Management and prevention of endoscopy complications

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ASEP Conference
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Learning objectives:

- Become familiar prevention of post-endoscopic bleeding
- Prevention and early recognition of intestinal perforation
- Other complications
- Sedation issues (for discussion?)
- Take home messages

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Endo Skills 2023: Faculty/Presenter Disclosure

- **Presenter: Daniel Sadowski**
- **Relationships that may introduce potential bias and/or conflict of interest:**
  - **Grants/Research Support: None**
  - **Speakers Bureau/Honoraria: None**
  - **Consulting Fees: None**
  - **Other: Quality Lead Alberta Colorectal Cancer Screening Program**

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Case 1

- 70 yo male – referred for colonoscopy because of positive FIT
- History of non-valvular A.Fib. CHADS = 2
- On ASA 81 mg daily
- On Xaralto – 20 mg daily with dinner
- CRF – sCreat – 200 umol/L
- How would you manage this patient's medications peri-operatively?

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American College of Gastroenterology-Canadian Association of Gastroenterology Clinical Practice Guideline: Management of Anticoagulants and Antiplatelets During Acute Gastrointestinal Bleeding and the Periendoscopic Period.

Abraham NS, Barkun AN, Sauer BG, Douketis J, Laine L, Noseworthy PA, Telford JJ, Leontiadis GI.

Am J Gastroenterol. 2022 Apr 1;117(4):542-558. doi: 10.14309/ajg.0000000000001627.

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High-risk Procedures	Low Risk Procedures
Polypectomy/ colonoscopy	Diagnostic (EGD, colonoscopy, flexible sigmoidoscopy) including biopsy
Biliary or pancreatic sphincterotomy	ERCP without sphincterotomy
Pneumatic or bougie dilation	EUS without FNA
PEG placement	Enteroscopy and diagnostic balloon-assisted enteroscopy
Therapeutic balloon-assisted enteroscopy	Capsule endoscopy
EUS with FNA	
Enteral stent deployment (without dilation)	ULTRA- HIGH RISK:
Tumor ablation by any technique	Endoscopic submucosal resection
Cystogastrostomy	EMR of lesions >2cm
Treatment of varices	POEM

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Risk of Thromboembolism if anticoagulation is withheld

- Low
  - AF with CHADS2 Score 0-2
  - Bioprosthetic valve or mechanical aortic valve
  - Previous remote DVT (> 3 months)

- High
  - Recent CVA/TIA (<3 months)
  - AF with CHADS2 - >2
  - DVT/PE in last 3 months
  - Mechanical mitral valve
  - Severe/multiple thrombophillic abnormalities
  - Recent placement of coronary stent (<12 months DES, <1 month for bare metal stent)

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Bleeding vs. Thrombosis

	Low Procedural Bleeding Risk	High Procedural Bleeding Risk
Low risk of Thrombosis or Embolism	Continue anti-thrombotic agents	Stop anti-thrombotic agents
High Risk of Thrombosis or Embolism	Continue anti-thrombotic agents	Stop anti-thrombotic agents (consider bridge therapy)

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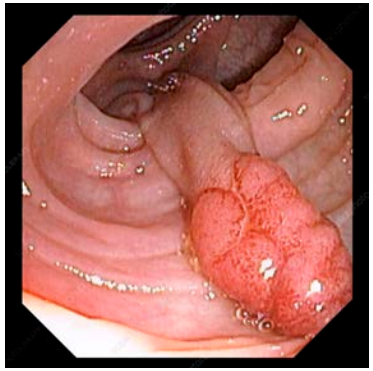
Case 1

- ASA was continued for procedure
- Xaralto was held for 48 hours prior to the procedure
- You find a 2 cm pedunculated polyp in the descending colon
- Your next steps?



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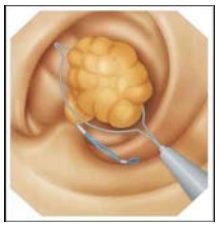
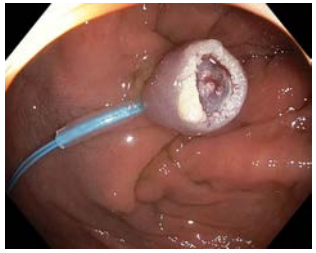
Endoloops





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Endoloops

- Should be considered for large (>2 cm pedunculated polyps)
- Contraindicated for sessile and thin stalk polyps
- Can be difficult to apply pre-polypectomy:
  - Short stalk
  - Needs to be well away from the polyp head (entrapping large polyp head common)
  - Visibility of stalk base can be poor with large polyp size

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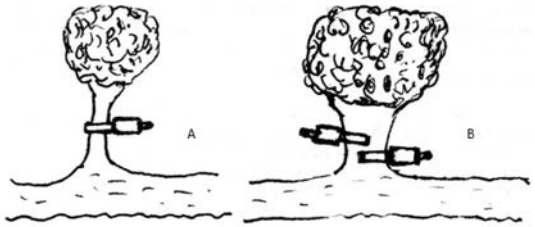
Hemoclips



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Hemoclips

- For large pedunculated polyps, it can be difficult to grasp the entire thickness of the stalk
- Contact between electrocautery snare and clip can produce wall burns
- ?closure of large mucosal defects to prevent delayed bleeding

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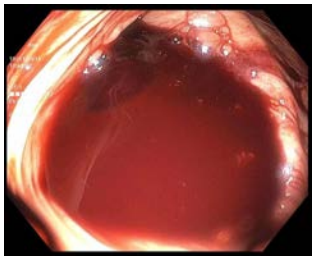
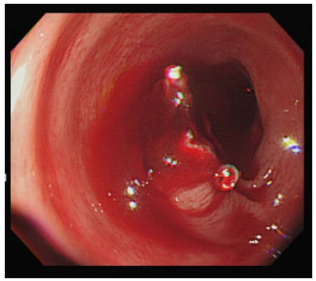
You decide to take off the polyp with hot snare. Polypectomy successful but pulsatile bleeding observed from the residual stalk





- Immediate Post Polyp Bleeding – what to do?

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Immediate Post Polyp Bleeding in a pedunculated polyp: what to do?

- **Reposition patient to achieve good visibility**
- regrasp the pedicle with a snare and hold pressure on the residual stalk – may require up to 5 minutes of pressure
- endoscopic clip placement
- submucosal injection of epinephrine
- placement of endoloop
- for retracted stalk pedicle – thermal coagulation

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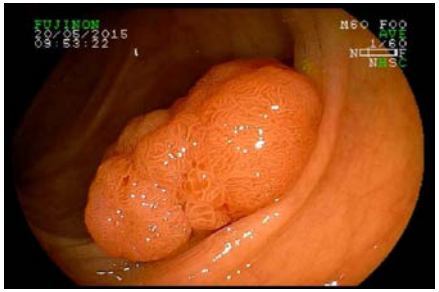
Case 1 (Alternate Universe)

- ASA was continued for procedure
- Xaralto was held for 48 hours prior to the procedure
- You find a 2 cm sessile polyp in the descending colon



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Which polypectomy techniques for sessile polyps will result in less bleeding?

- Sub-mucosal lift
- Cutting vs. coag current
- Epinephrine
- Clips
- Choice of snare?

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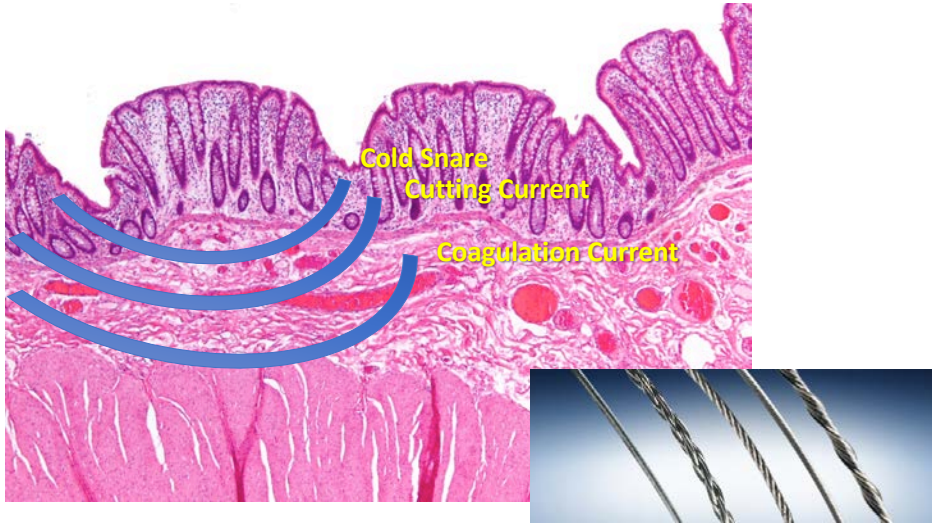

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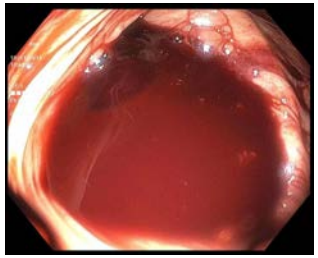
You decide do a mucosal lift with Eleview. You remove the polyp with a hot snare.
The polyp base begins to ooze blood.



- Immediate Post Polyp Bleeding – what to do?

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Immediate post-polypectomy bleeding after sessile polyp removal

- Reposition patient
- endoscopic clip placement
- thermal coagulation
- combine with epinephrine injection

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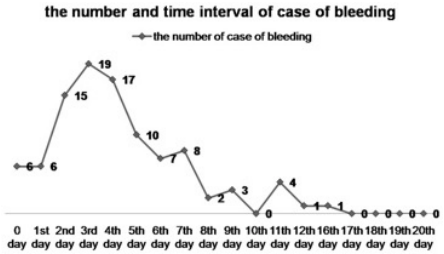
Delayed post polypectomy bleeding:



Zhang et al PLoS One. 2014; 9(10): e108290.

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Use of hemoclips to prevent delayed PP bleeding

- Lack of evidence for efficacy for polyps < 1 cm
  - I sometimes use for patients on DOACs
- I typically place clips resection of polyps ≥2 cm - especially if they are located in the right colon
- Epinephrine injection does not prevent immediate or delayed PP bleeding

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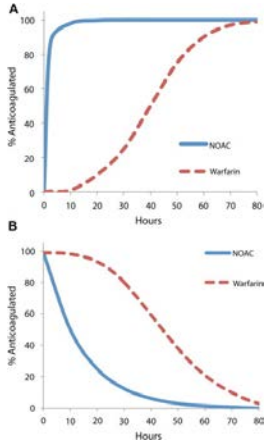

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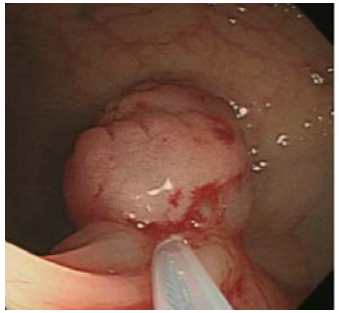
Case 2

- You do a colonoscopy for a 65 yo male with family history of colon cancer:



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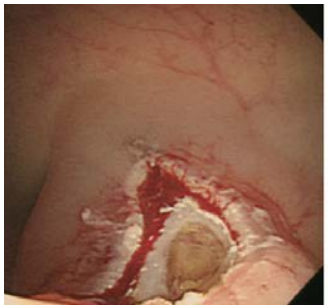

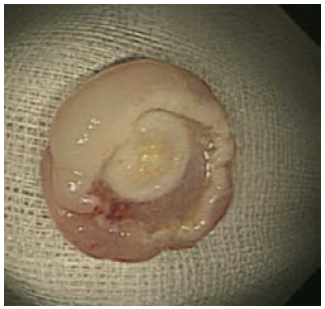

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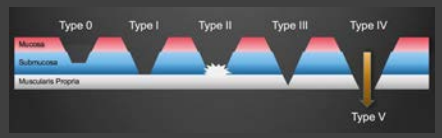
Sydney Classification of Deep Mural Injury (DMI) following EMR

Type 0	Normal defect. Blue mat appearance of obliquely oriented intersecting submucosal connective tissue fibres.
Type I	MP visible, but no mechanical injury.
Type II	Focal loss of the submucosal plane raising concern for MP injury or rendering the MP defect uninterpretable.
Type III	MP injured, specimen target or defect target identified
Type IV	Actual hole within a white cautery ring, no observed contamination
Type V	Actual hole within a white cautery ring, observed contamination



- Burgess NG, *et al*. *Gut* 2017;**66**:1779–1789.

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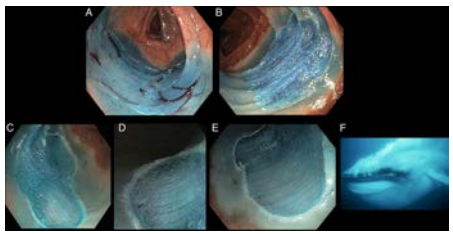

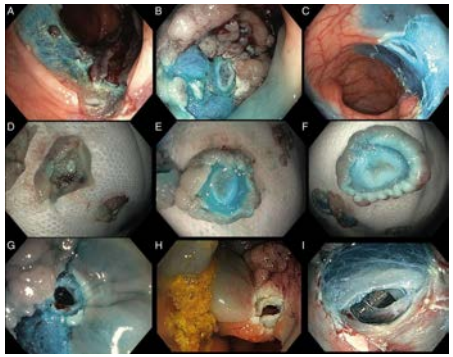

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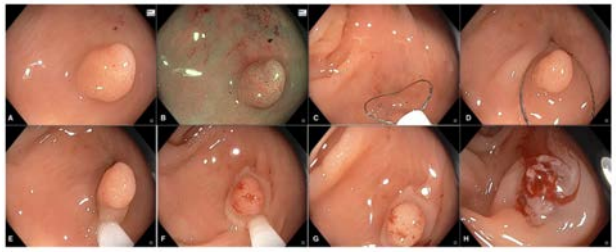
Cold Snare Resection Technique



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Case 3

- You perform a colonoscopy on a 23 year old female for diarrhea and weight loss. BMI 18.
- 5 minutes into the procedure, the patient experiences some discomfort
- You administer another dose of fentanyl and midazolam
- You complete the procedure to the terminal ileum with the patient on her left side
- No endoscopic findings. Patient requires another dose of fentanyl in recovery before discharge home.
- The patient calls your office the next day stating that she has significant pain in her epigastrium and back. She feels very weak.
- You would:
  - Tell her to go on clear fluid diet and wait to have a good bowel movement?
  - Prescribe buscopan?
  - Arrange to see her in your office the next day?
  - Arrange to meet in ER and arrange for abdominal CT scan?

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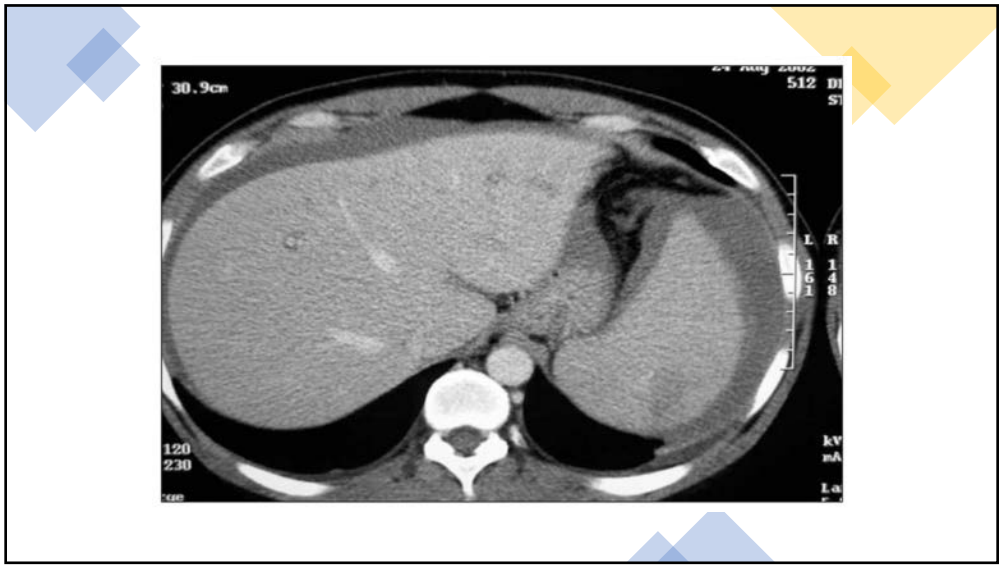

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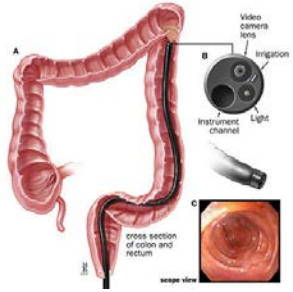
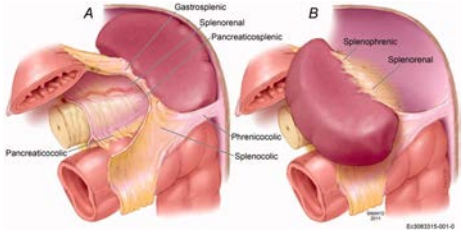
Splenic rupture





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Splenic rupture - prevention

- Reposition patient onto back in decending colon
- Reduce sigmoid loop as soon as possible
- Avoid mucosal slide-by at the splenic flexure

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