When and How to Tattoo

Friday November 1, 2019
Colonoscopy Education Day

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Disclosures

- No disclosures

Outline

- When
- Why
- Where
- How to effectively tattoo

Recently in Kelowna

- When: after you dared your friends they couldn’t raise $10,000 for charity…

And they did

- Why: because you’re a good guy
- Where: left back
- How: get an expert
- ….not that kind of tatoo…

Recommended by:

- American College of Gastroenterology
- European Society of Gastrointestinal Endoscopy
- British Society of Gastroenterology
- Society of American Gastrointestinal Endoscopic Surgeons (SAGES)

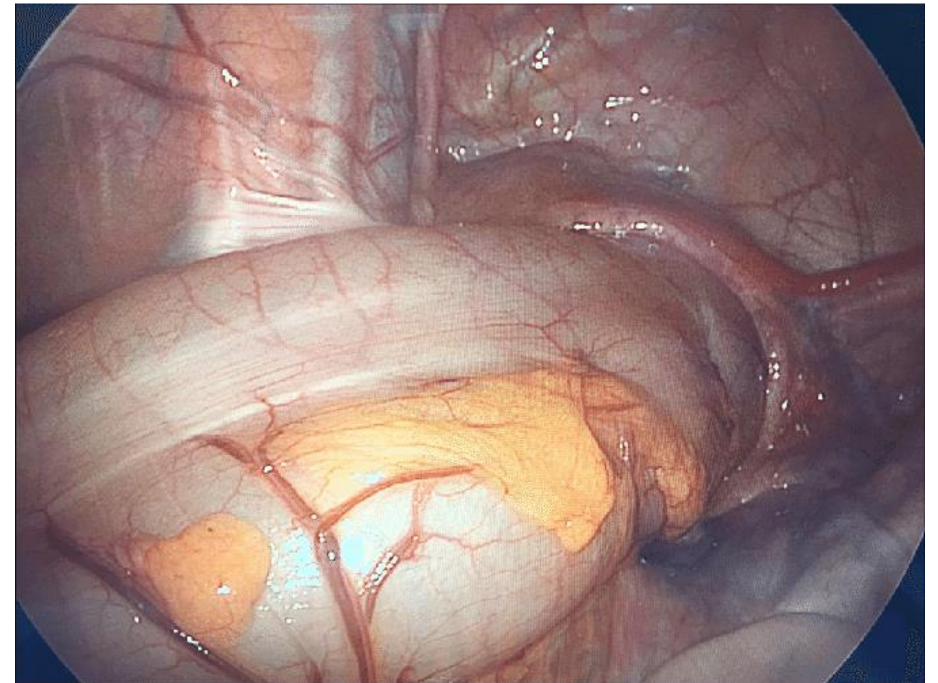
Rex D, Schoenfeld P, Cohen J, et al. Quality Indicators for Colonoscopy. Am J Gastroenterol. 2014: 1-19.
Ferlitsch M, Moss A, Hassan C, et al. Colorectal polypectomy and endoscopic mucosal resection (EMR): ESGE Clinical Guideline. 2017.
Rees C, Bevan R, Zimmerman-Fraedrich K, et al. Expert opinions and scientific evidence for colonoscopy key performance indicators. Gut BMJ. 2016.
SAGES. Guidelines for laparoscopic resection of curable colon and rectal cancer. 2012.

Why

Why Tattoo

- To identify the area of interest
- Future colonoscopy:
  - Suspicious lesion – removed, referred
  - Location
  - Communication
  - Monitoring
- Surgery
  - Laparoscopic identification
  - Open identification
  - Prevents intraoperative colonoscopy, reduces operative time

Laparoscopic tattoo



When

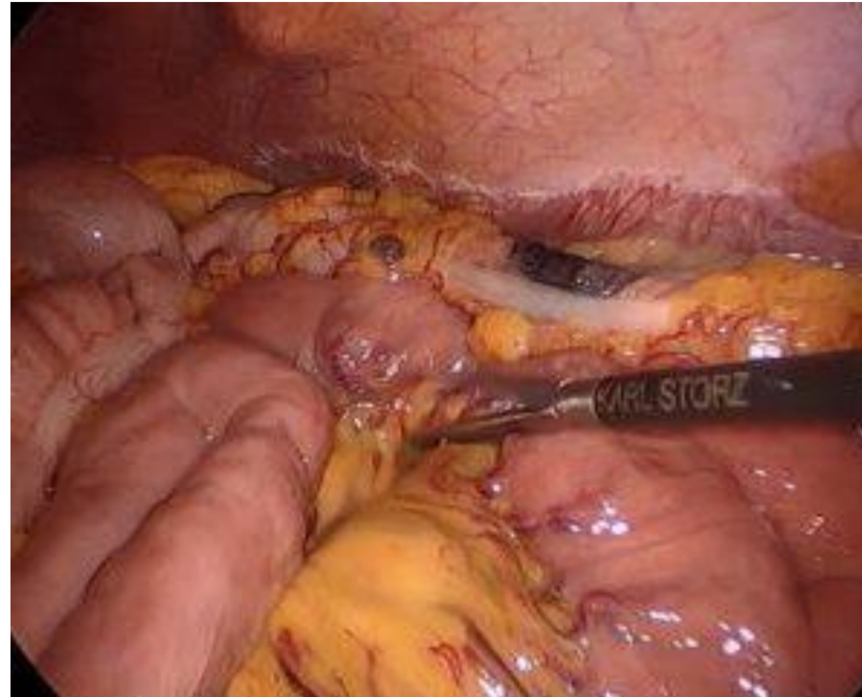
When to Tattoo

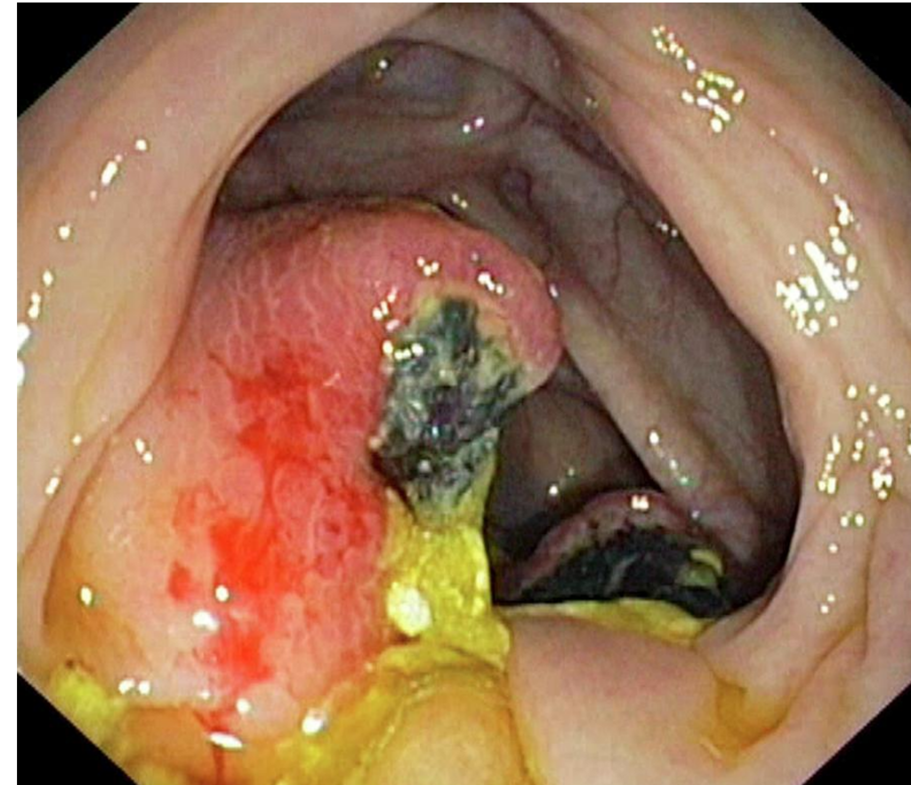
- Obvious colorectal cancers
- Lesions with suspected cancer
- Pedunculated adenomas with endoscopic features of cancer
- Large size (such as ≥2 cm)
- Large flat or sessile lesions removed piecemeal
- Large polyps deemed endoscopically unresectable

Arteaga-Gonzalez I, et. al., The use of preoperative endoscopic tattooing in laparoscopic colorectal cancer surgery for endoscopically advanced tumors: a prospective comparative clinical study. World J Surg. 2006. 30(4):605–611.
Acuna SA, et. al., Preoperative localization of colorectal cancer: a systematic review and meta-analysis. Surg. Endosc. 2017; 31:2366-2379.

When to Tattoo

- Location
  - Cecum
  - Rectum
  - Rest of colon
- Photographs





Wexner, S.D., et al., Laparoscopic colorectal surgery–are we being honest with our patients? Dis Colon Rectum, 1995. **38**(7): p. 723-7.

Piscatelli, N., N. Hyman, and T. Osler, Localizing colorectal cancer by colonoscopy. Arch Surg, 2005. **140**(10): p. 932-5.

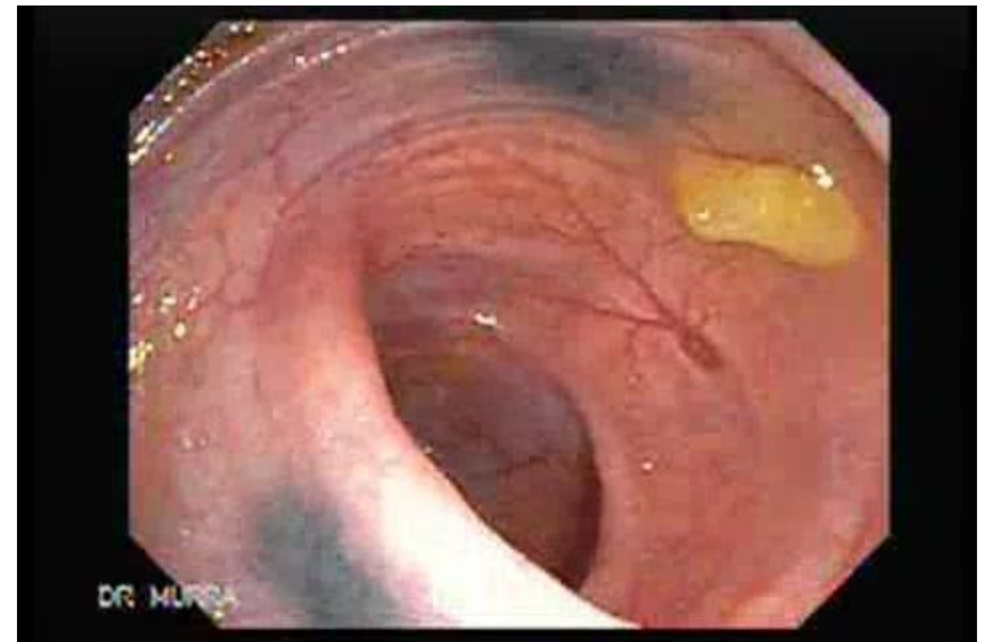
Complications of Tattooing

- Sterile abscess formation
- Focal peritonitis – adhesions
- Inflammatory pseudotumor
- Rare
- Associated more India Ink than SPOT (pure carbon black)

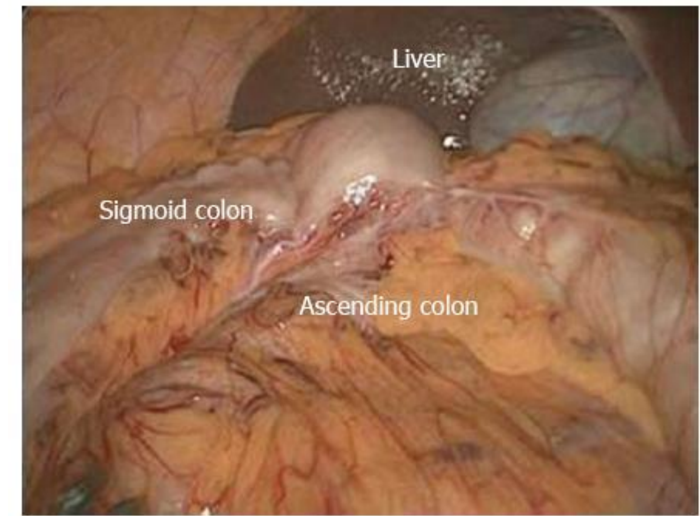
Nizam R, Siddiqi N, Landas SK, et al. Colonic tattooing with India ink: benefits, risks, and alternatives. Am J Gastroenterol 1996;91:1804-8.

Where to Tattoo

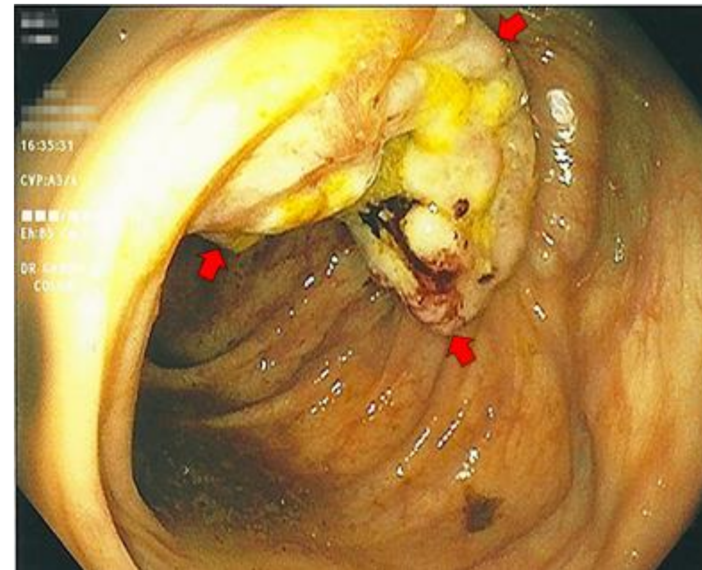
- What is the purpose of the tattoo
- Future endoscopic follow up
  - Just distal to the lesion
  - Not too close – Scar and submucosal fibrosis

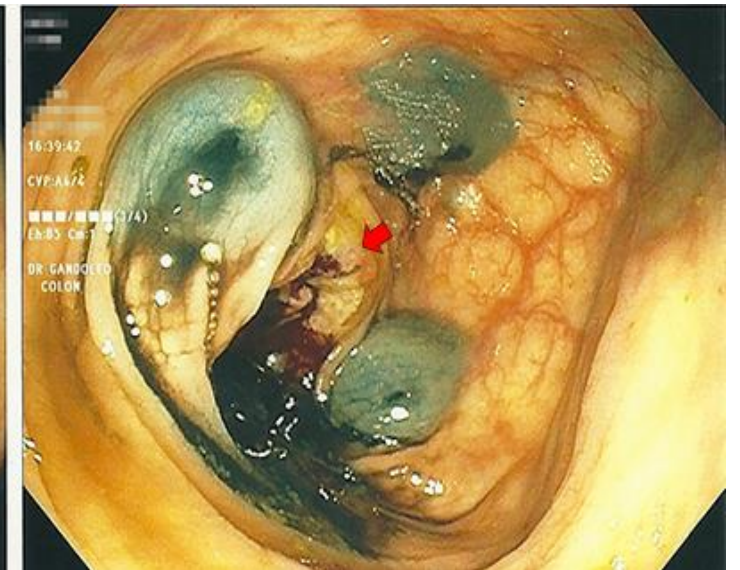


Where to Tattoo



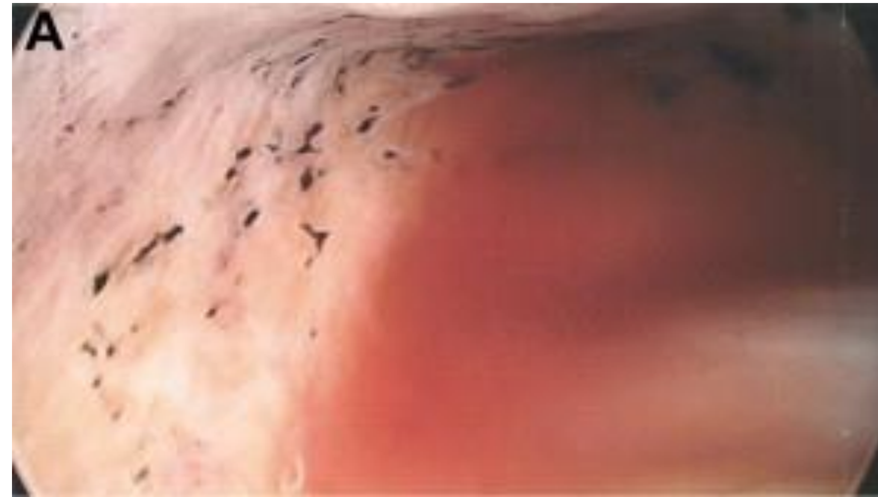
- Surgical identification
  - Just distal (anatomically)
  - Multiple areas at same height
    - Mesentery
  - NOT proximal and distal
  - Document





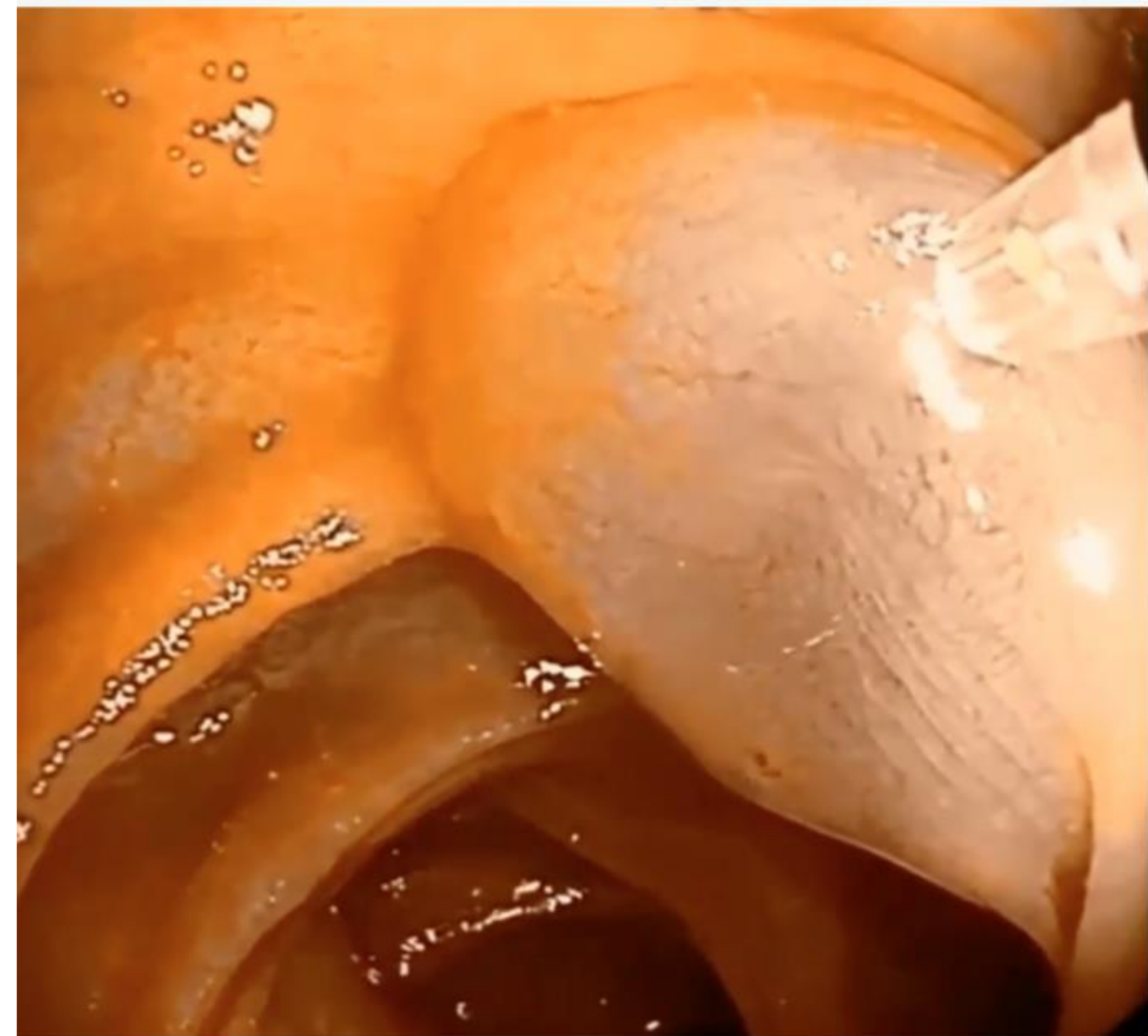
How to Tattoo

- Goal: inject India Spot into submucosal space
- Transmural injections



Method 1 - Bleb

- Inject saline ~1mL in 3-4 areas circumferentially (especially for surgery)
- Then inject Spot tattoo into the saline bleb (~0.5mL)



Credit: Dr. Donald Rex

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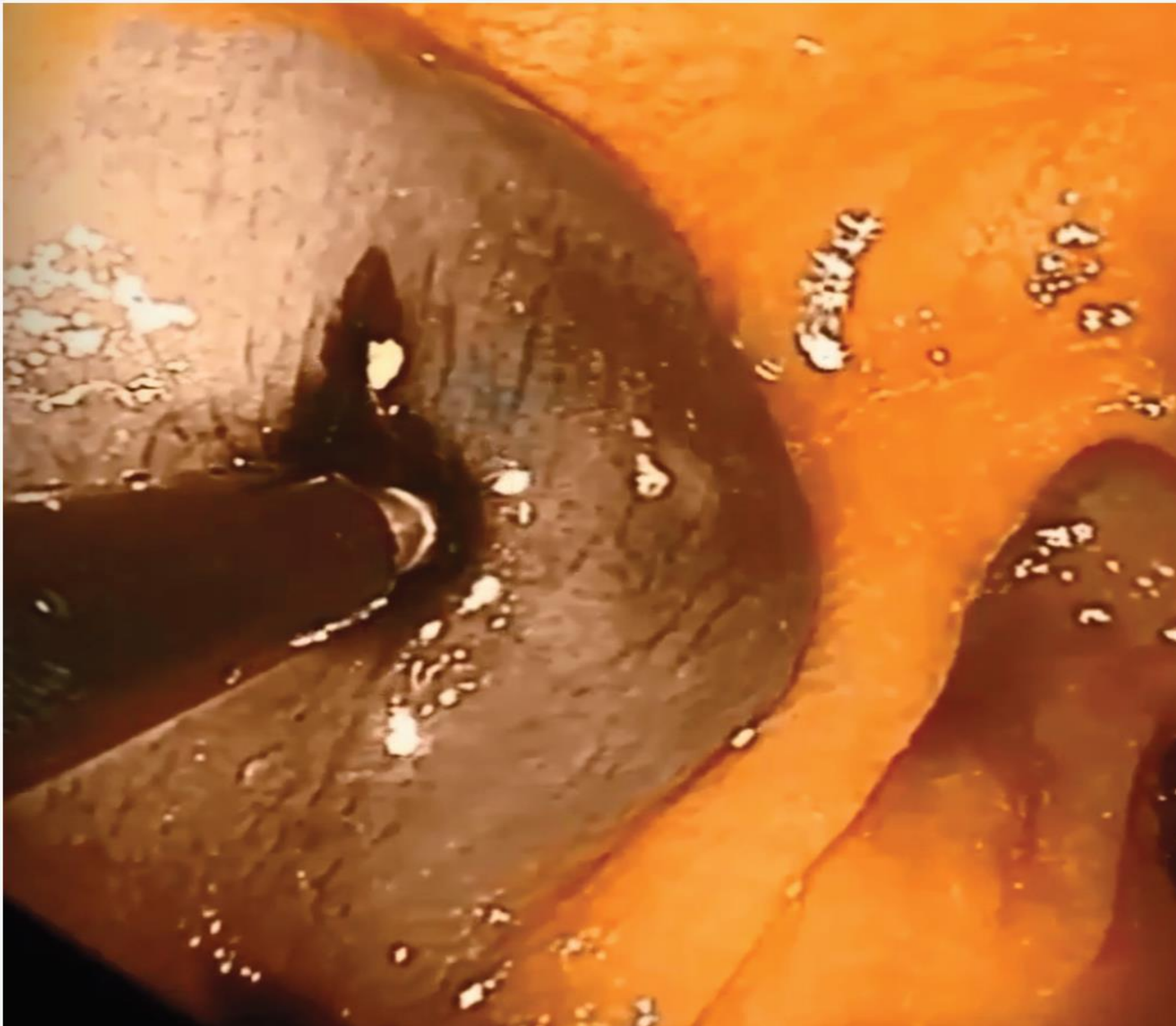
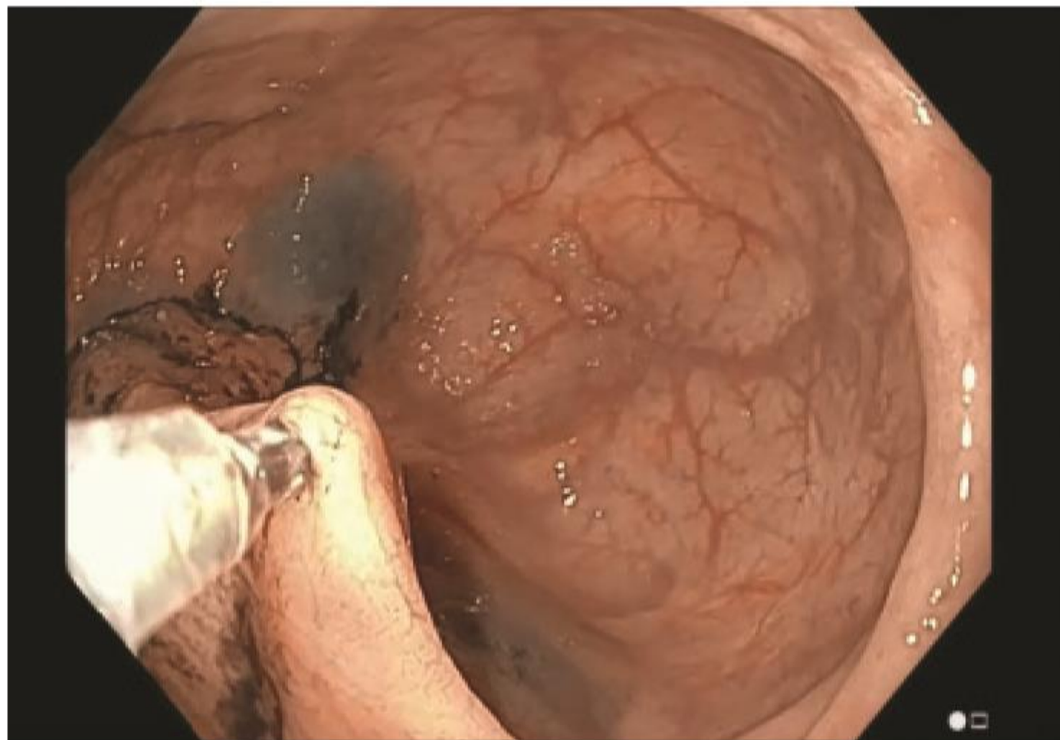
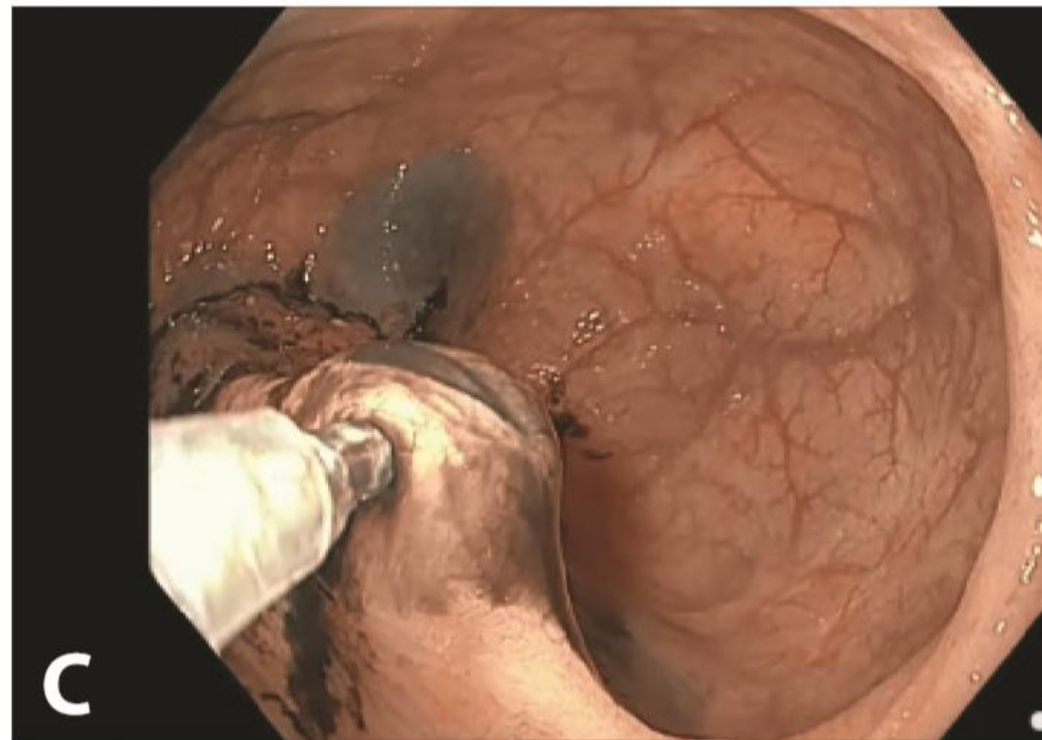


Method 2 - Direct

- Direct injection of the tattoo into the submucosa
- Tangential approach to mucosa when inserting the needle
- Lift the needle toward the center of the lumen
- Correct position if:
  - Shape of the needle visible through the mucosa
  - Start with small amount
- Volume at each site about 1mL

Direct method





Documentation

- List the number of tattoo sites in the colon
- List the location of the tattoo in relation to the lesion
  - Should be distal
  - NOT proximal and distal
- List the purpose of the tattoo at each site

Thank you

- Questions?