

**Mastering Comprehensive GI Cancer Care: APP & Nursing  
Workshop**

# Diagnosis and Managing GI Symptoms in Cancer Patients From Workup to Management and Nutritional Support

Presenters:

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# Disclosures

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City of Hope Chicago

- *No relevant financial relationships*

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- *No relevant financial relationships*

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

**The off-label/investigational use of Haloperidol, Olanzapine, and Aprepitant will be addressed.**

# 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:***

- *Acknowledgment of Diverse Perspectives: Understanding the impact of diverse cultural backgrounds on the perception and expression of GI symptoms is crucial. Recognizing that cultural beliefs, dietary practices, and communication styles significantly influence how patients experience and articulate their symptoms.*
- *Treatment Preferences and Assumed Compliance: Given that majority of medications used are also used for antipsychotic diagnosis cultural stereotypes can make compliance and assumed compliance difficult.*

# Nutritional challenges in advanced cancer patients

- More prominent in GI malignancies
- Mechanical obstruction to the GI tract.
- Malabsorption
- Severe therapy related mucosal injuries – radiation and chemotherapy
- Pancreatic insufficiency
- Malignant fistulas

## Malnutrition in Cancer patients

- Prevalent in 80% of cancer patients
- 20% patients die from malnutrition then the cancer.
- Malnourished patients have double the ALOS compared to well-nourished.
- Nutritional support improves patient outcome and improves QOL and performance status.
- Nutritional intervention saved 242 Million dollars for Medicare for GI cancers in 2017 (ASPEN data)
- Impact of a Nutrition and Metabolic Support team (NMST) improves nutritional status, reduce complications, shorten hospital stay and prevent readmissions.

## Definition of NMST

- Provision of nutrients orally, enterally or parenterally with therapeutic intent
- Provided by team of professionals
- Team members include a physician, dietitians, care manager, pharmacist, discharge planner and research representative.
- Screen all cancer patients to detect early malnutrition.
- Recommend appropriate nutritional intervention.
- Assure appropriate, safe and cost-effective nutritional care.
- Extend same care when patients go home.

# Patient-Generated Subjective Global assessment PG-SGA

<b>Criteria</b>	<b>A Well nourished</b>	<b>B Moderately malnourished</b>	<b>C Severely malnourished</b>
<b>Weight history (involuntary weight loss)</b>	<5% over 1 month <7.5% over 3 months <10% over 6 months	5% over 1 month 7.5% over 3 months 10% over 6 months	>5% over 1 month >7.5% over 3 months >10% over 6 months
<b>Food Intake</b>	Uncompromised	Compromised but able to eat small amounts	Compromised, no/ minimal intake
<b>Symptoms (N/V/C/D)</b>	Minimal	Moderate	Severe
<b>E.C.O.G Score</b>	0,1	2	3,4
<b>G.I Tract</b>	Functional	Functional (low) however may have dysphagia (high)	Nonfunctional due to: <ul style="list-style-type: none"> <li>- Malabsorption</li> <li>- Fistula</li> <li>- Short Bowel Syndrome</li> <li>- Bowel Obstruction</li> <li>- Treatment induced GI dysfunction</li> </ul>

# Palliative Therapy

Palliative care is an interdisciplinary medical caregiving approach aimed at optimizing quality of life and mitigating suffering among people with serious, complex illnesses



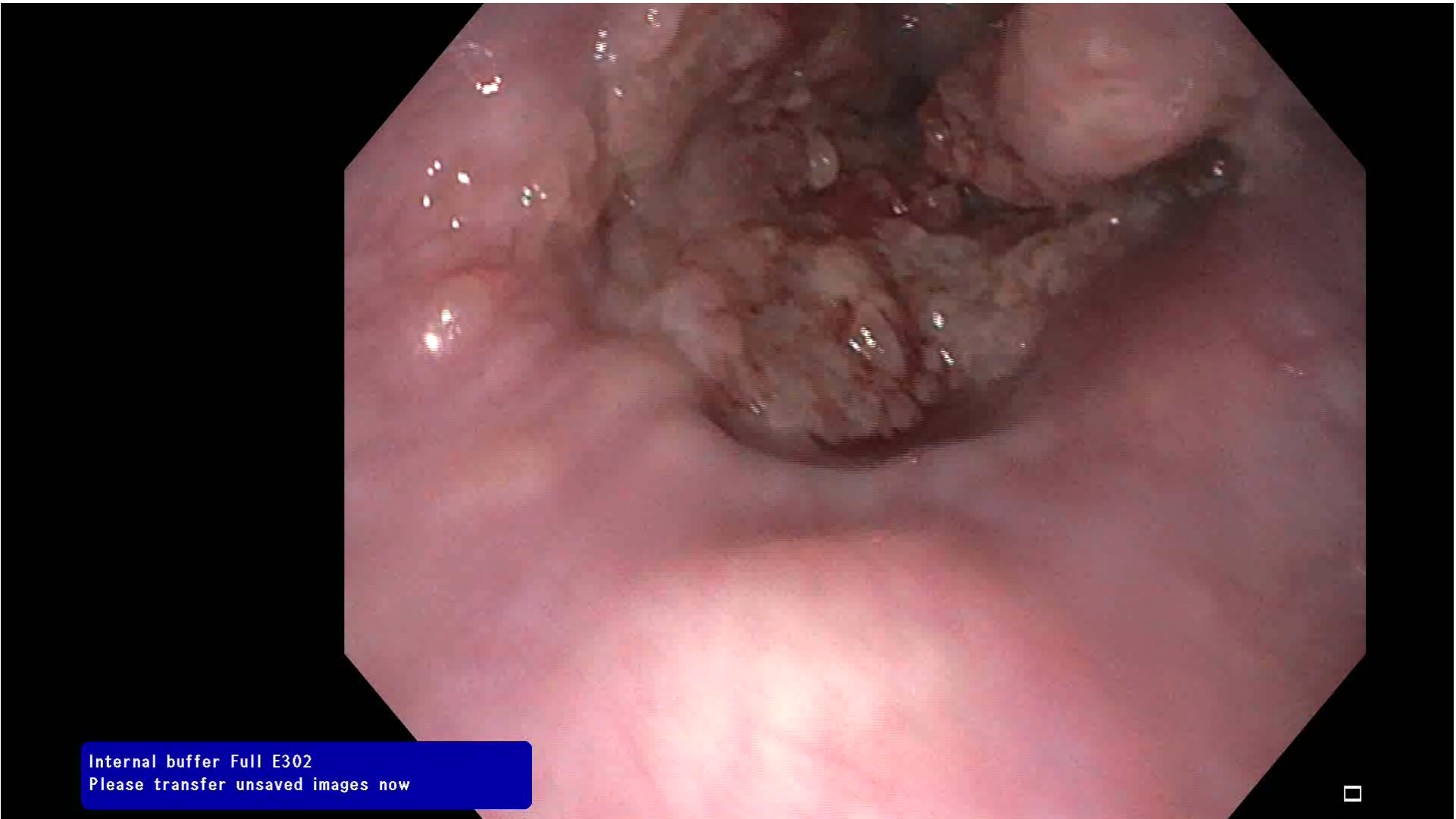




# Cryotherapy

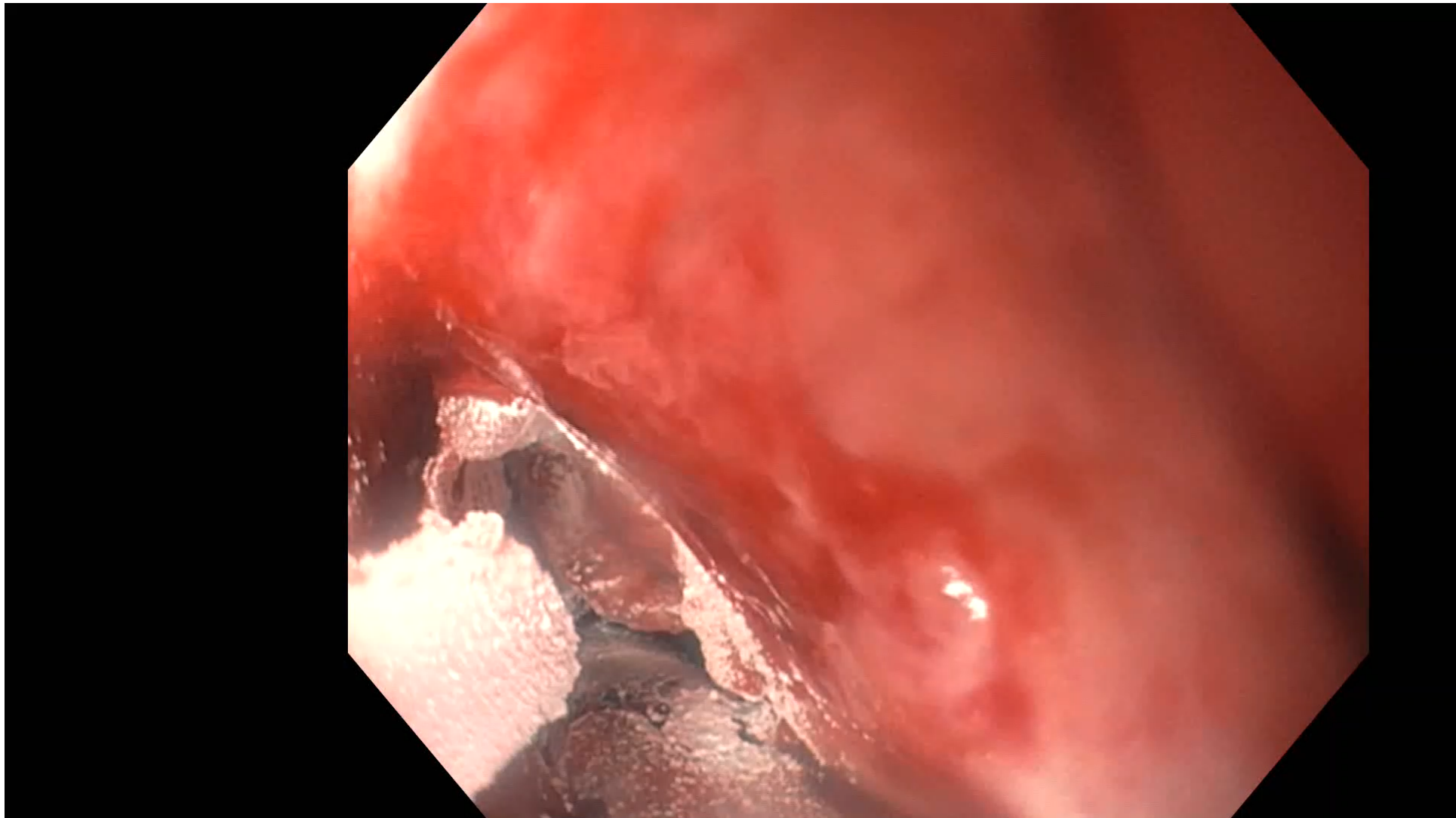
- Emerging technique using liquid nitrogen
- Freeze and thaw cycles are important for cell death
- Secondary microvascular damage leads to further cell death
- Connective tissue is preserved, possibly leading to less scarring
- Liquid nitrogen is sprayed via a through the scope catheter and requires venting

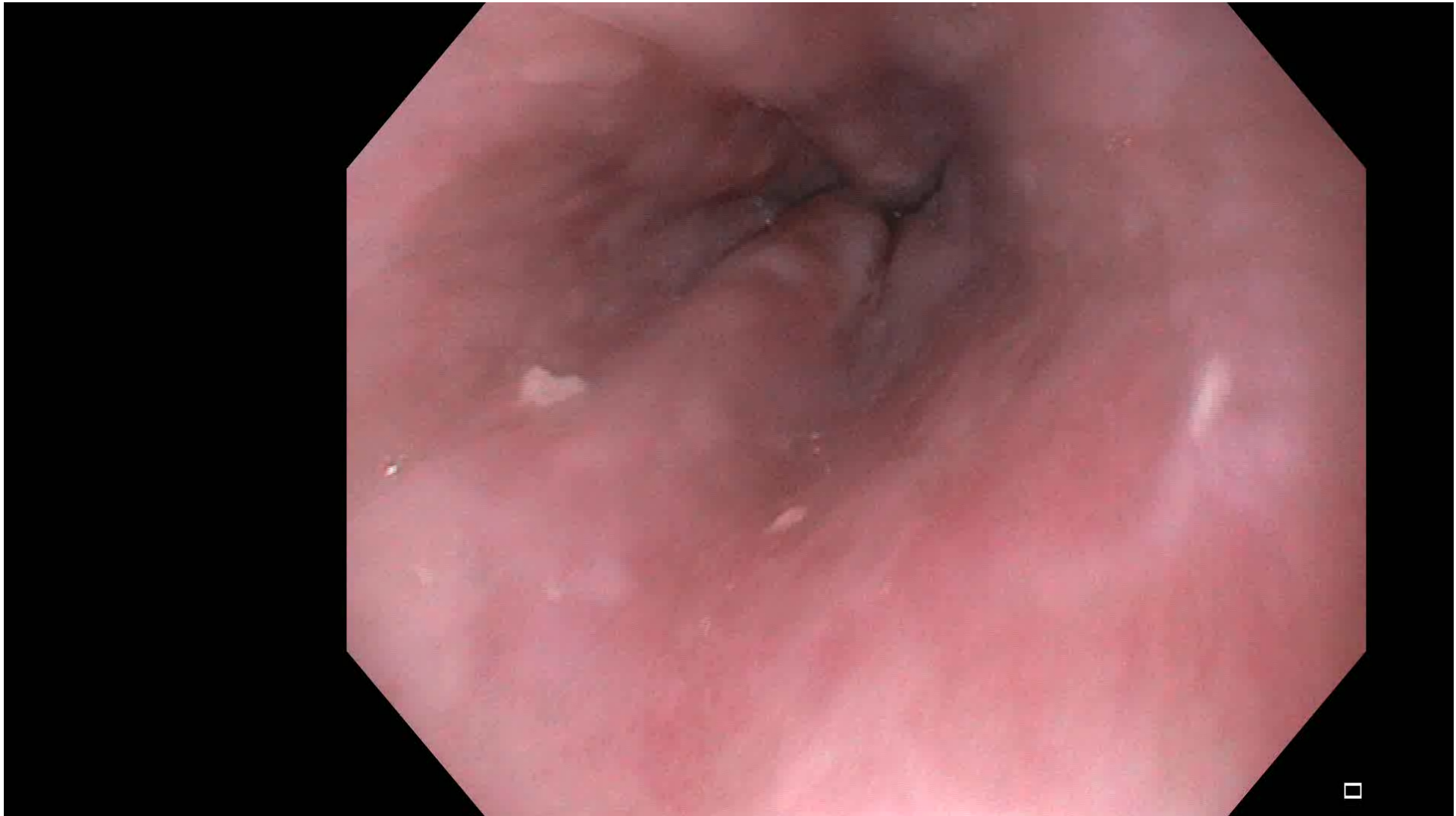


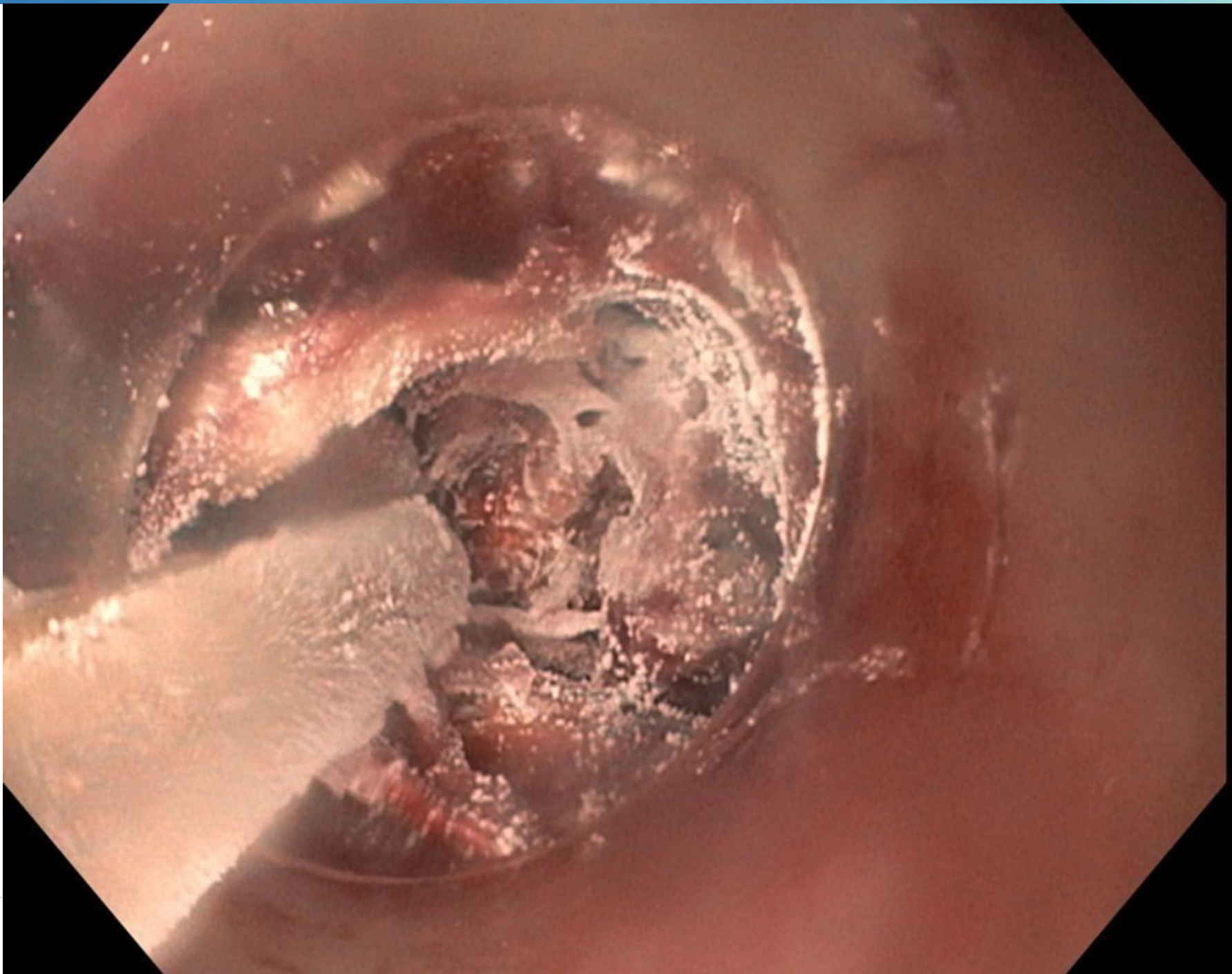


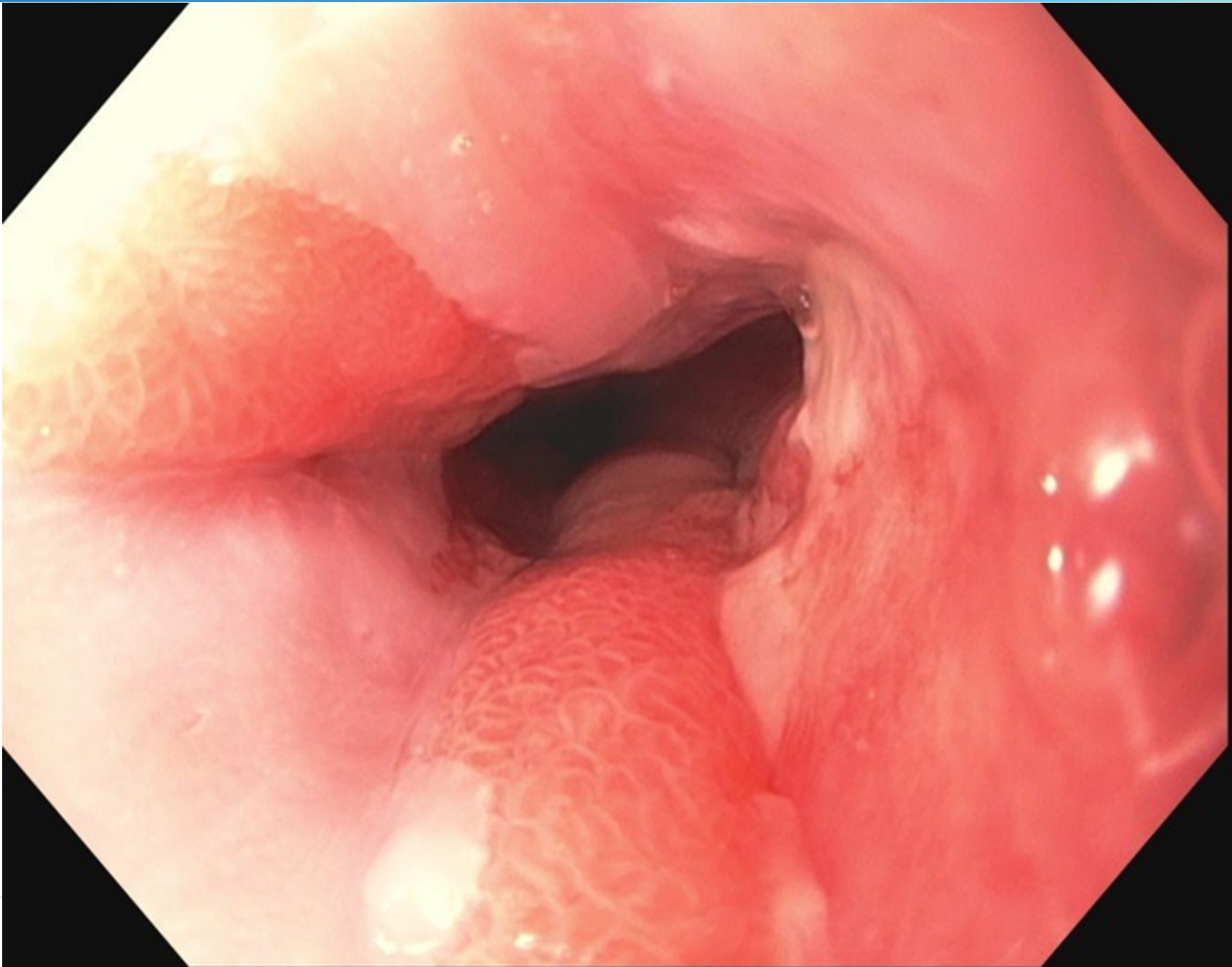
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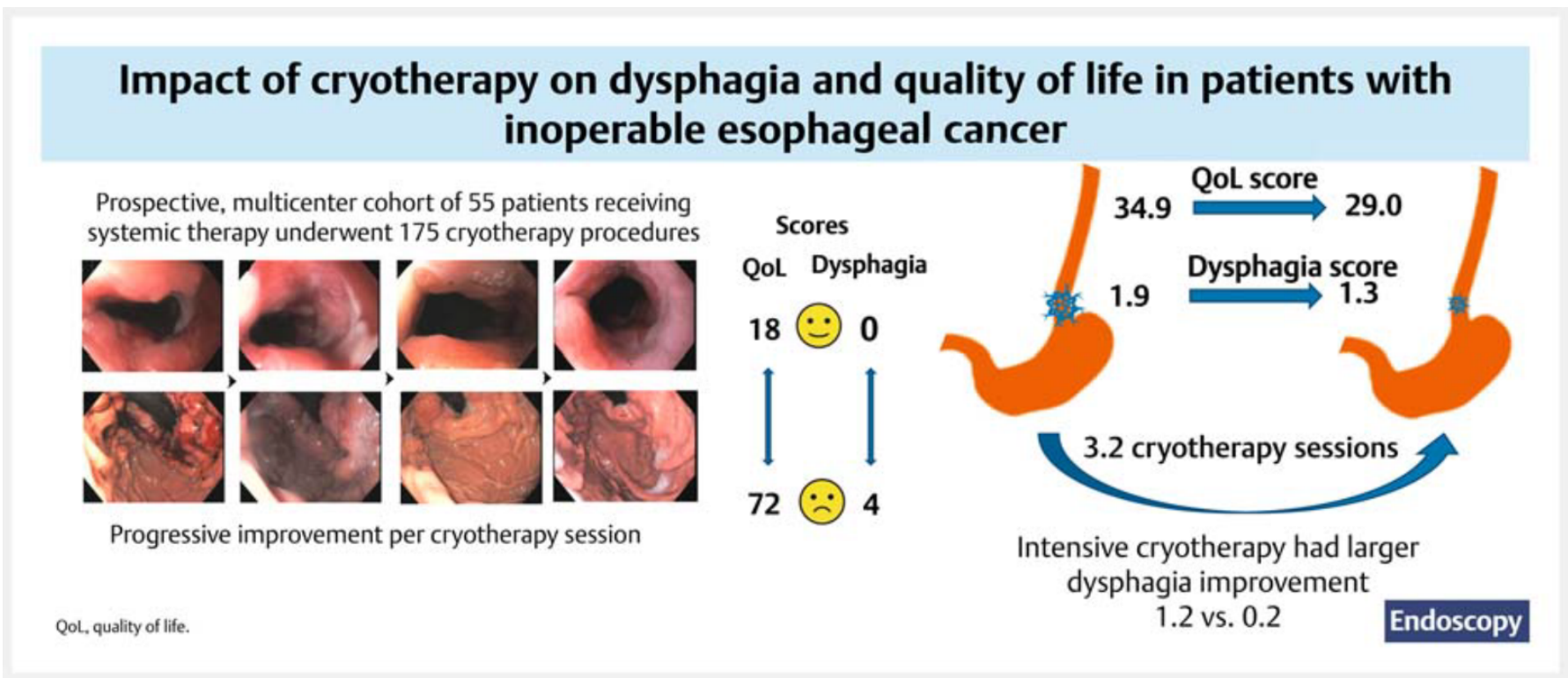






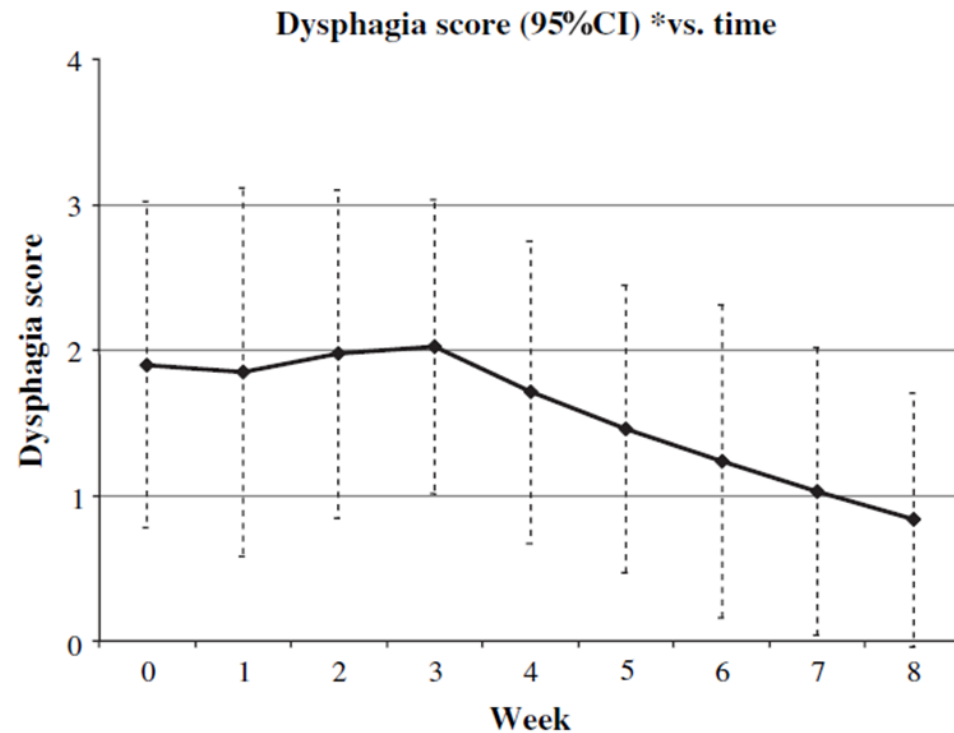
# A Prospective Multicenter Study to Evaluate the Impact of Cryotherapy on Dysphagia and Quality of Life in Patients with Inoperable Esophageal Cancer

Toufic Kachaamy , Neil R Sharma , Tilak Shah , Sonmoon Mohapatra , Kimberly Pollard , Christina Zelt , Elaine Jewett , Rigoberto Garcia , Rachel Munsey , Saurabh Gupta , Mariajose Rojas-DeLeon , Digant Gupta , Vivek Kaul , Rahul Pannala , Pankaj Vashi



ENDOSCOPY - DOI: 10.1055/a-2105-2177, July 2023.

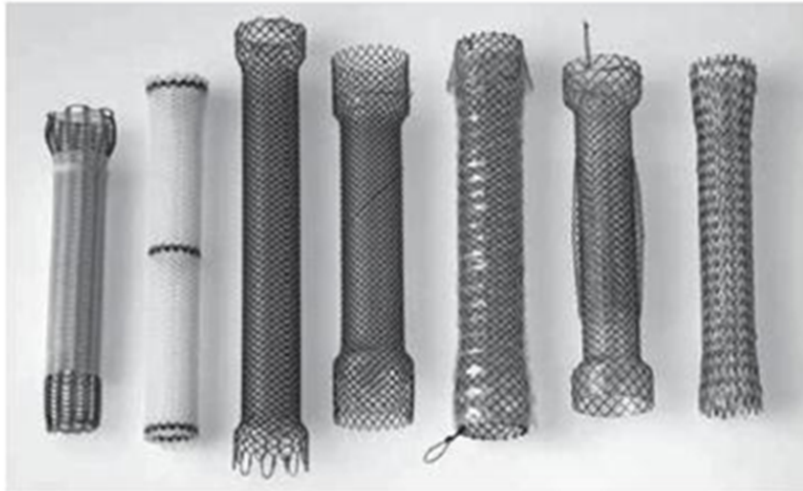
# External Beam Radiation-Results



- Response Rate: 70%
- Full Effect: 2-8 weeks
- ~40% had recurrence of symptoms requiring some other treatment
- Adverse events:
  - stricture formation > 30%
- Initial worsening before improvement

.Clin Oncol (R Coll Radiol). 2008 Feb;20(1):53-60. Kassam Z et al

# Esophageal Stents



**Figure 2** Available esophageal stents from left to right: Ultraflex, Polyflex, Wallflex, Evolution, SX-Ella, Niti-S, ALIMAXX-E.

- Plastic
- Uncovered
- Partially covered
- Fully covered
- Fully covered with antimigration struts
- Stents with anti-reflux mechanisms

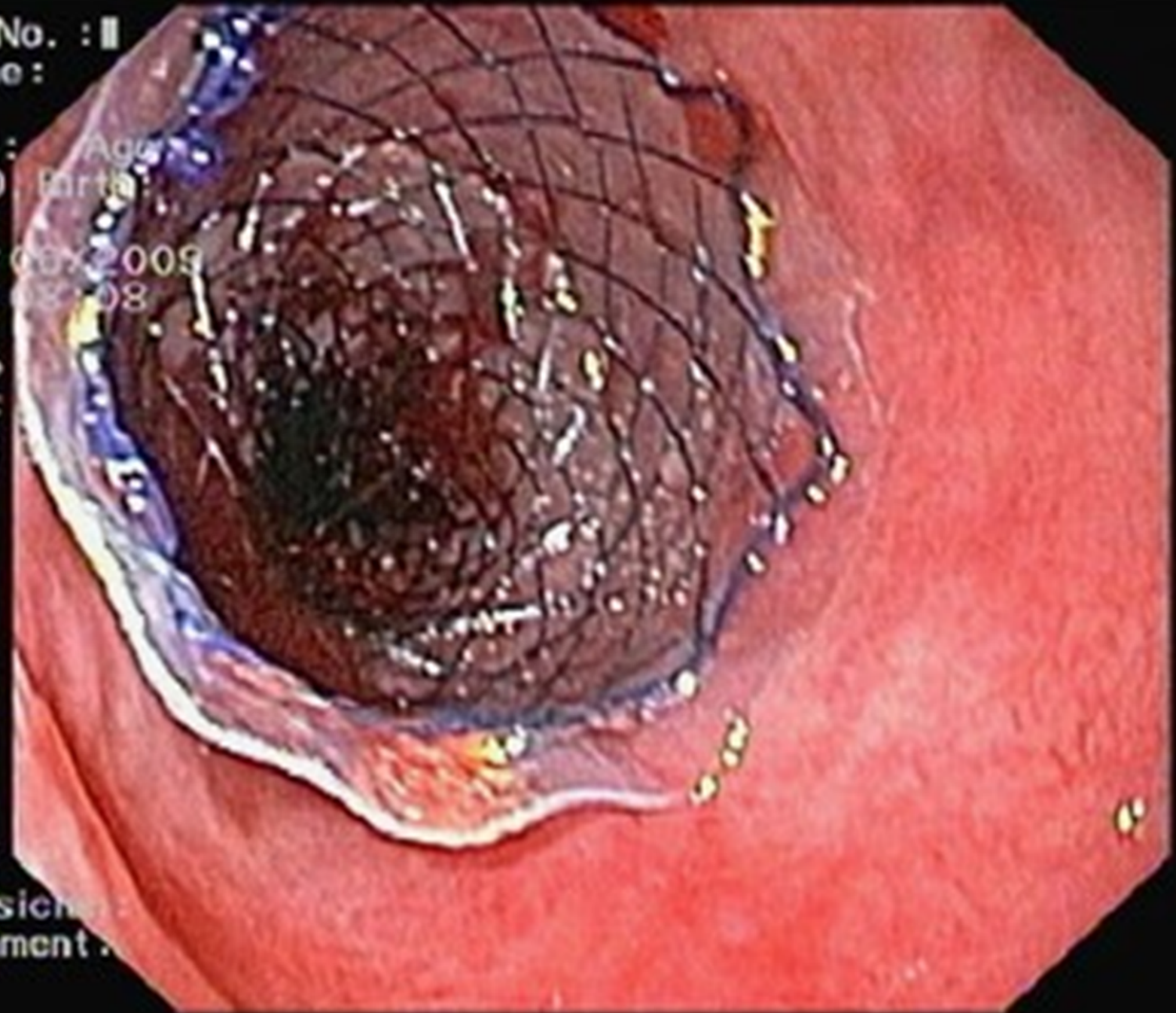
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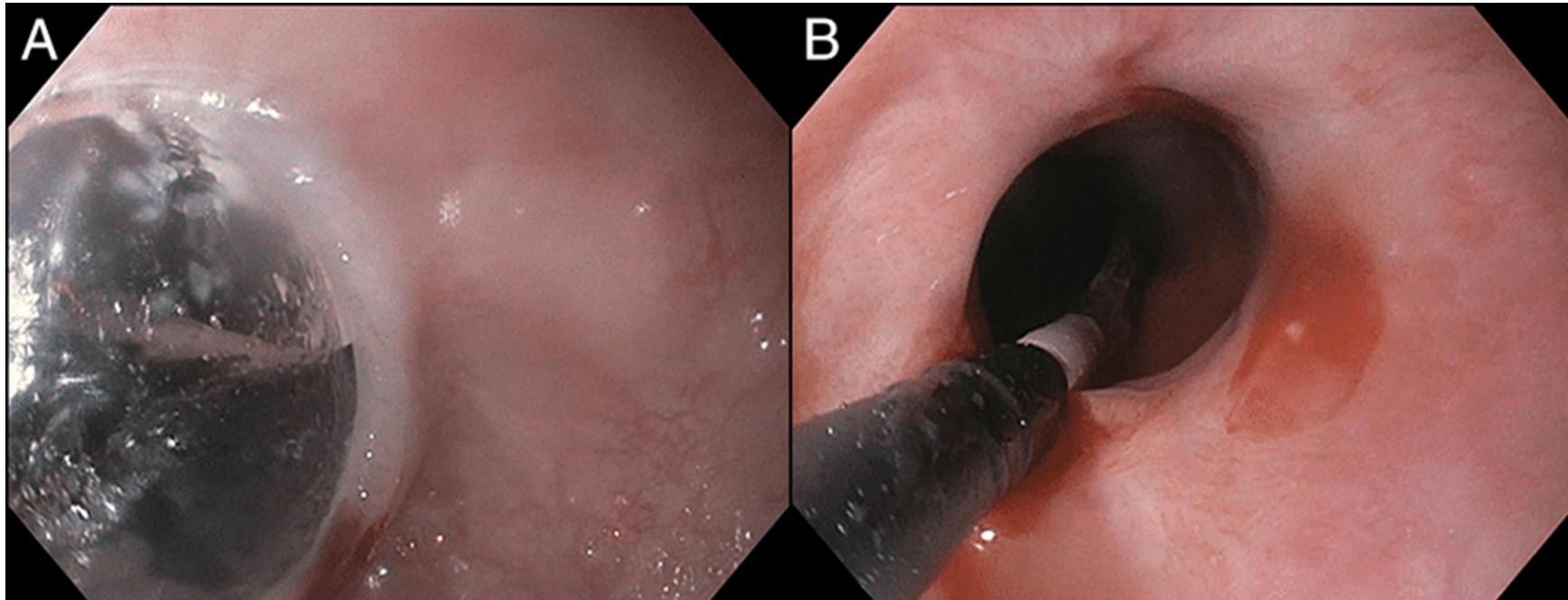
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CVP  
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Ex: 8

Physician  
Comment :

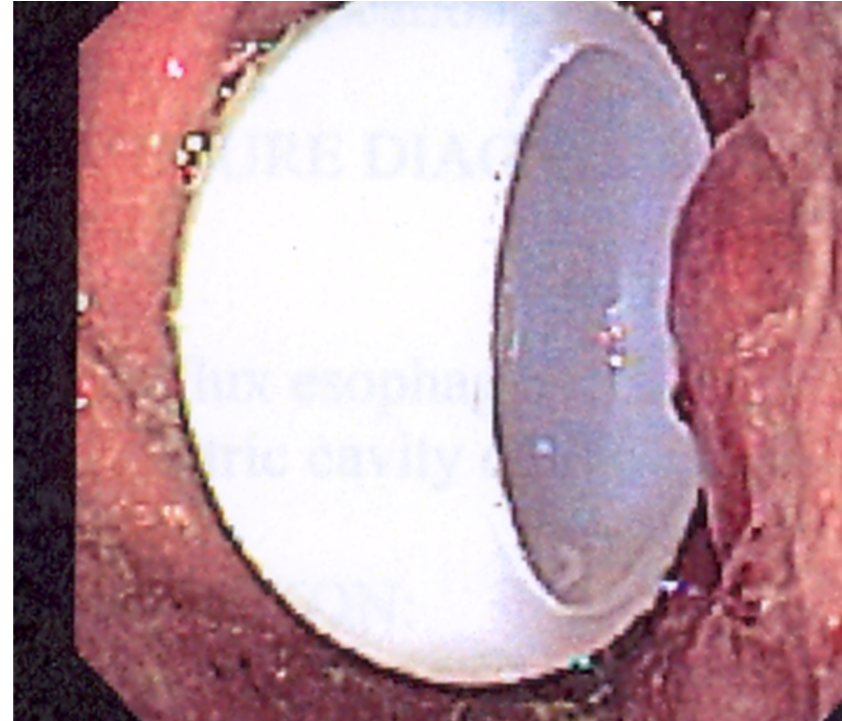


# Post Treatment Strictures



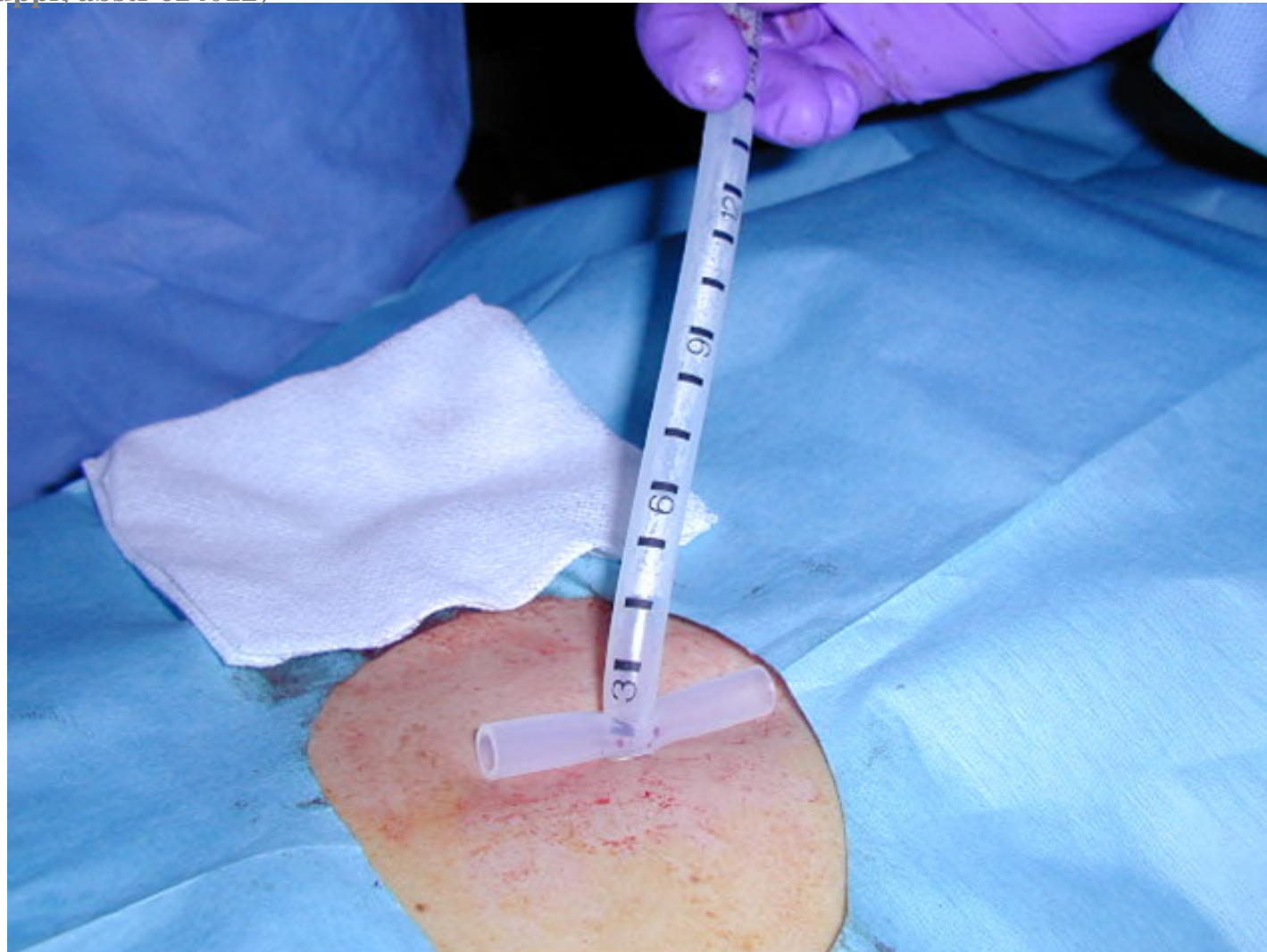
# Percutaneous Endoscopic Gastrostomy tube (PEG)

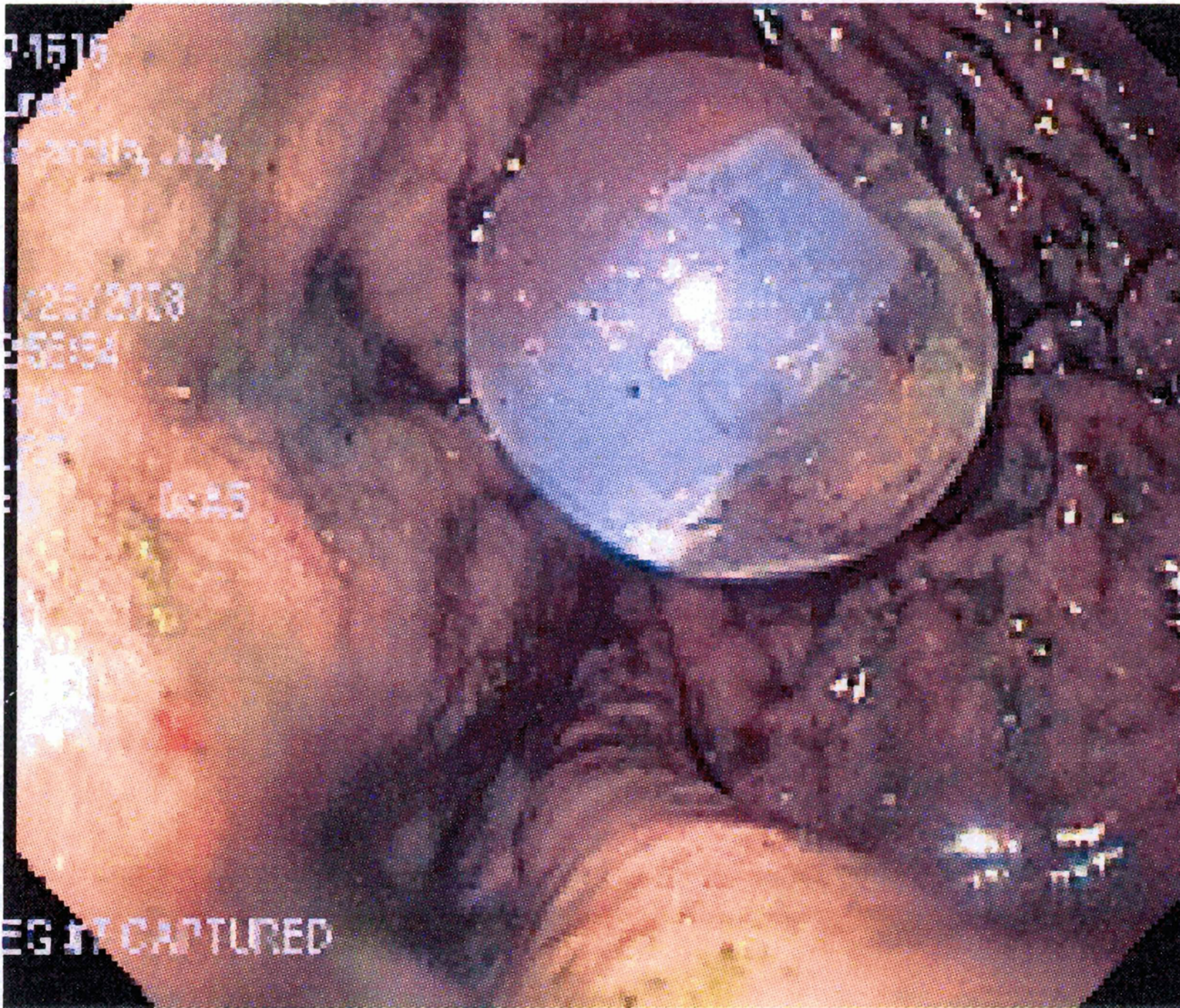
- Oropharyngeal dysphagia
- Head and Neck cancers
- Esophageal cancers
- Cancer cachexia with anorexia
- Aspiration risks
- Usually placed endoscopically.
- Can be placed by interventional radiologist



**Safety and efficacy of percutaneous endoscopic gastrostomy tube placement in patients with malignant peritoneal carcinomatosis induced bowel obstruction.**

J Clin Oncol 30, 2012 (suppl; abstr e14012)





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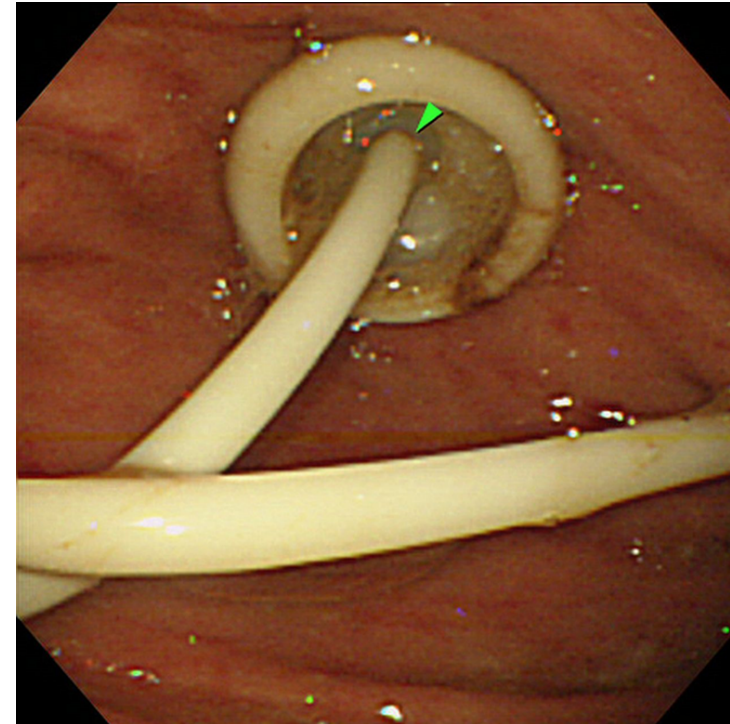
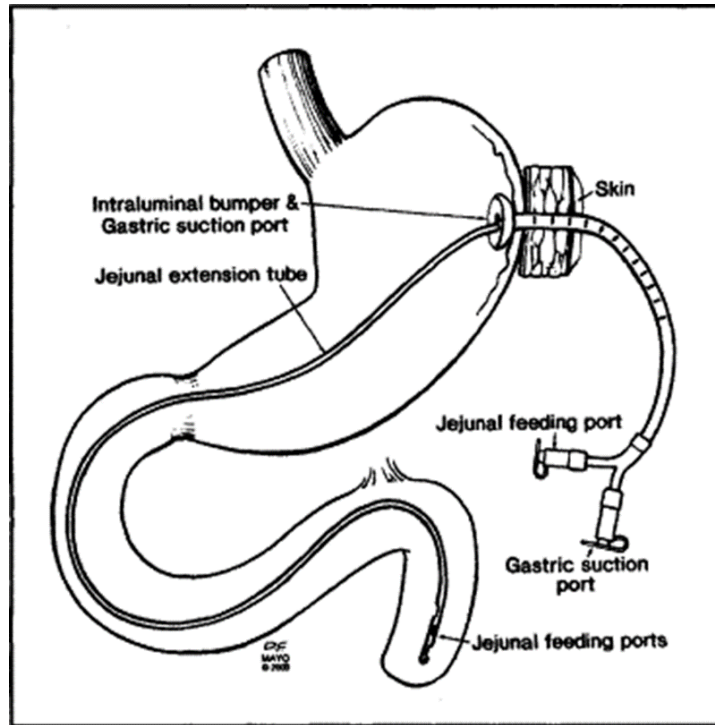


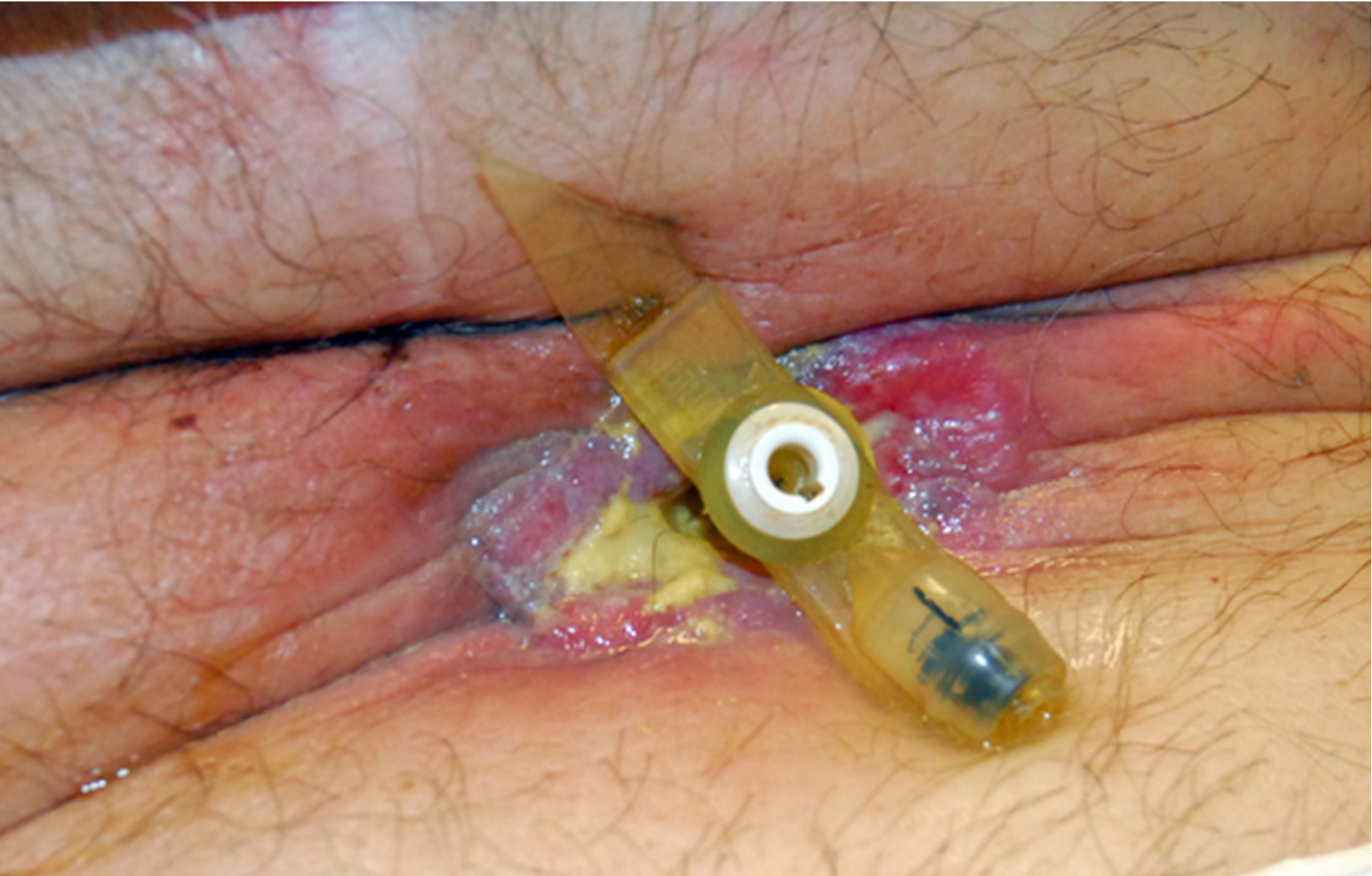
Legacy



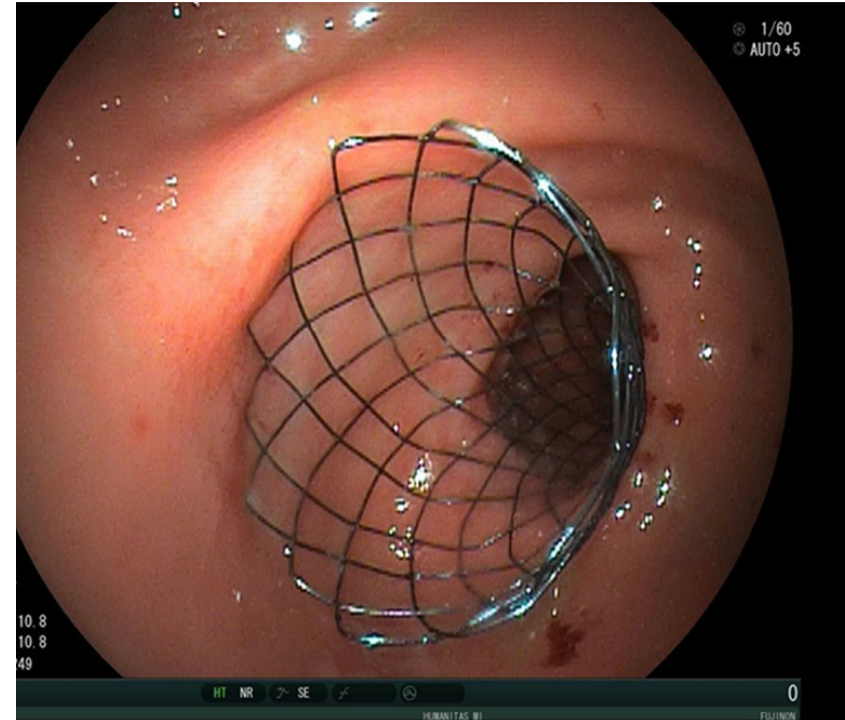
ENFit®

# Endoscopic Jejunostomy through PEG tube

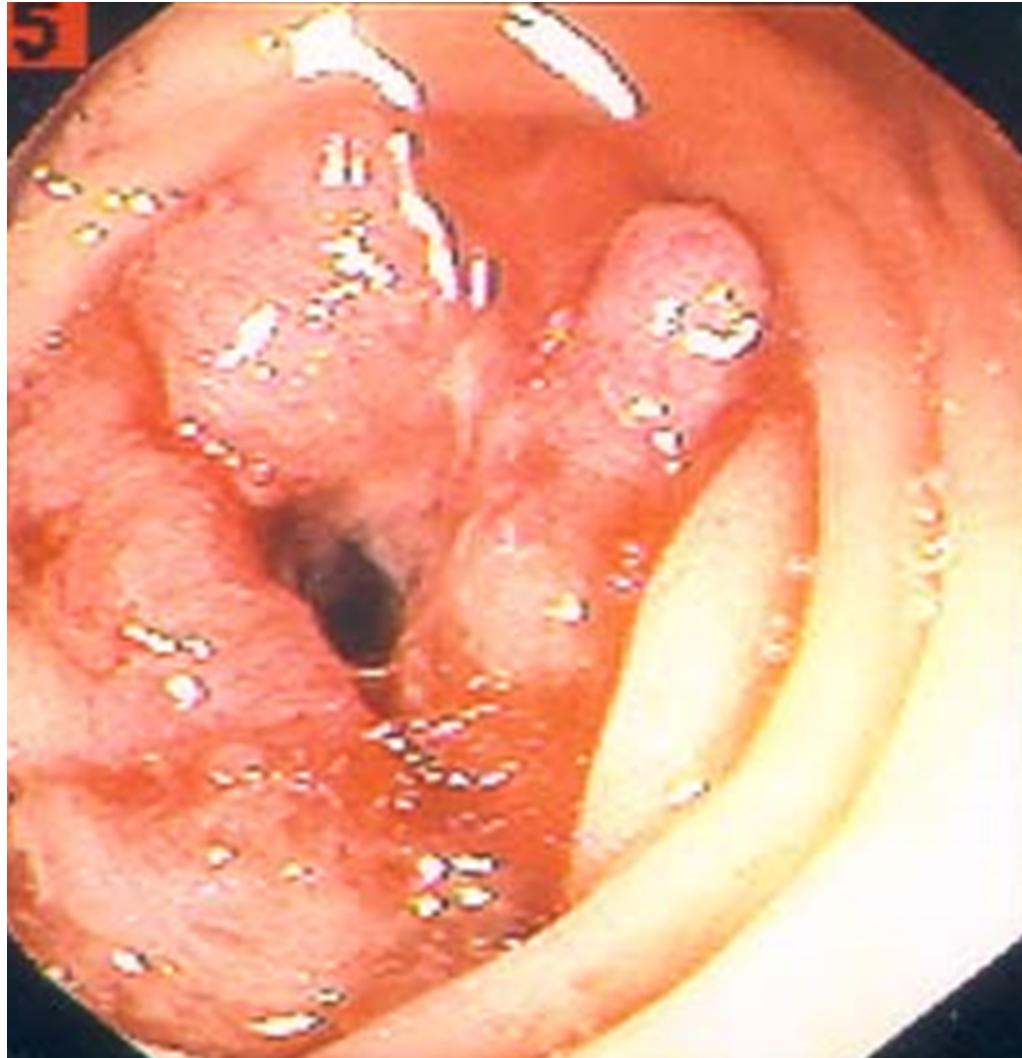




# Duodenal Stent for Gastric Outlet Obstruction



# Obstructive colonic cancer

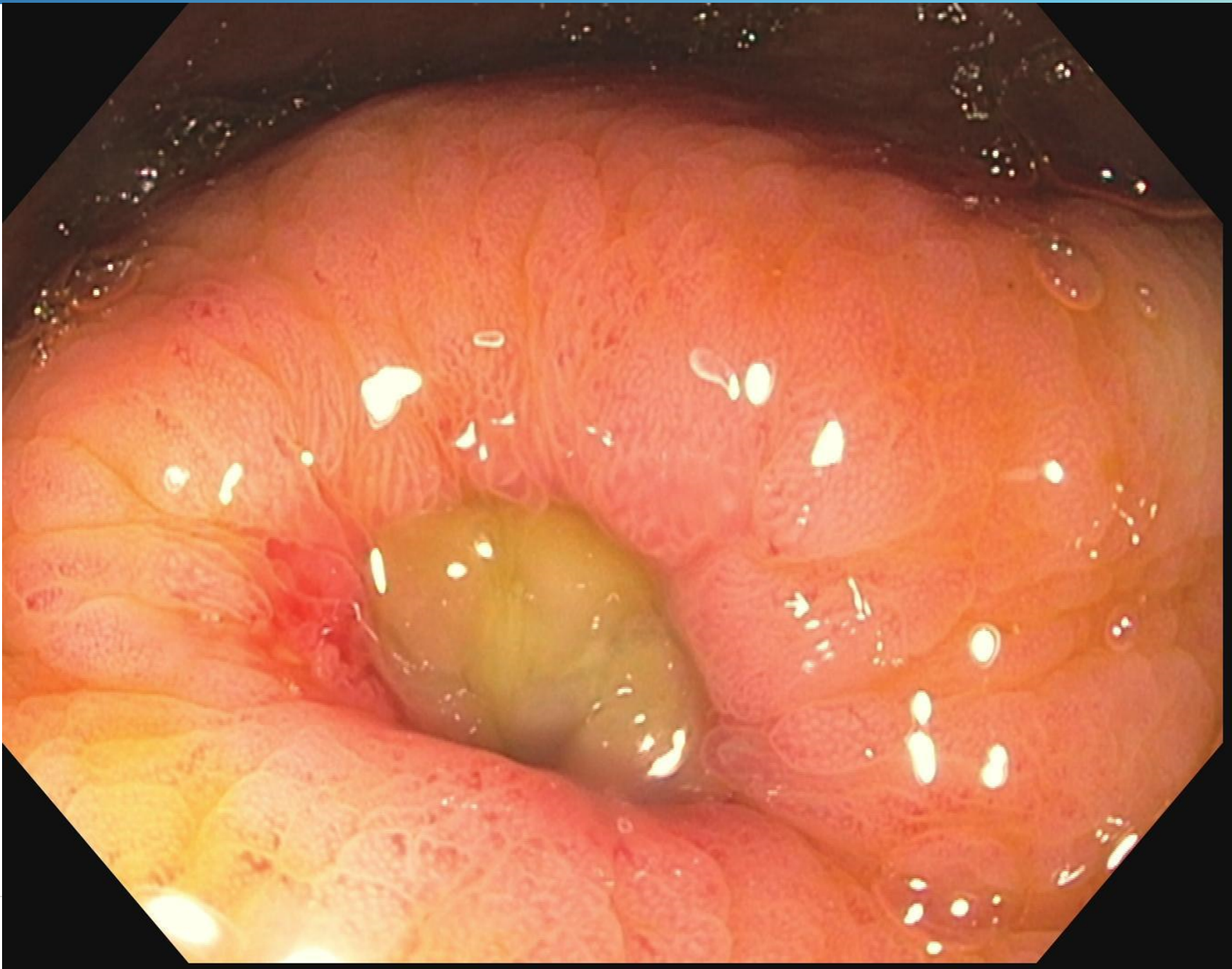


# Colonic stent

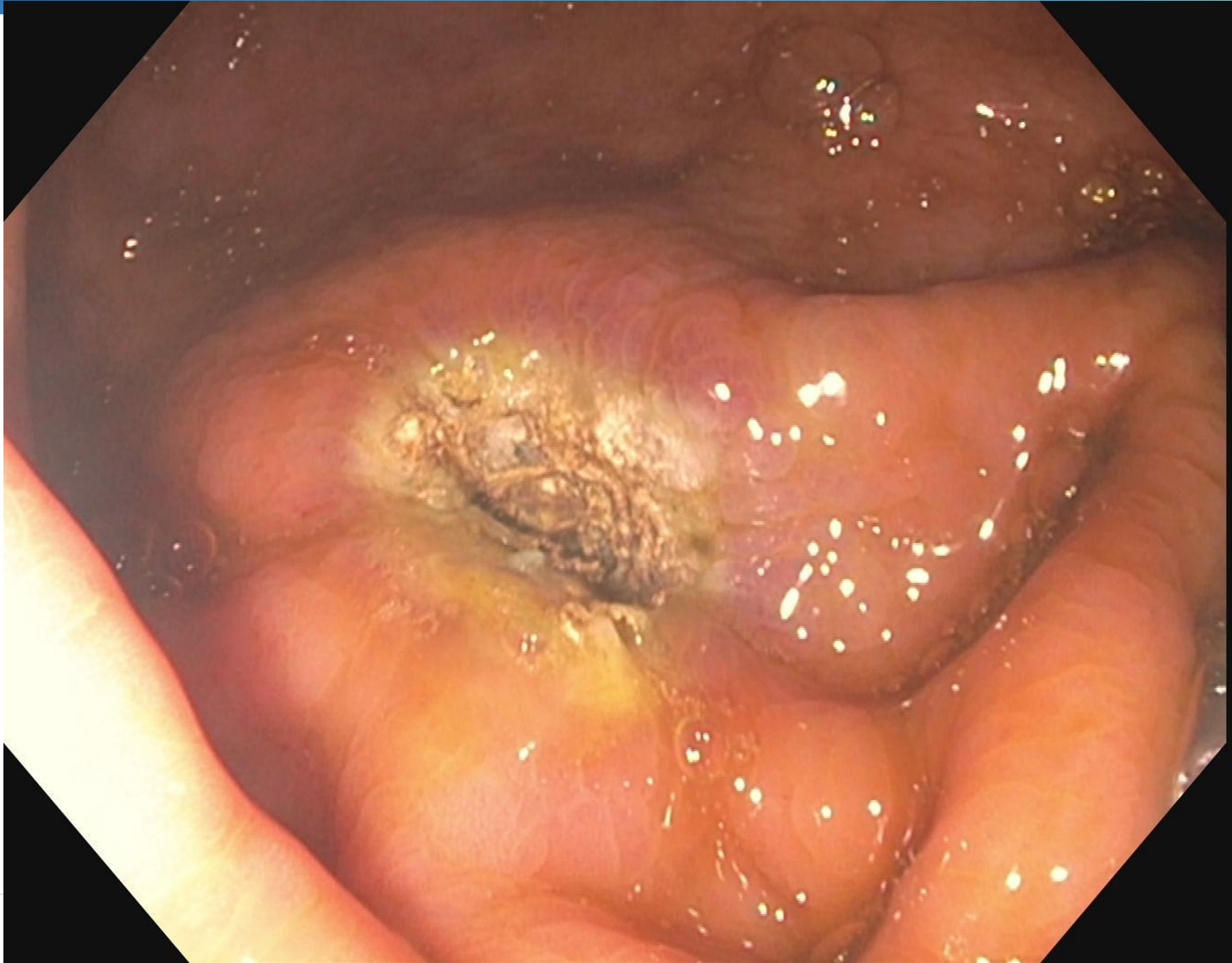


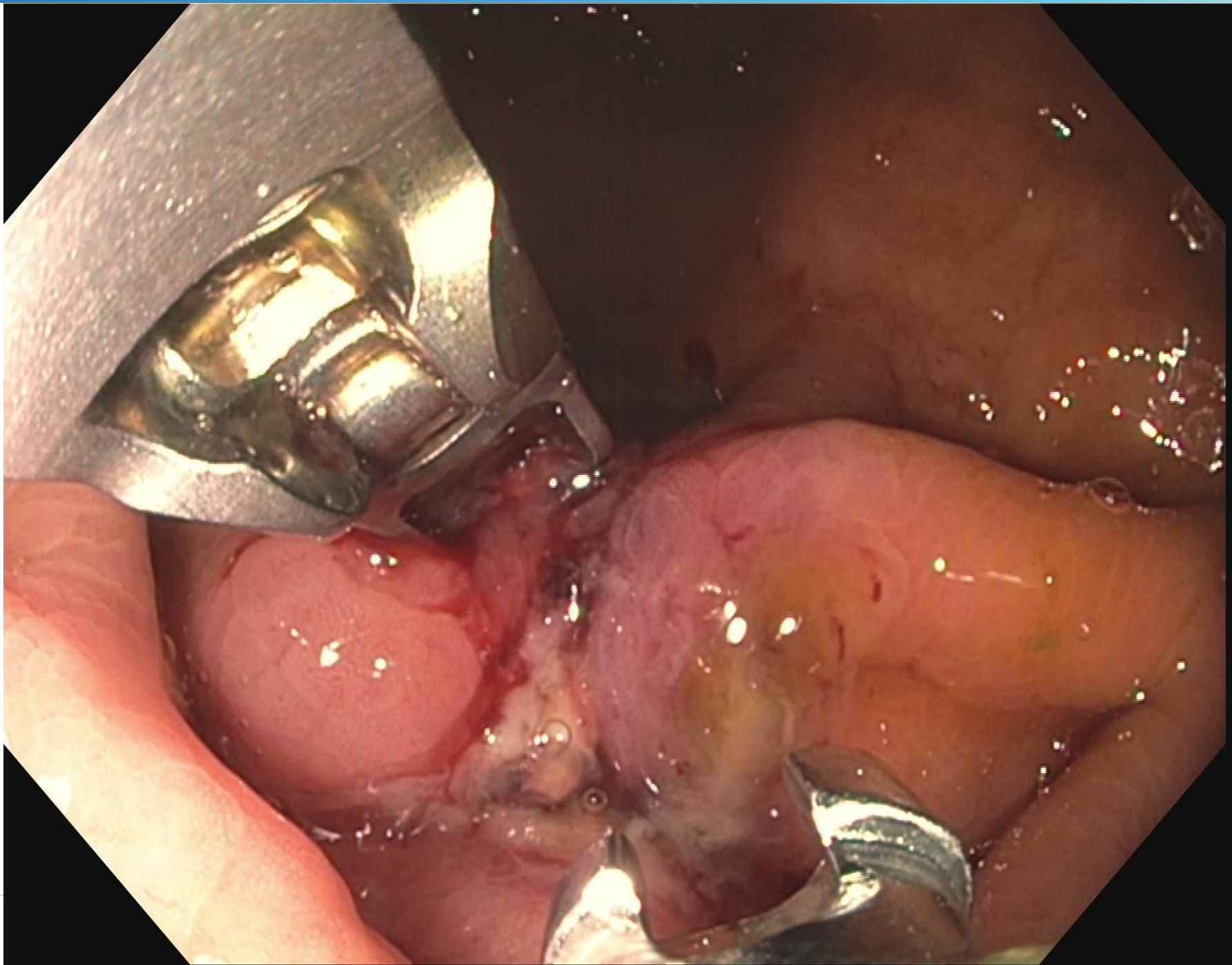
# Endoscopic suturing of malignant fistulas



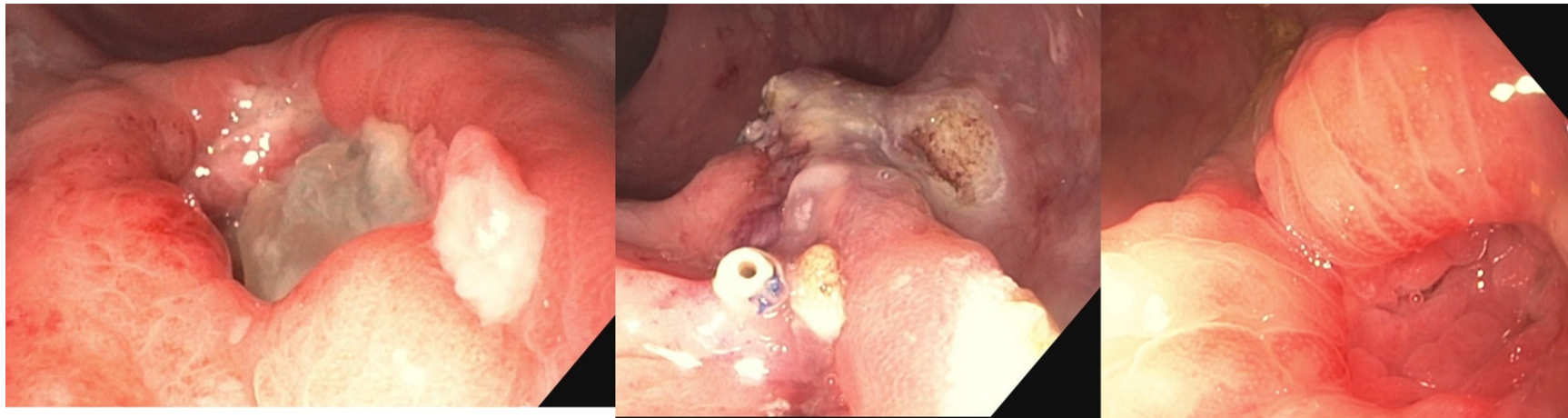








# Endoscopic repair of a rectal fistula



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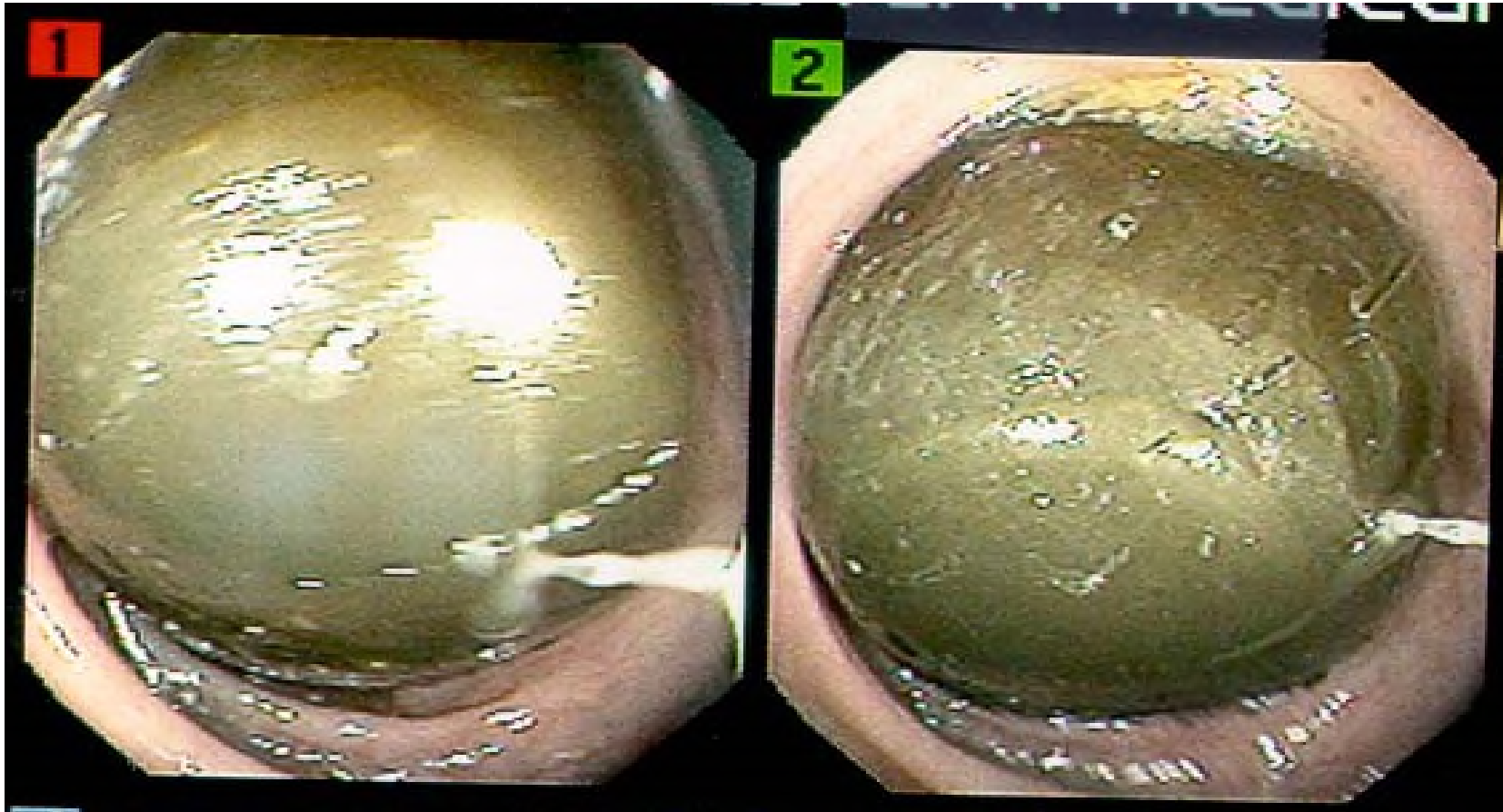


# Questions?





**Guess ?**  
**Prize: A Free Bahamas Cruise for Two\***

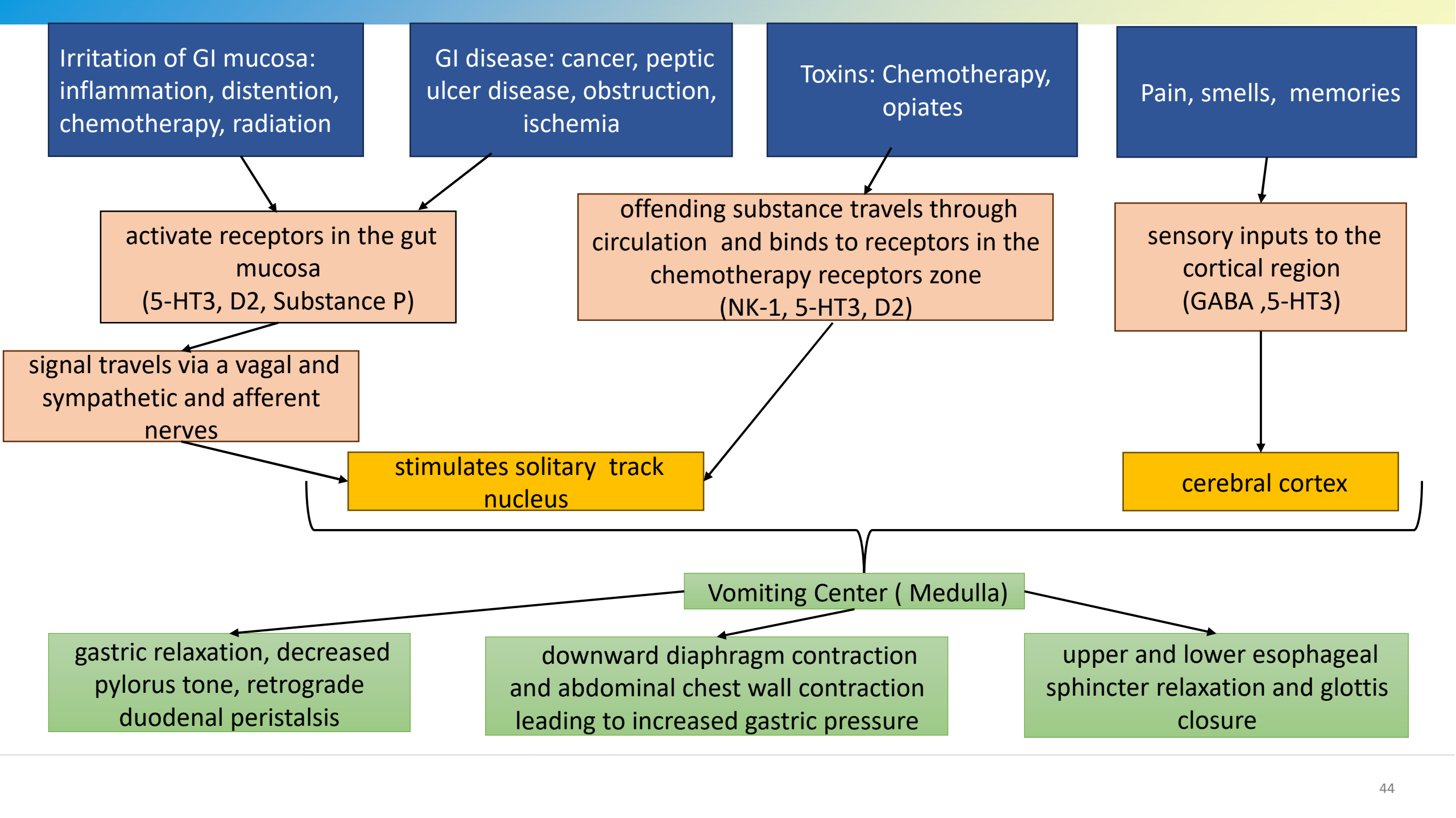


\* You pay for your own plane fare and paddle your own boat. Cruise ship excluded.



# Symptom Management/ Nutritional Support

- Nausea
  - Etiology
  - ASCO Guidelines
  - NK-1 Antagonist
- Constipation
  - Classes of medications
- Nutritional Support
  - PN Palliative Guidelines



Irritation of GI mucosa: inflammation, distention, chemotherapy, radiation

GI disease: cancer, peptic ulcer disease, obstruction, ischemia

Toxins: Chemotherapy, opiates

Pain, smells, memories

activate receptors in the gut mucosa (5-HT3, D2, Substance P)

offending substance travels through circulation and binds to receptors in the chemotherapy receptors zone (NK-1, 5-HT3, D2)

sensory inputs to the cortical region (GABA, 5-HT3)

signal travels via a vagal and sympathetic and afferent nerves

stimulates solitary tract nucleus

cerebral cortex

Vomiting Center ( Medulla)

gastric relaxation, decreased pylorus tone, retrograde duodenal peristalsis

downward diaphragm contraction and abdominal chest wall contraction leading to increased gastric pressure

upper and lower esophageal sphincter relaxation and glottis closure

# ASCO Guidelines

1. NK1 receptor antagonist
2. Serotonin (5-HT3) receptor antagonist
3. Dexamethasone
4. Olanzapine

Dopamine receptor antagonists	5-HT3 receptor antagonists	Dopa-5-HT3 receptor antagonists	NK-1 receptor antagonists
Butyrophenones	Azasetron	Metoclopramide	Aprepitant (MK-869)
Olanzapine	Dolasetron (not recommended for use per FDA)		Fosaprepitant
Phenothiazines	Granisetron		Casopitant
	Olanzapine		Netupitant
	Ondansetron (intravenous dose restriction per FDA)		Rolapitant
	Palonosetron		
	Ramosetron		
	Tropisetron		

# NK-1 Antagonist

- **Fosaprepitant (IV)**
  - Converted to Aprepitant within 30min of infusion
- **Aprepitant ( PO and IV)**
- **Rolapitant (PO)**
  - Half Life 180 Hours although takes longer to achieve therapeutic concentrations
- **Netupitant/ palonosetron ( PO)**
- **Indications**
  - Post OP and Chemotherapy Induced Nausea and Vomiting
  - Prevents delayed nausea and improves the efficacy of standard antiemetic regimens in patients receiving multiple cycles of chemotherapy<sup>10</sup>
- **CYP3A4 inhibition**
  - warfarin (monitor therapy); ivabradine (avoid combination); antifungals such as ketoconazole and itraconazole; lansoprazole; clarithromycin; diltiazem; carbamazepine; HIV protease inhibitors ,docetaxel, etoposide, ifosfamide, imatinib, irinotecan, paclitaxel, tamoxifen, vinblastine, vincristine, and vinorelbine; rifampin; tolbutamide

# Constipation

## Osmotic Laxatives

- **Polyethylene glycol**
  - 10-20g/Day
  - PEG>Lactulose <sup>5</sup>
- **Lactulose**
  - 10-20g/Day
  - Fermented by colonic bacteria → Bloating

## Saline Laxatives

- **Magnesium citrate/sulfate**
- 20 mmol daily
- Warning in cardiovascular and renal disease patients

## Fiber

- **Psyllium ( soluble)**
  - Max 35g daily
  - Increases defecation frequency, weight and consistency of stool, and lower tenderness of pain in defecation
  - Undesirable discomfort, flatus, or bloating
  - Does NOT improve transit time <sup>6</sup>
- **Bran ( Insoluble)**
  - Improves transit time but less efficacious
  - Same undesirable discomfort, flatus, or bloating

# Constipation

- **Stimulants**

- Stimulate intestinal motility by Auerbach and myenteric plexus, and increase water and electrolyte secretion to the intestinal lumen <sup>7</sup>
- Taken about half an hour after breakfast for the purpose of synchronizing gastrocolic response with medication effect
- **Examples: Senna** and **casacara** and the most popular **bisacodyl**.
  - Side Effects: cramping and diarrhea

- **Secretagogues**

- Modulating ion channels of epithelium to enhance colonic secretion and improve colonic transit
- **Lubiprostone**: chloride channel protein 2 and causes secretion of the chloride into intestine
- **Linacotide**: activates guanylate cyclase-C receptors what leads to sodium absorption and chloride and bicarbonate secretion
  - Side effects: diarrhea, headaches, stomach pain



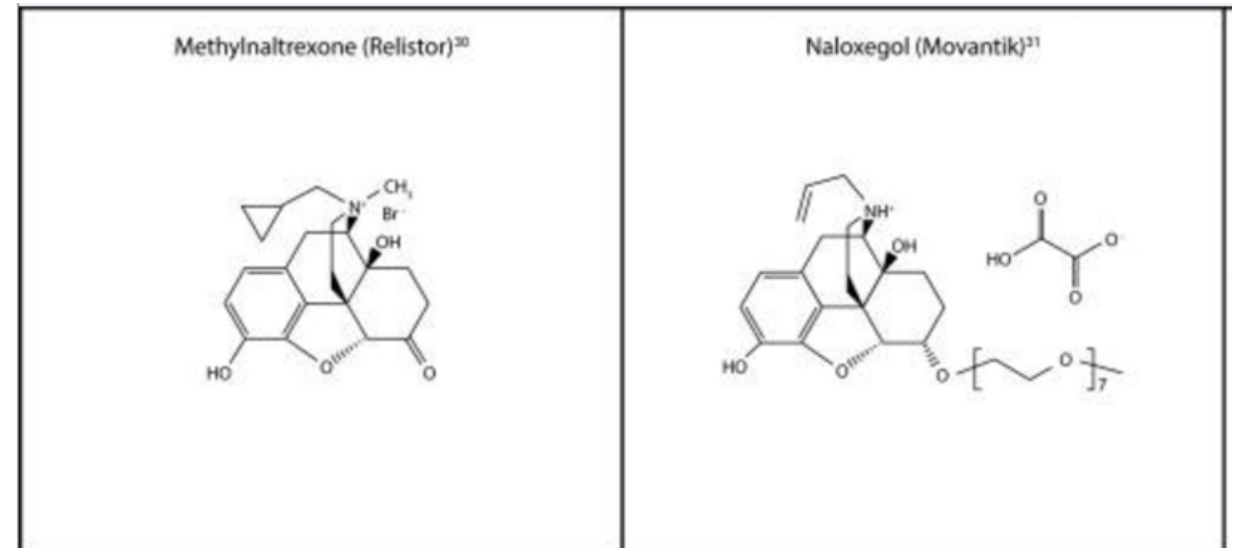
# Constipation

## Serotonergic Agonists

- Activating 5-hydroxytryptamine receptor 4 (5-HT<sub>4</sub>) located in the gastrointestinal tract, stimulate secretion of the intestine and its motility
- **Prucalopride ( Motegrity)**
  - Safe for patients with cardiovascular diseases
  - Improves anorectal and abdominal symptoms such as pain, bloating, and distension <sup>8</sup>

## Peripherally acting mu-opioid receptor antagonists

- **Methylnaltrexone, Naldemedine, and Naloxegol**
- No clinically significant opioid withdrawal has been observed in studies <sup>9</sup>



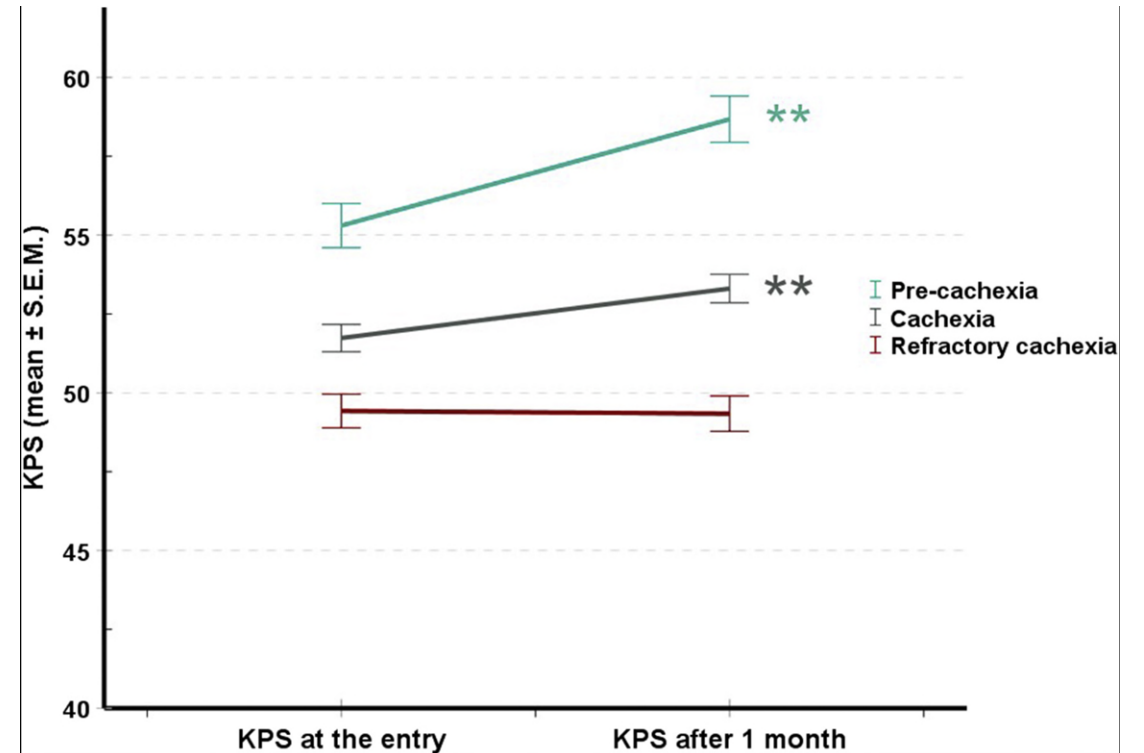
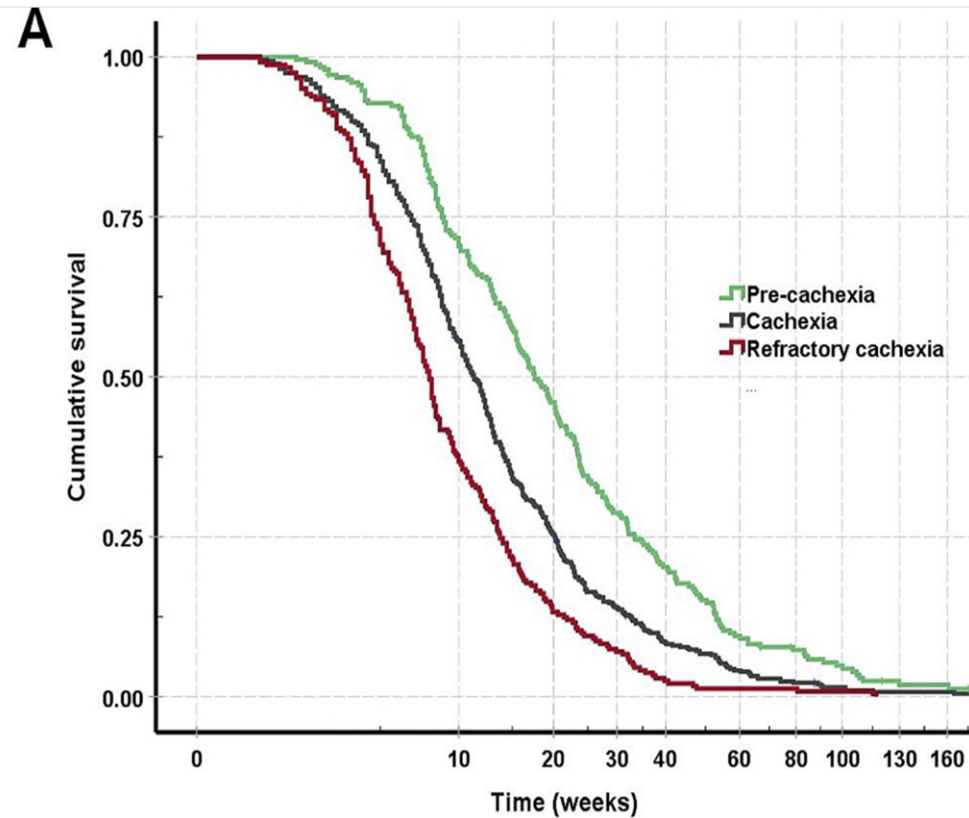
# Parenteral Nutrition(PN) Guidelines in Palliative Care

- Principal indications: inoperable malignant bowel obstruction, severe mucositis due to cancer treatments, malabsorptive syndromes, intractable nausea and vomiting, life-expectancy of >2 months whom enteral nutrition is not feasible
- Do not use PN solely to treat poor oral intake and/or cachexia associated with advanced malignancy.
- Evaluate clinical factors and performance status when selecting candidates for PN at the end of life.
- Involve patients and caregivers in a clear and complete dialogue regarding realistic goals of PN as well as the potential risks and burdens of therapy.

# What is the Diagnosis/Prognosis and what is the Goal?

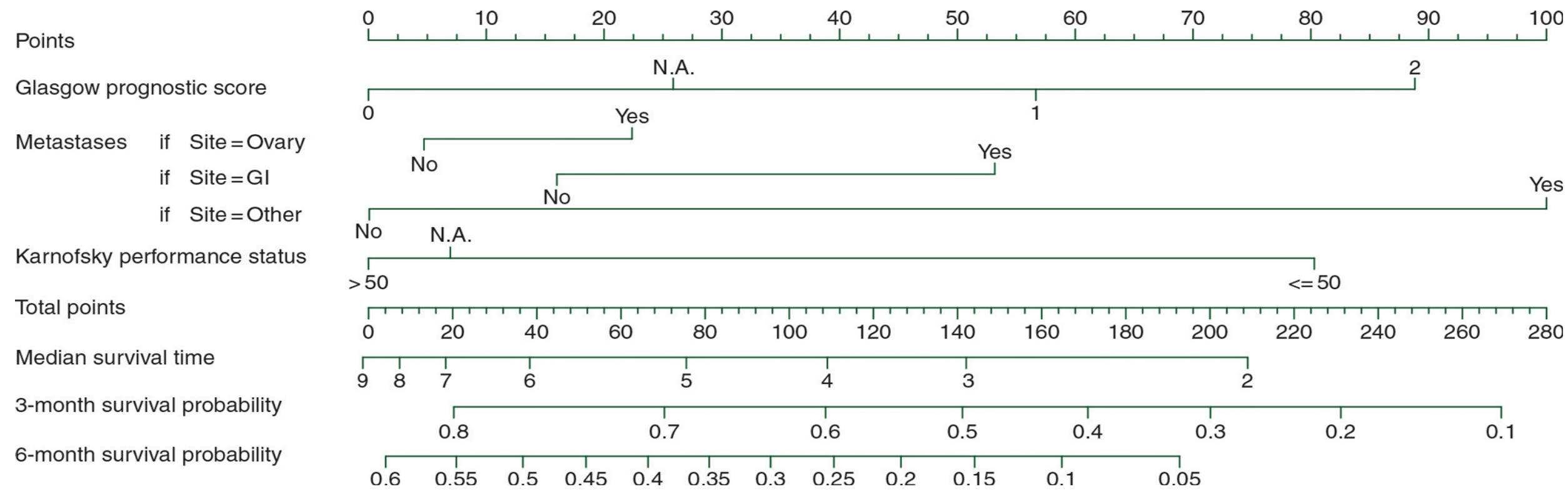
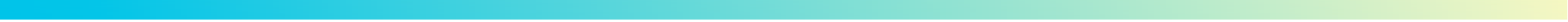
- 2015 systematic review of survival, quality of life, and cost-effectiveness of home PN in patients with inoperable MBOs, found a mean survival rate of 116 days <sup>(1)</sup>
  - KPS >50% had longer survival time than those <50% (median survival 183 vs. 91 days)
- 414 palliative cancer patients receiving PN at home and with a life-expectancy of >6 weeks at time of initiation, 50% of patients survived for 3 months while 22.9% of patients survived to 6 months <sup>(2)</sup>
- Ensuring to elicit the patients goals prior to initiation can set expectations and timeline for use.
  - Frequent Blood Draws
  - Frequent medical visits
  - Requirement of invasive IV line
  - Limited travel due to delivery and storage
  - Risk for infection
  - Risk of Thrombophlebitis

# Prognosis and Quality<sup>3</sup>



**B**

	N	Estimated survival time (weeks)		Hazard ratio		
		Mean (St.Dev.)	Median (95% C.I.)	B coefficient	Odds ratio (95% C.I.)	p
Pre-cachexia	199	28.7 (35.9)	19.3 (16.0-22.6)	-	-	-
Cachexia	453	17.1 (20.3)	11.3 (10.3-12.3)	.480	1.6 (1.4-1.9)	<.001
Refractory cachexia	238	11.9 (13.8)	7.8 (7.2-8.5)	.865	2.4 (1.9-2.9)	<.001



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