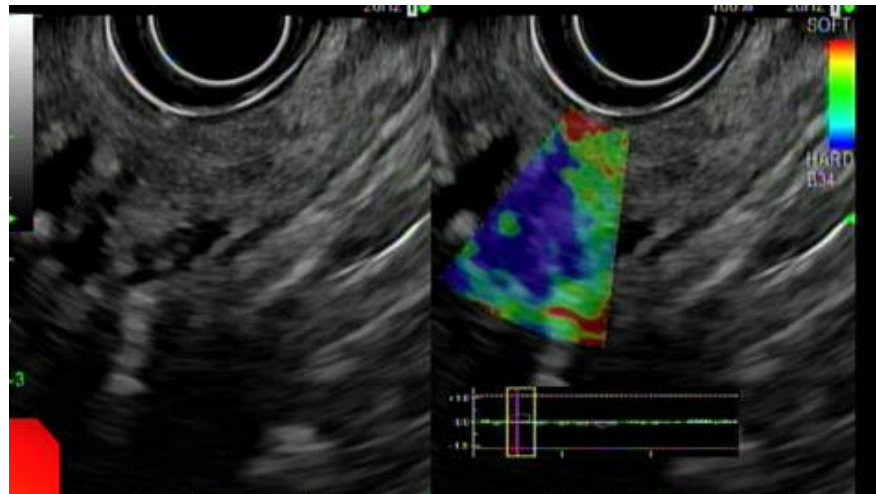
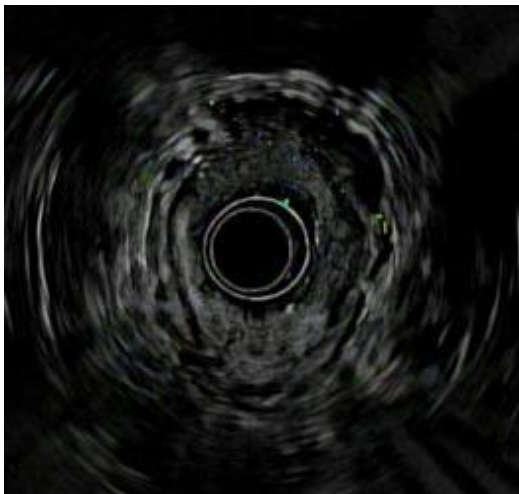
EUS or pelvis MRI with contrast is recommended every 3–6 months for 2 years, then every 6 months to complete 5 years.

Surveillance

- 49 y o with rectal adenoCa T3, N2 s/p Chem/XRT declined surgery
- Flex sig and biopsy no cancer
- Follow up MRI with decrease in tumor size



EUS, Elastography, FNB



Circulating tumor DNA as a marker of recurrence risk in stage III colorectal cancer: The α -CORRECT study.

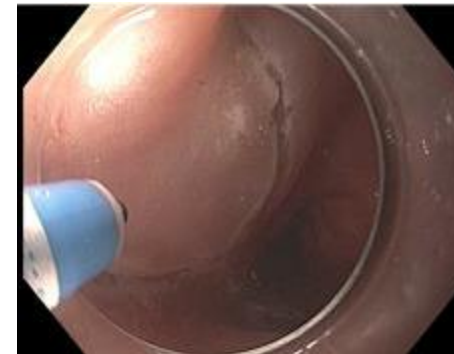
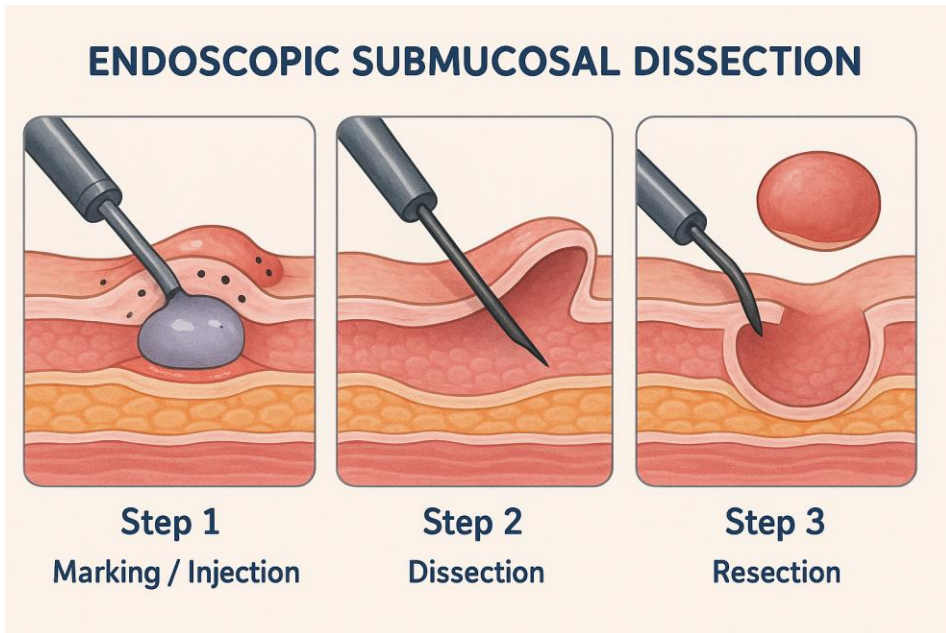
- ctDNA positive during surveillance had a significantly higher likelihood of recurrence than patients who remained ctDNA negative (HR 49.6)
- The median lead time between positive ctDNA result and a clinical diagnosis of recurrence was 10.4 months.

Circulating tumor DNA as a marker of recurrence risk in stage III colorectal cancer: The α -CORRECT study. Robert E. Schoen et al. Journal of Clinical Oncology Volume 43, Number 4_suppl

Endoscopic Submucosal Resection (ESD)

- Highly Technical, No limit on size, En block resection
- Organ preserving
- Assessment of surface pattern correlate with depth of invasion
- EUS or MRI should be used in the rectum prior to resection when suspicious features of deep submucosal invasion are present

Endoscopic Submucosal Resection (ESD)



Endoscopic Submucosal Resection (ESD)

- Criteria for “curative resection”
 - Negative circumferential and deep vertical tumor margins Submucosal invasion depth <1000 μm
 - Absence of lymphovascular invasion
 - Absent or grade 1 (low-grade) tumor budding
 - Well (G1) to moderately (G2) differentiated tumor histology
- Risk of lymph node metastasis after curative resection of superficial T1 rectal cancer with submucosal invasion <1000 μm is estimated to be 3%–6%.

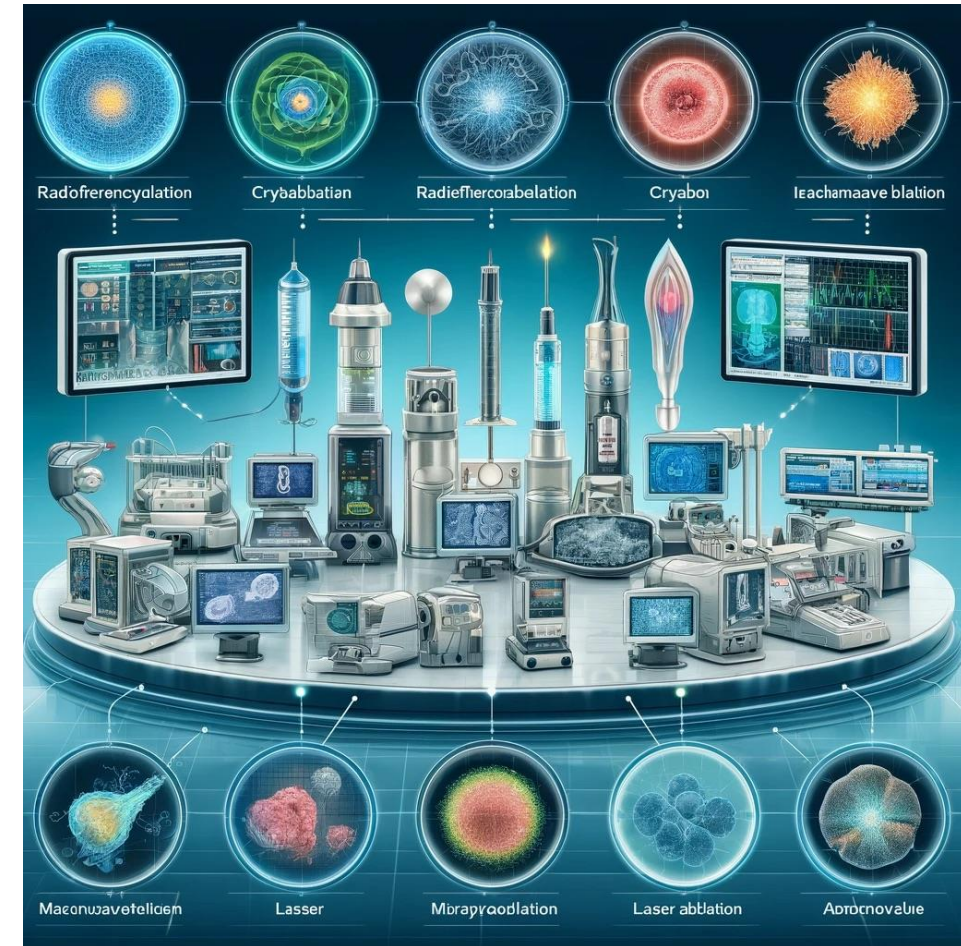
ESD vs TEM/TAMIS

- Retrospective studies:
 - ESD and TEM/TAMIS do not differ in terms of outcomes, including local recurrence, R0 resection rate, and adverse events.
- Surgery vs ESD should be center and patient dependent

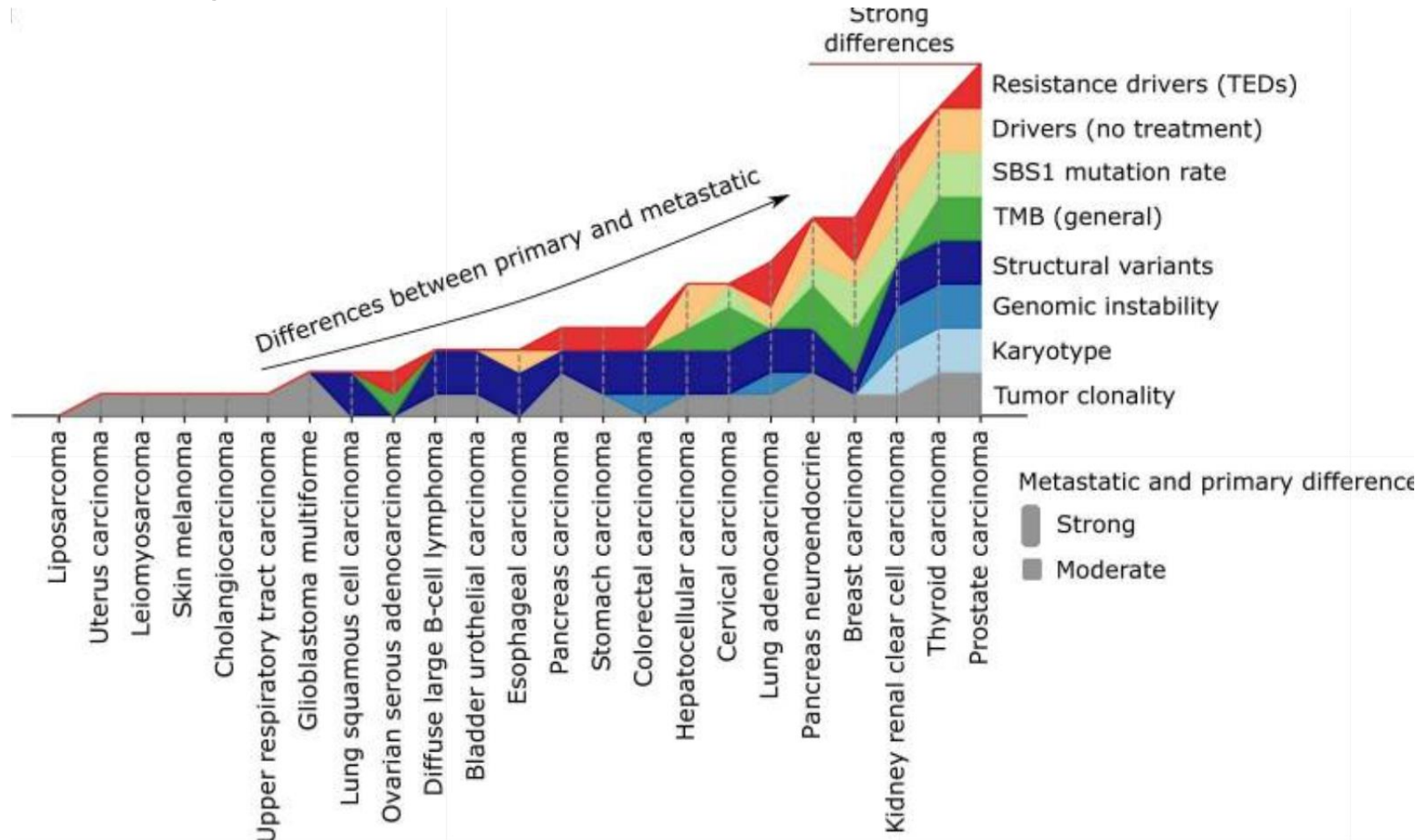
Yao J, Fan Y. Meta-analysis of clinical efficacy and safety of transanal endoscopic microsurgery and endoscopic submucosal dissection in the treatment of rectal tumors. *Wideochir Inne Tech Maloinwazyjne*. 2024 Jun;19(2):152-159.

Endoscopic Cancer Ablation

- Many modalities available
- Local therapy
- Advantages:
 - Safe
 - Easy
 - Ability to assess and treat at the same time



Pan-cancer whole-genome comparison of primary and metastatic solid tumors



Tumor microenvironment

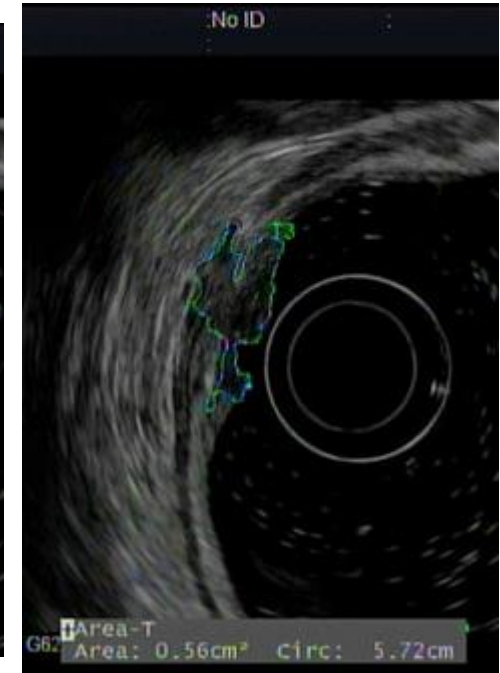
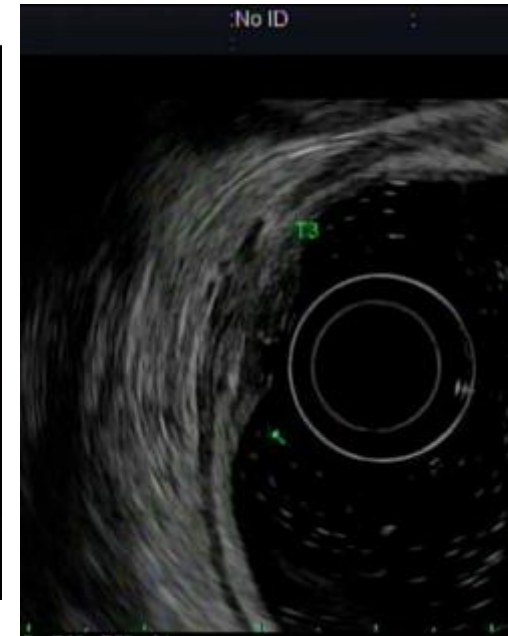
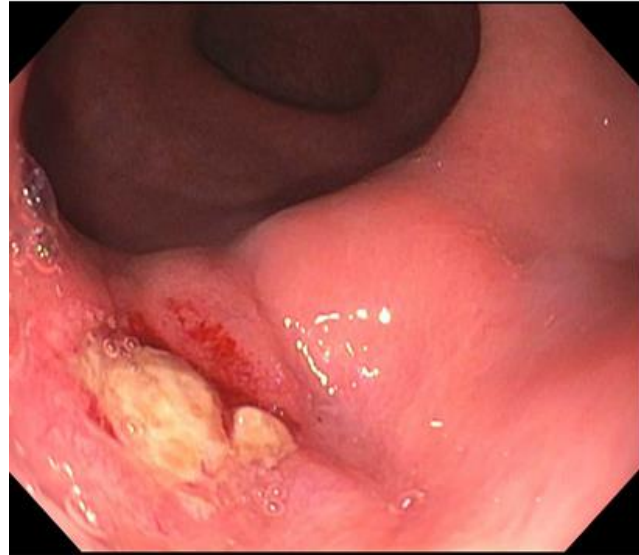
- Tumor location
- Microbiome
- Cytotoxic therapy
- Immunotherapy
- Local therapies (ablation)

Wang Q, Yu M, Zhang S. The characteristics of the tumor immune microenvironment in colorectal cancer with different MSI status and current therapeutic strategies. *Front Immunol.* 2025 Jan 14;15:1440830.

He Y, Han Y, Fan AH, Li D, Wang B, Ji K, Wang X, Zhao X, Lu Y. Multi-perspective comparison of the immune microenvironment of primary colorectal cancer and liver metastases. *J Transl Med.* 2022 Oct 4;20(1):454.

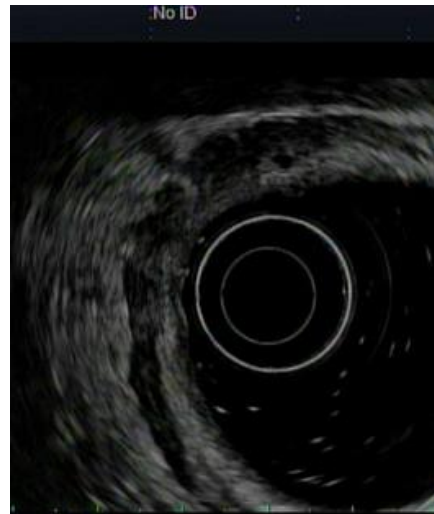
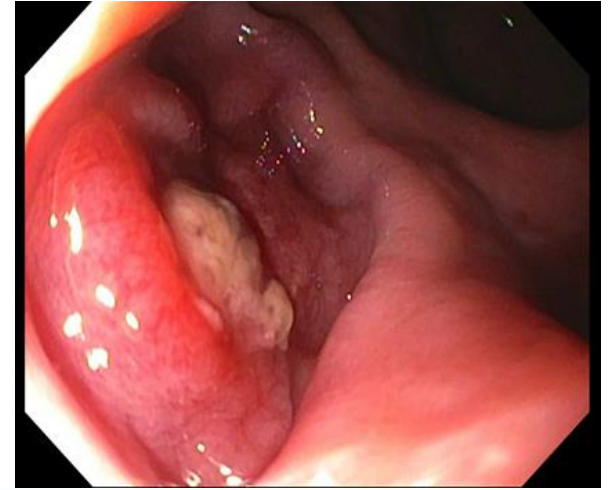
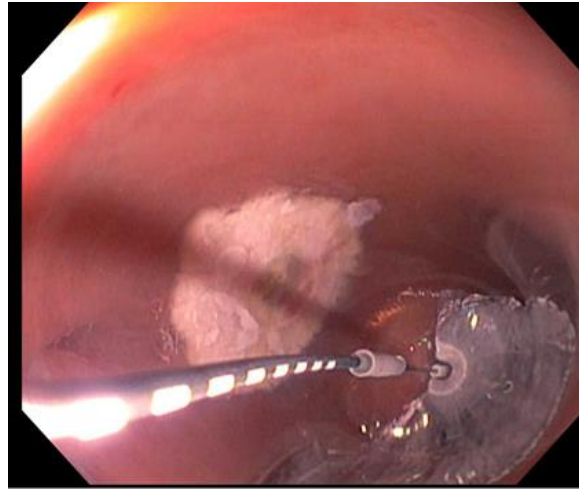
Rectal cancer ablation

- 57 y o m presented with T3, N0 invasive adenocarcinoma, moderately differentiated, No LVI, MSS
- Received TNT with CCR
- Monitored for 6 months with recurrence locally



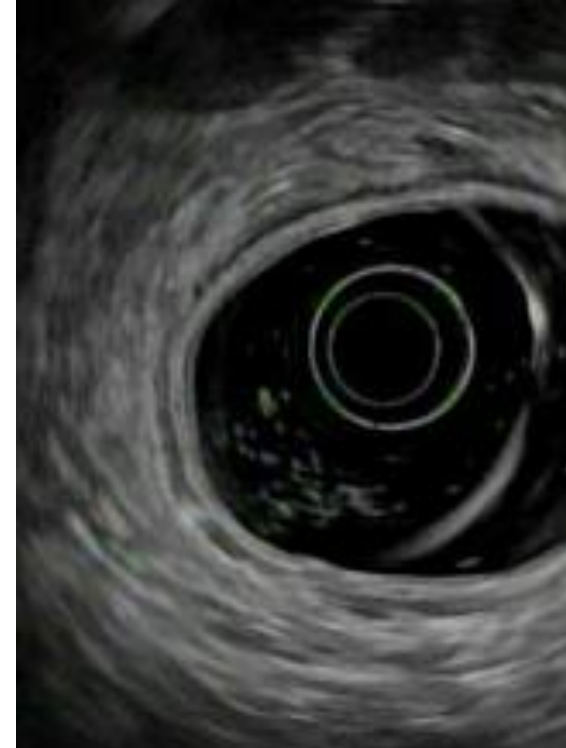
Declined surgery

- CryoAblation
- Treated with 4 sessions, 3 weeks apart
- EUS suggestive of transmural injury



Kachaamy T. Top 10 tips for performing cancer ablation.
Gastrointest Endosc. 2024 Mar 8:S0016-5107(24)00160-3.

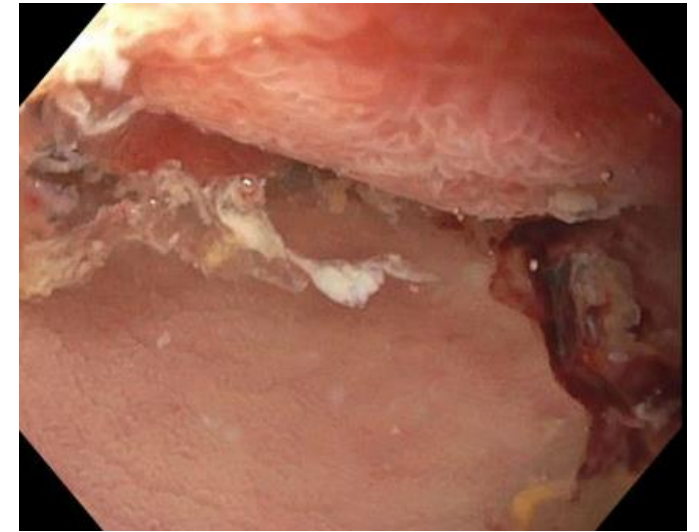
NED for 2 years now (Research realm)



Kachaamy T. Top 10 tips for performing cancer ablation.
Gastrointest Endosc. 2024 Mar 8:S0016-5107(24)00160-3.

Case

- 77 y o with history of ovarian cancer s/p resection and right colon cancer s/p resection presented with a new mass in the sigmoid and obstructive symptoms
- 3 surgeons deemed her not a surgical candidate due to prior surgeries



PEF

- Obstructive symptoms resolved in 2 weeks
- Data suggestive of antitumor immune response
- Research Realm



Polajžer T, Miklavčič D. Immunogenic Cell Death in Electroporation-Based Therapies Depends on Pulse Waveform Characteristics. *Vaccines (Basel)*. 2023 May 29;11(6):1036

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+Dist: cm

LIN180
HdT-11.0Rx R:5.00 BG:71 BD:88

LIN 180
1393/1393



Mark start point.

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Change

Endoscopy and Rectal cancer

- Endoscopy plays an important role in all aspects of recta cancer
- Paradigm shift in organ preservation
- New technology
 - Staging
 - Surveillance
 - Ablation
- Prime for research and innovation

Thank you!

