Sessile polyps

How to Assess and Optimize Removal

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Objectives

- Sessile polyps
  - Assessment and characterization
  - Endoscopy or surgery?
- Injection technique/Tattooing
- EMR vs ESD
  - Essentials of complex polypectomy

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Colon Cancer prevention

- CRC prevention is the basis of why we do colonoscopy and polypectomy
- How do we optimize our success at polyp detection and resection ?
  - High quality colonoscopy
  - Polyp assessment, complete resection*

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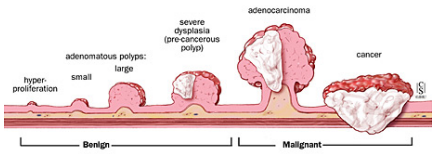
1.Winawer et al. NEJM 1993. 329:1977-1981
2.Zauber et al. NEJM 2012. 366:687-696

Colonic Adenomas



- >90% are <10mm in size, do not contain advanced histology and are readily treated by conventional means

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Classification of Polyps

- Endoscopy description is a key quality metric
- Location
  - Estimation of region vs. cm from anal verge
- Size
  - Use measurements (mm) NOT vague descriptors (e.g.. Diminutive, small, large, gigantic…)
- Morphology
  - Sessile, pedunculated, granularity
- Is it amenable to endoscopic resection?

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Endoscopy vs. Surgery

- Three major question
  - Is the lesion in an area that precludes EMR?
  - Does the patient have comorbidities that preclude even moderate risk procedures like polypectomy?
  - Is there suspicion of submucosal invasion (SMI)?
    - This is the only acceptable reason to biopsy!

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Gross Morphology

High-risk Stigmata

- Deep depression
- Fold convergence
- Irregular bottom of depression surface
- White spots ("chicken skin")
- Redness
- Expansion
- Firm consistency
- Loss of lobulation
- Thick stalk

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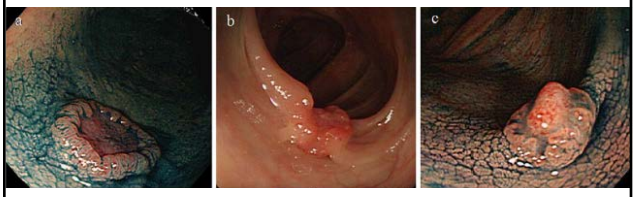

Central Depression | Fold Convergency | Irregular Base

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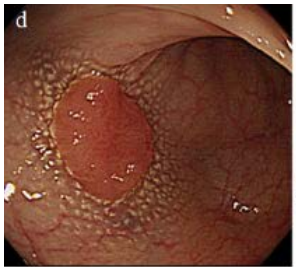

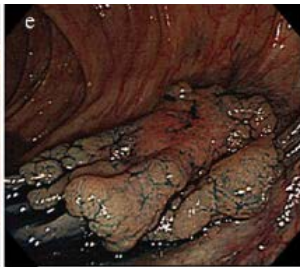

Chicken Skin Appearance

Erythema

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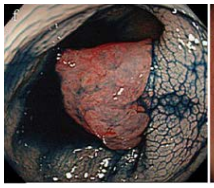

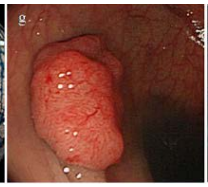

Surface Expansion

Firm Consistency

Irregular Lobulation

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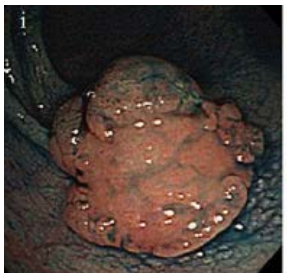

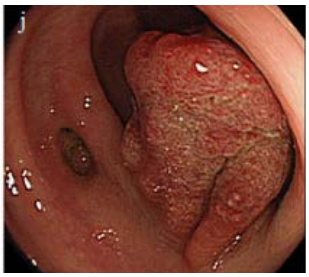

Loss of Lobulation

Thick Stalk

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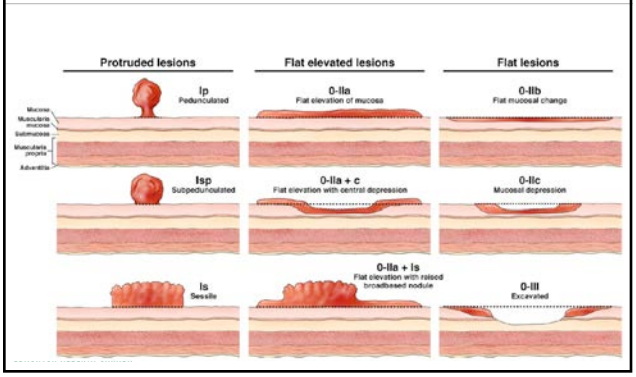
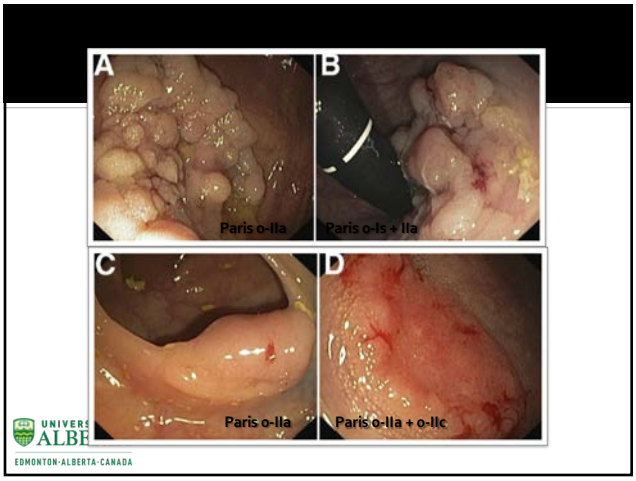
Paris Classification





So how can we optimize ROUTINE polyp removal?

Routine Polypectomy

- 90% Polyps < 10mm
- No HRS, favorable location
- Wide variety of tools to achieve the goal of polyp removal
  - Cold snare, hot snare
- Gold Standard is snare removal of ALL polyps

Small Polyp Removal

- **Hot vs. Cold?**
  - Is there a significant difference in removal effectiveness?
  - **Cold for polyps <10mm, hot snare for larger**

Cold Snare Technique

- Considered to be the technique of choice for polyps <10mm in size according to the latest ESGE guidelines 2017[1]

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1. Monika et al. Endoscopy 2017. 49(3): 270-297

Dedicated Cold Snare

- Many new products on the market

US Endoscopy Exacto Cold Snare

Captivator™ COLD Single-use Snare

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Dedicated Cold Snare

- Many new products on the market
- Typically thinner braided wire or monofilament
- Often more expensive and do not have option of using electrocautery in case a larger polyp is found
- Is there evidence to support the use of dedicated cold snares?

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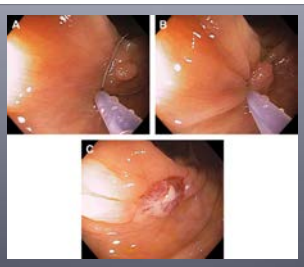
Cold Snare Technique



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Why does technique matter?

- Most common and arguably the most important technique in GI medicine
- Limited evidence for specific techniques
  - May explain the huge variety of results from different endoscopists, centres and research studies

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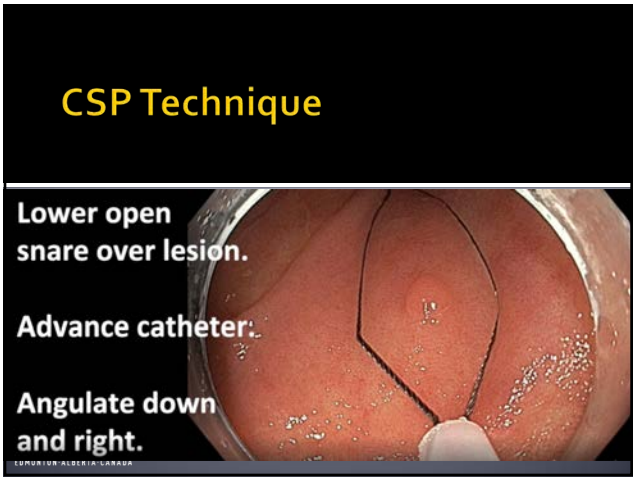
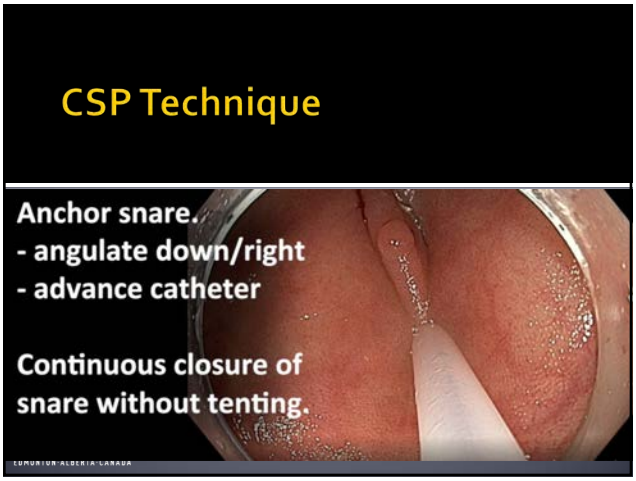
CSP Technique

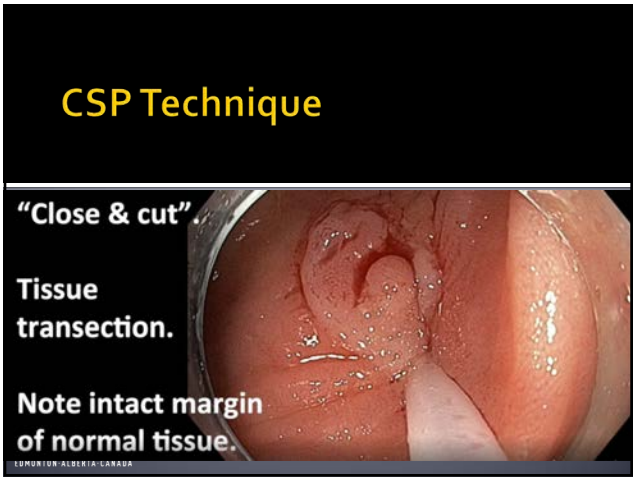
CSP Technique



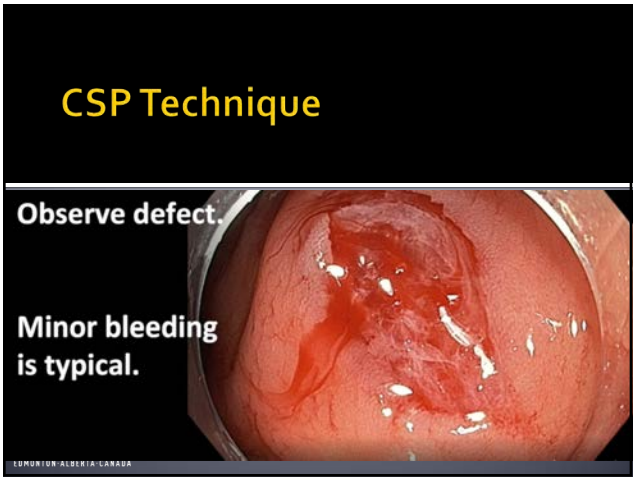
CSP Technique



CSP Technique



CSP Technique



CSP Pearls

- Take time to fully assess margins, especially SSL type lesions
  - Use NBI
  - Consider methylene blue /saline injection
- Optimize insufflation
  - Too much – slide over mucosa, incomplete capture
    - Residual polyp
  - Too little – increased submucosal capture
    - Difficult to cleanly cut

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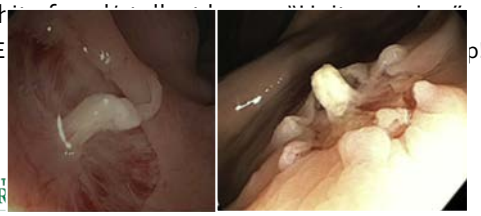
CSP Pearls

- Dynamic Closure
  - Advance catheter as nurse is closing
  - "Pin" the sheath to the mucosa
- Wh
  - E p!



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CSP Pearls

- Ensure completeness of resection
  - NBI to assess margins
  - Foot pedal irrigation of polypectomy site
    - Free submucosal injection
    - Also a good way to stop oozing

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CSP Pearls

- Failure to cut
  - Be patient!
  - DO NOT RAPIDLY OPEN AND CLOSE
  - "Milk" the sheath
  - Gently move the catheter in and out of the channel to transmit force to snare tip
  - Consider PARTIAL re-opening of the snare
  - Gentle traction

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What about large sessile polyp (LST) removal?

Large Sessile Polyps

- **Laterally spreading tumors (LST)**
  - >10mm, components of villous (tubulovillous or villous) or serrated histology, sessile or have evidence of high-grade dysplasia (HGD)
  - ~10% of adenomas detected are sessile lesions of >10mm[1]

1. Rotondano et al. Endoscopy. 2011. 43: 856-861

Lesion Assessment

- >70% of AMN are Paris 0-IIa or 0-IIa + Is, >90% of these are granular
  - These typically have a 1-5% chance of SMI
- Risk of submucosal invasion significantly increased with depressed lesions
  - Depressed (0-IIc) or focal depression (0-IIa + c) us associated with a 15-20% risk of SMI

Large Sessile Polyps

- Size doesn't matter!
  - May reach an enormous size before demonstrating invasive features
- Sessile lesions have a greater frequency of HGD and early invasive disease compared with polypoid lesions of equivalent size
- **Common LST**
  - Paris 0-II (flat) and O-Is (elevated) sessile polyps >20mm in size

Large Sessile Polyps

- Endoscopic vs Surgical?
  - Consider surgical intervention if invasive malignancy suspected
- Endoscopic
  - Endoscopic mucosal resection (EMR) vs. Endoscopic submucosal dissection (ESD)

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1. Swan et al. Gastrointest Endosc 2009;70:1128–1136.

EMR

- Technique is equally applicable to lesions that are 1-2cm in size
- Using this technique properly can minimize need for repeat colonoscopy, repeat attempts at polypectomy and optimize patient outcomes

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EMR Technique

- **Submucosal injection**
  - Fluid "cushion" between the mucosa and muscularis propria (MP)
  - Reduces risk perforation and transmural thermal injury
  - **"Lift sign"** to identify SMI
  - Ideally inexpensive, easy to use and provides a sustained, well-circumscribed mucosal elevation
  - Normal saline most commonly used although the use of colloidal solutions has been reported to be superior in a number of studies

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EMR Technique

- **Submucosal injection solution**
  - **Methylene blue / Indigo carmine**
    - Biologically inert blue dyes that are avid for loose areolar tissue of the SM layer
    - Confirms the resection is taking place in the correct plane
    - Helps delineate polyp borders to ensure complete resection
  - **Dilute epinephrine (1:100,000)**
    - Added to injectate by some physicians
    - Bloodless resection field, but higher risk of delayed polypectomy bleeding

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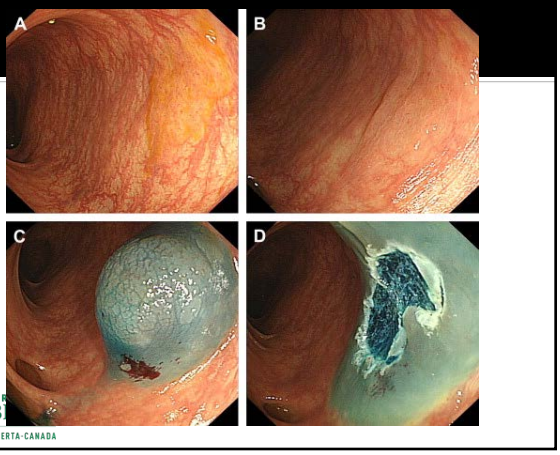

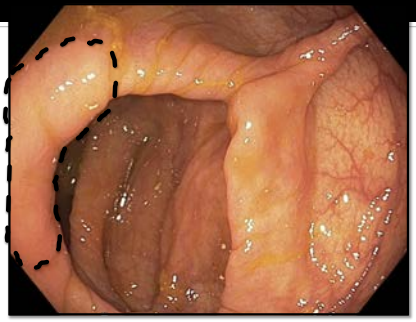

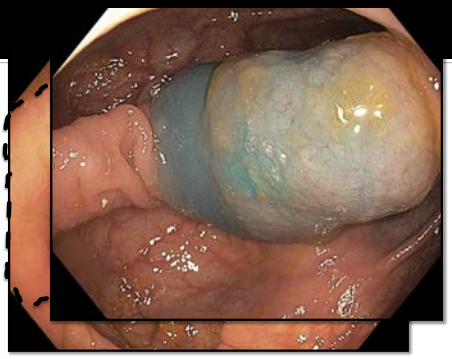

Dx: Portions of Sessile Serrated Adenoma

EMR Technique

- **Resection Technique**
  - Lesions removed in as few pieces as safely possible
  - En bloc resection for lesions up to 20mm right colon and 25mm in the left colon
    - More accurate histology, fewer chances for error and reduced risk of reoccurrence
  - Include 2-3mm margin of normal mucosa
  - Exam borders with white light endoscopy and NBI to ensure complete resection of polyp

Post-EMR Tattooing

- **When**:
  - Concern about malignancy of a polyp or cancer, piecemeal resection of polyp will help identify previous polypectomy site
- **Where**?
  - Anywhere outside of the cecum or rectum
- **What: India Ink (SPOT)**
  - Sterile carbon particle mixture, injected into submucosa

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Post-EMR Tattooing

- **How**
  - ~5cm away from resection site, typically 1-2 separate locations on opposite wall
    - Mesenteric vs. anti-mesenteric border
  - Initially create a saline "bleb" to ensure correct plane then inject SPOT into this cushion
  - No more than 3cc of SPOT

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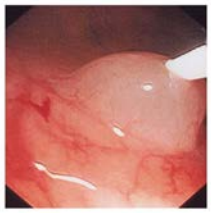
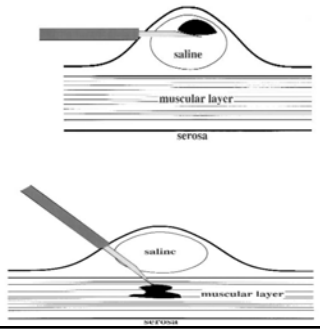
Post-EMR Tattooing



DO NOT →



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Post-EMR Tattooing

- **Complications**
  - **Transmural injection**
    - Serosal inflammation, abscess, peritonitis
    - Fibrosis, adhesions
  - **Direct tattooing of polyp site itself**
    - SM fibrosis can results
    - Difficult to lift, significantly higher risk of perforation

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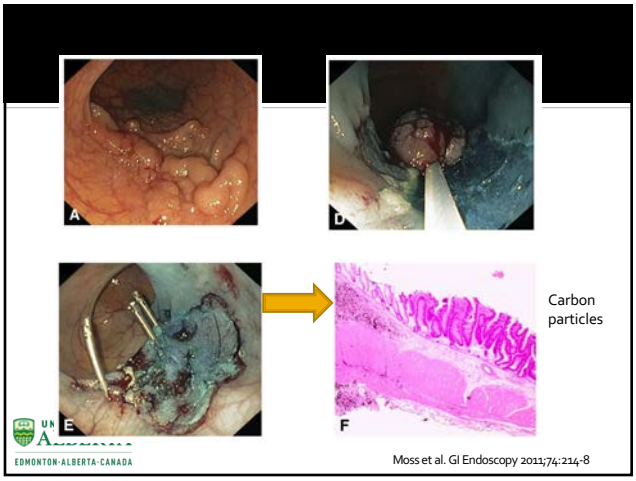
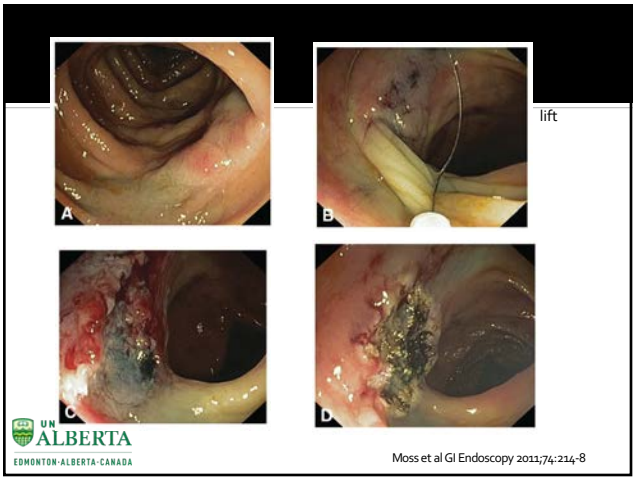


Moss et al. GI Endoscopy 2011;74:214-8



Moss et al GI Endoscopy 2011;74:214-8

KEY POINTS: EMR

- Meticulous evaluation is critical
- Size and location is not a limiting factor to complex polypectomy
  - Endoscopic appearance and "lift" sign more significant
- Should be done by trained individuals
  - Not everyone should "try" it out
  - High risk of complication with second session of EMR
- Piecemeal resection mandates an early relook
- Tattooing is critical – so is doing it properly!

Questions?