Welcome to the 2023 INSGNA Spring Conference

EUS in the Management of GI Disorders

Dr. Mohammad Al-Haddad

EUS in the Management of GI Disorders

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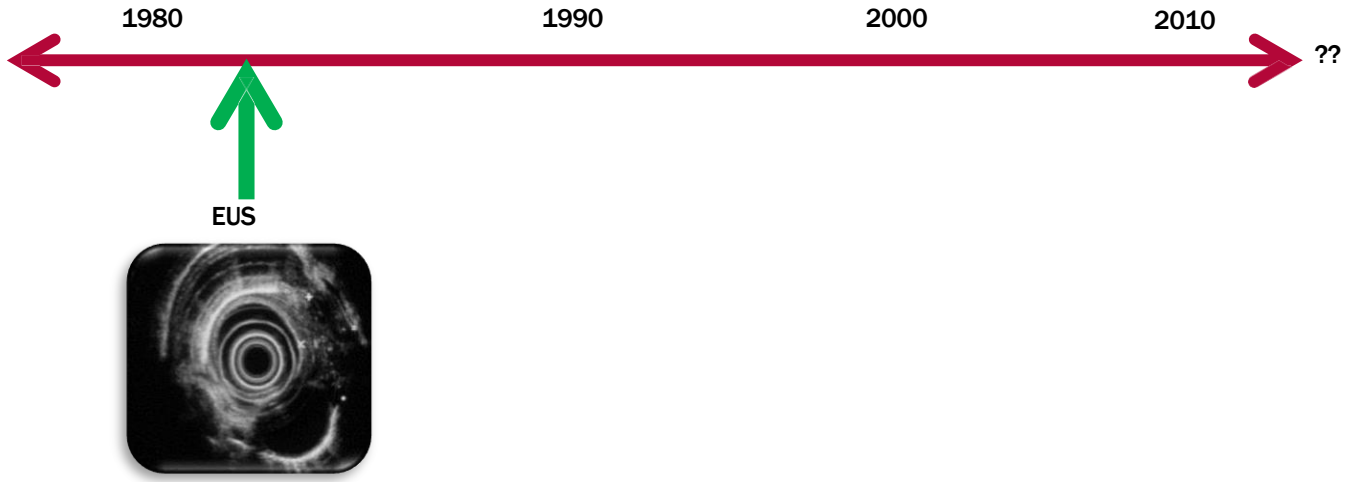
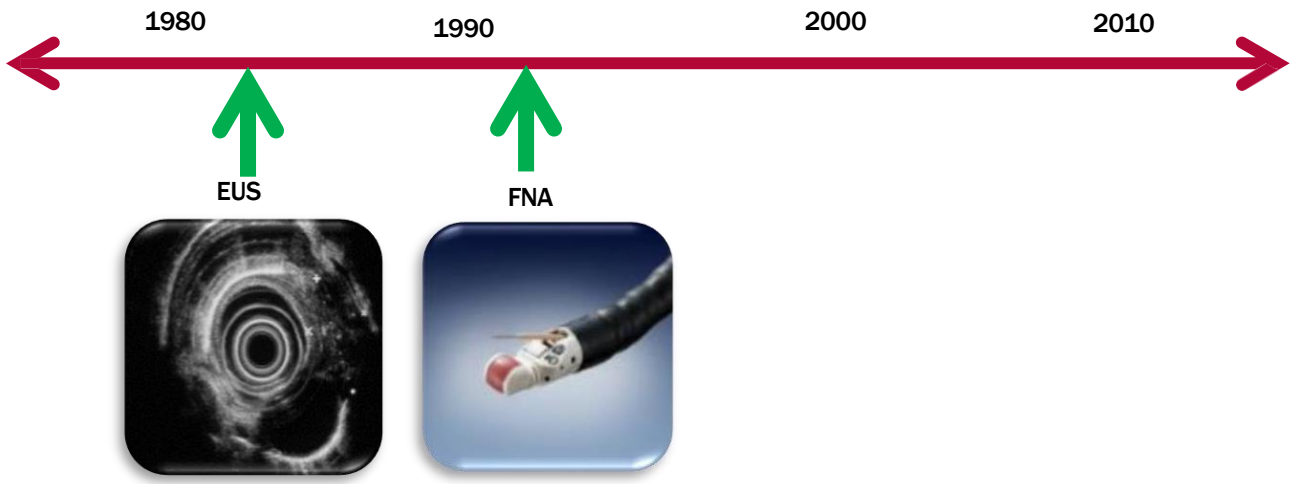
Objectives

- Identify principles of endoscopic ultrasound (EUS)
- Recognize indications for referral of endoscopic ultrasound (EUS)
  - Types of EUS
- Assess the impact of EUS on patient management including adverse events and aftercare

EUS Development Timeline



EUS Development Timeline

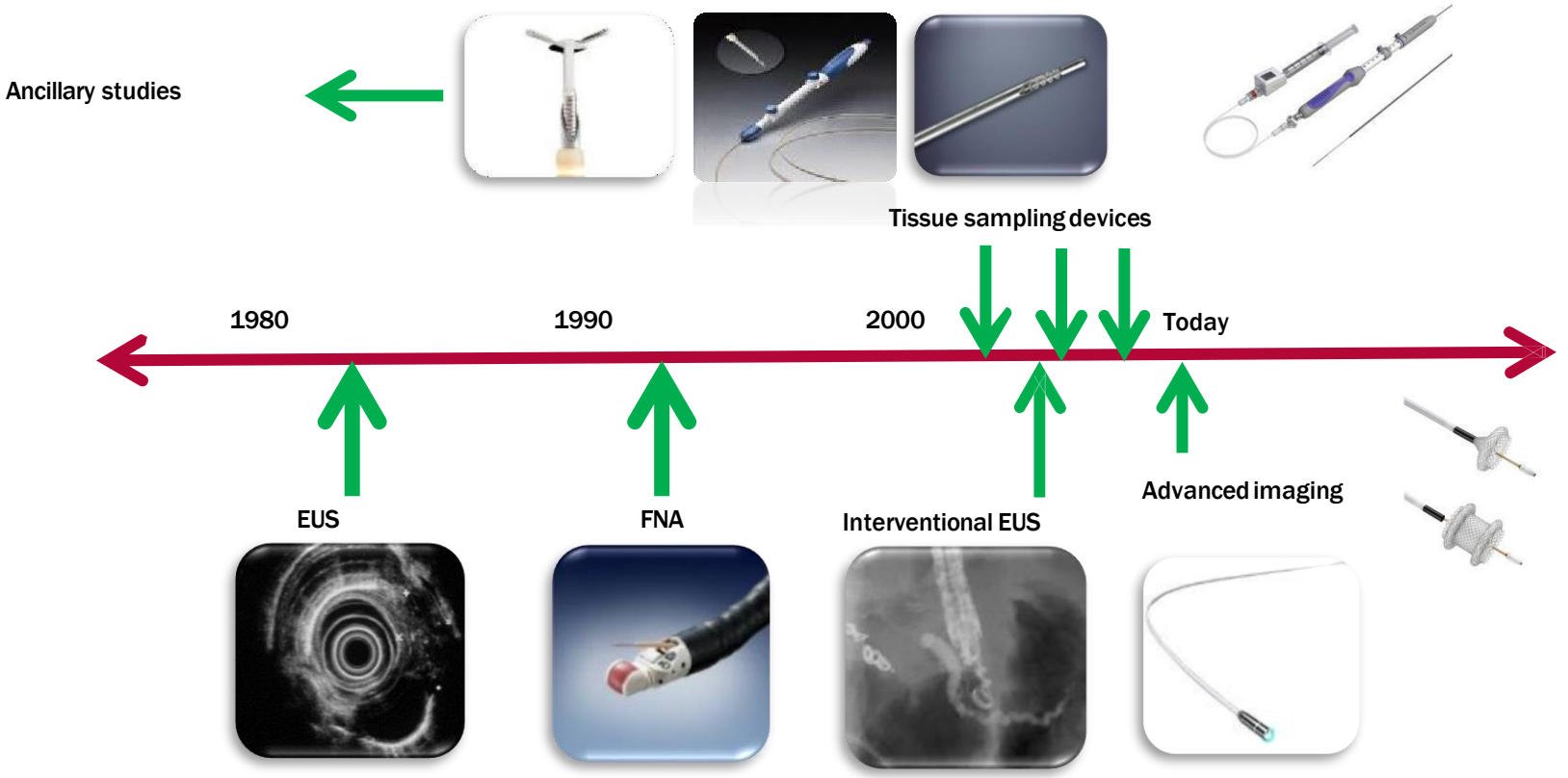


EUS-FNA

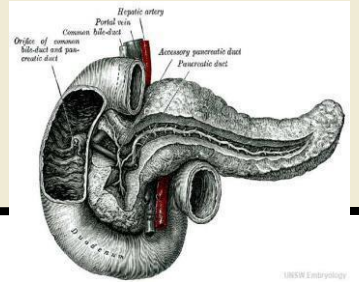
- Valuable and safe tool to obtain tissue for cytological examination
  - FNA is highly sensitive and specific
  - Clear impact on patients' management
- EUS-FNA is extremely safe when compared with other tissue-sampling modalities
  - Low risk profile
    - Pancreatitis 1-2%
    - Bleeding <1%
    - Infection <1%

Erickson RA et al EUS-guided FNA. Gastrointestinal Endoscopy. 2004;60(2):267-79.
Al-Haddad, M Wallace MB et al. Endoscopy 2008 Mar;40(3):204-8.

EUS Development Timeline

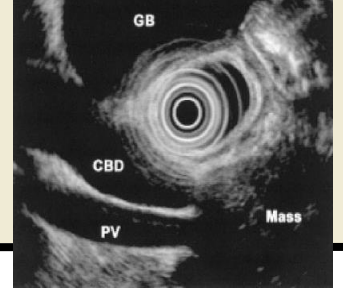


Indications

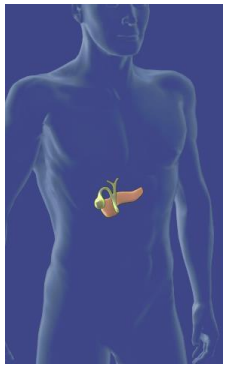


- Staging esophageal, gastric, duodenal, pancreas, and rectal cancer
- Staging of lung cancer (mediastinal masses/adenopathy)
- Mediastinal masses
- Suspected chronic pancreatitis
- Suspected pancreas cancer and other solid and cystic lesions
- Evaluation of liver lesions and obtain liver biopsies for assessment of fibrosis/cirrhosis

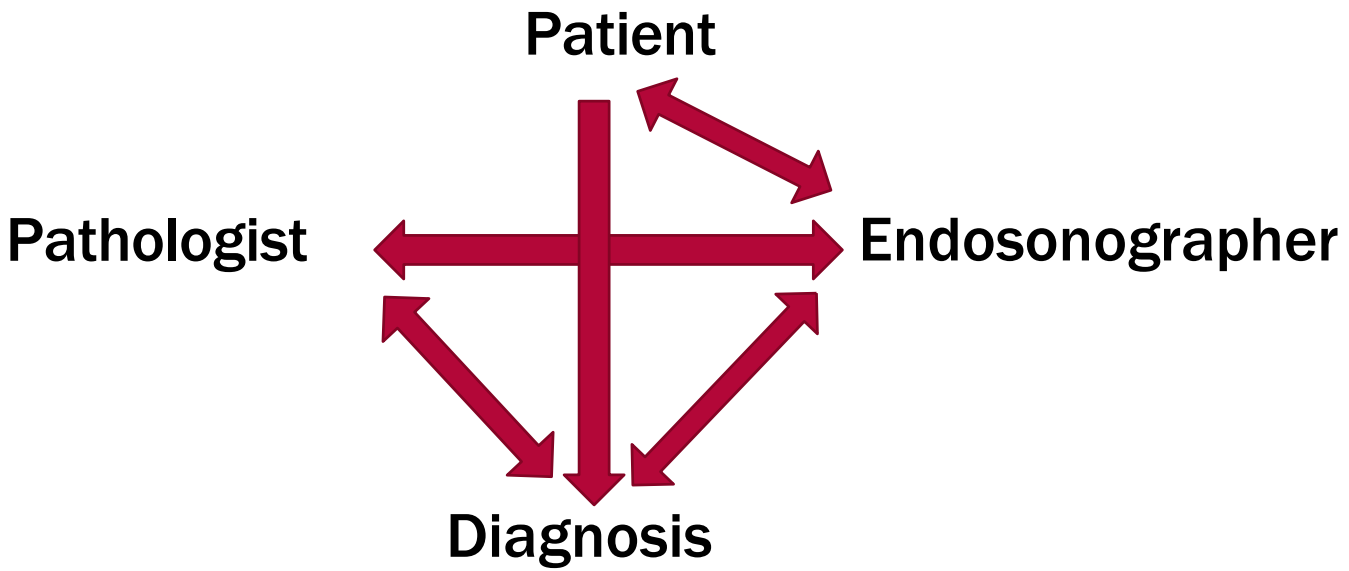
Indications



- Evaluation of submucosal lesions in the: esophagus, stomach, and duodenum
- Fine needle aspiration (FNA) of lymph nodes
- FNA of masses and tumors adjacent to the esophagus, stomach, and duodenum
- Evaluation of the left and parts of the right lobe of the liver
  - Metastatic lesions
  - Random biopsies to check for fibrosis/cirrhosis
- Evaluation of common bile duct and gall bladder stones/sludge
- Evaluation of gallbladder cancer
- Evaluation of bile duct strictures/cancer (cholangiocarcinoma)
- Tumor recurrence and post systemic therapy re-staging
  - Esophageal
  - Gastric
  - Duodenal
  - Pancreatic
  - Ampullary
  - Rectal



EUS in Clinical Care

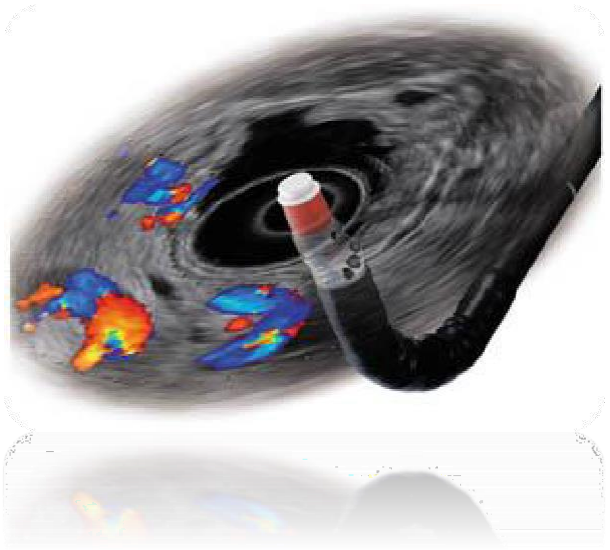


EUS Equipment

- Scopes/Probes
- Processors

Endoscopic Ultrasound Probes

- Radial
- 5 - 7.5 – 12 MHz
- 360 Degree Scanning
- Color Doppler/Flow
- Diagnostic



Endoscopic Ultrasound Scopes

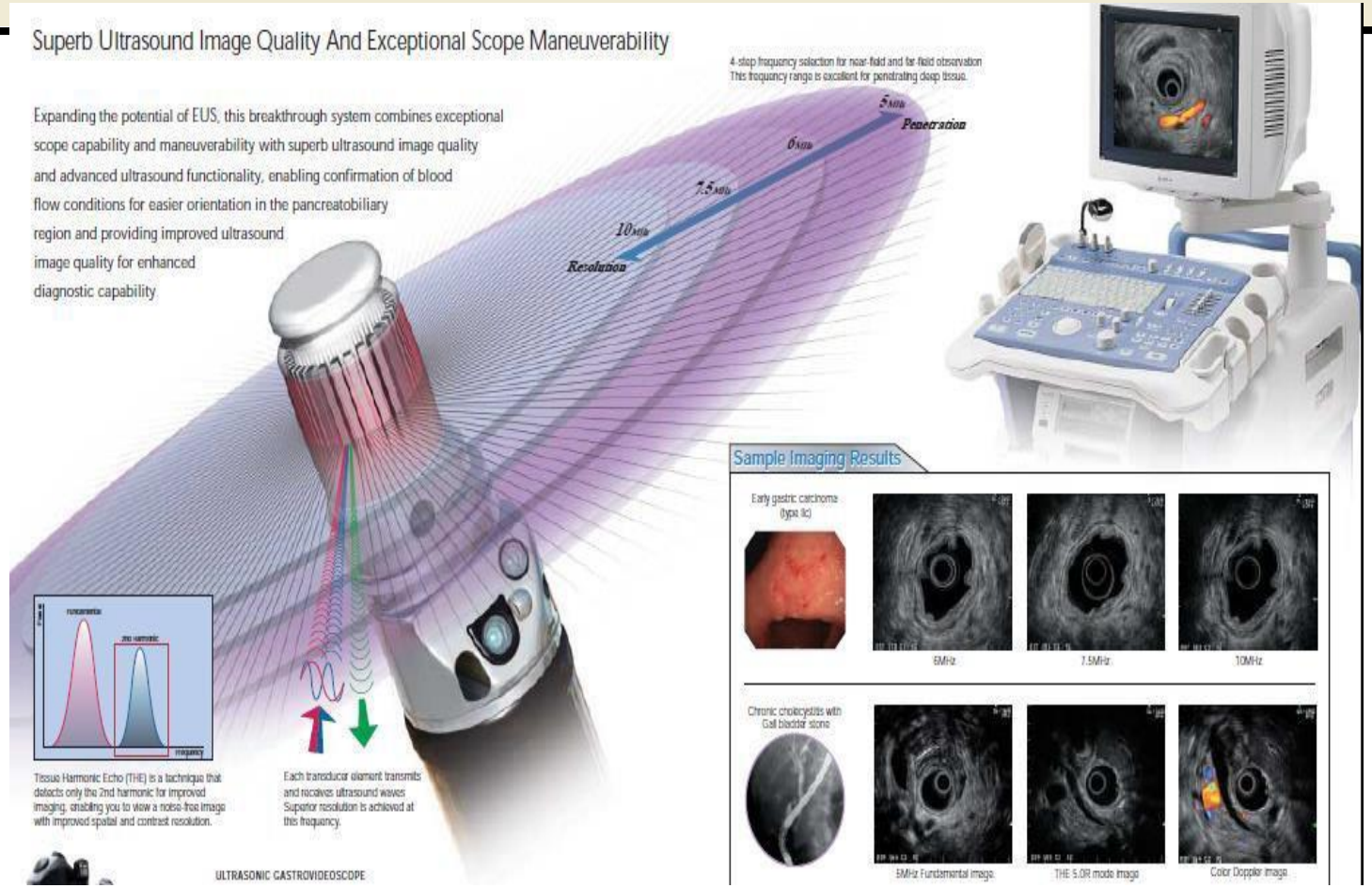
Linear echoendoscopes

- Electrical (no moving parts)
- 120 - 180 Scanning Angle (varies per model)
- 5 - 10 MHz
- Color Doppler/Flow
- Diagnostic
- Therapeutic

Processors

Radial

Linear

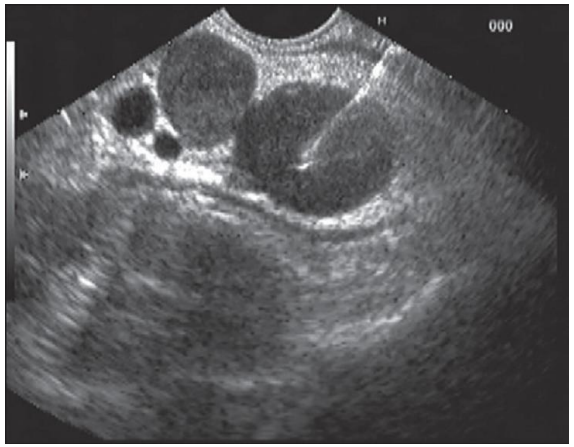

Superb Ultrasound Image Quality And Exceptional Scope Maneuverability
Expanding the potential of EUS, this breakthrough system combines exceptional scope capability and maneuverability with superb ultrasound image quality and advanced ultrasound functionality, enabling confirmation of blood flow conditions for easier orientation in the pancreatobiliary region and providing improved ultrasound image quality for enhanced diagnostic capability
4-step frequency selection for near-field and far-field observation
This frequency range is excellent for penetrating deep tissue.
5MHz
Penetration
6MHz
7.5MHz
10MHz
Resolution
Tissue Harmonic Echo (THE) is a technique that detects only the 2nd harmonic for improved imaging, enabling you to view a noise-free image with improved spatial and contrast resolution.
Each transducer element transmits and receives ultrasound waves. Superior resolution is achieved at this frequency.
ULTRASONIC GASTROVIDEOSCOPE
Sample Imaging Results
Early gastric carcinoma (type IIc)
6MHz
7.5MHz
10MHz
Chronic cholecystitis with Gall bladder stone
6MHz Fundamental image
THE 5.0R mode image
Color Doppler image

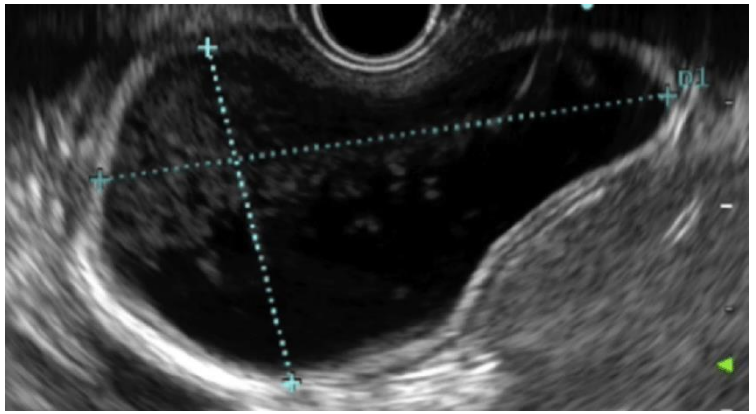
Imaging Processing

- Electric generator emits an ultrasonic pulse
  - Sound energy is emitted in the form of pulses (short sinus waves)
- Ultrasonic energy is reflected by the interface
  - Liquid medium transmits sound waves best (Acoustic coupling)
  - Air and bone transmit least
- An echo of defined duration returns to the transducer
- Echo is transformed into an electrical signal

Basic Concepts

- Echo characteristics
  - Size
  - Shape
  - Border
  - Echogenicity
- Doppler flow
- Frequencies
  - High vs. low





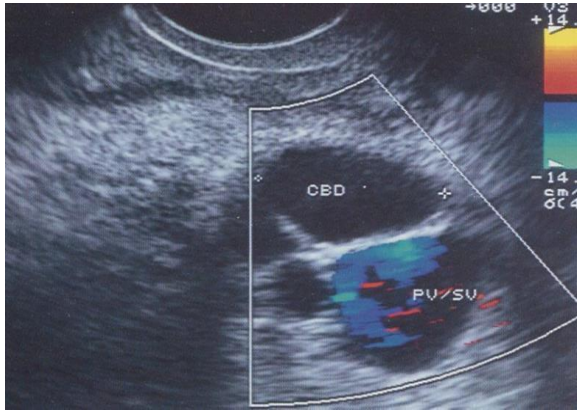
Ultrasound Frequencies

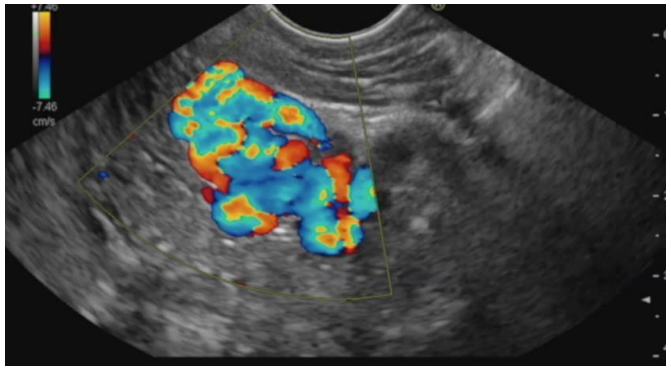
- Magnitude of megahertz (1 Mhz = 10^6)
- The higher the frequency, the shorter the wavelength
- The higher the frequency, the lower the depth of penetration
- Higher frequencies for gut wall (mucosal and subepithelial lesions)
- Lower frequencies for deeper tissues (liver, spleen, vessels, etc.)

- 5 mHz (radial)
- 6 mHz (linear)
- 7.5 mHz (radial/Linear)
- 10 mHz (linear)
- 12&20 mHz (mini probes)

Color flow and Doppler

- Aids in differentiating:
  - Major blood vessels
  - Ductular structures
  - Lymph nodes
  - Cystic lesions





Endoscopic Ultrasound Miniature Probes

- Passes through accessory channel
- Radial
  - 12 - 30 MHz
- Small lesions closer to surface
- Strictures

Ultrasound Probes

High MHz

- Higher resolution
- Travels shorter distance
- Less depth of penetration into tissue
- (example: esophageal wall, mediastinum, rectal wall)

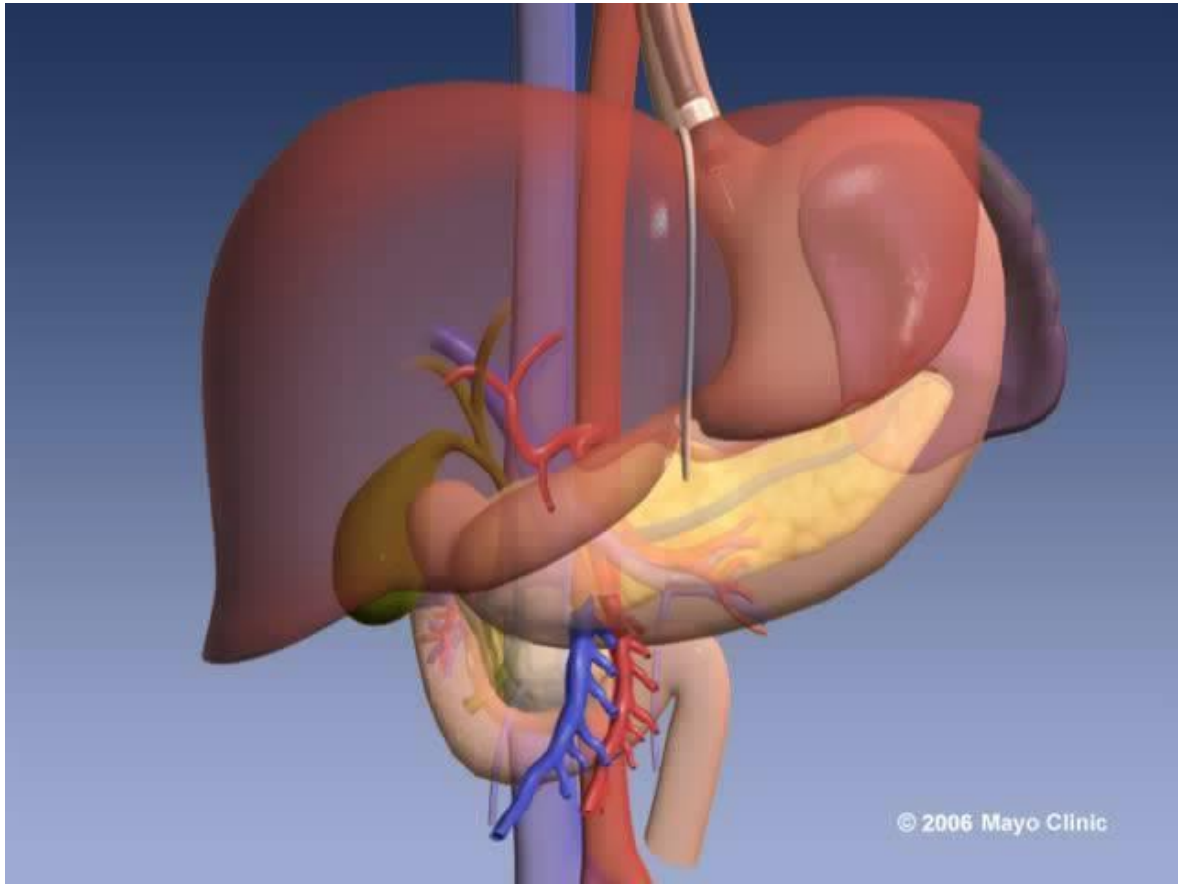
Low MHz

- Slower resolution
- Travels longer distance
- Better penetration into tissue
- (example: pancreas, left adrenal, celiac trunk)

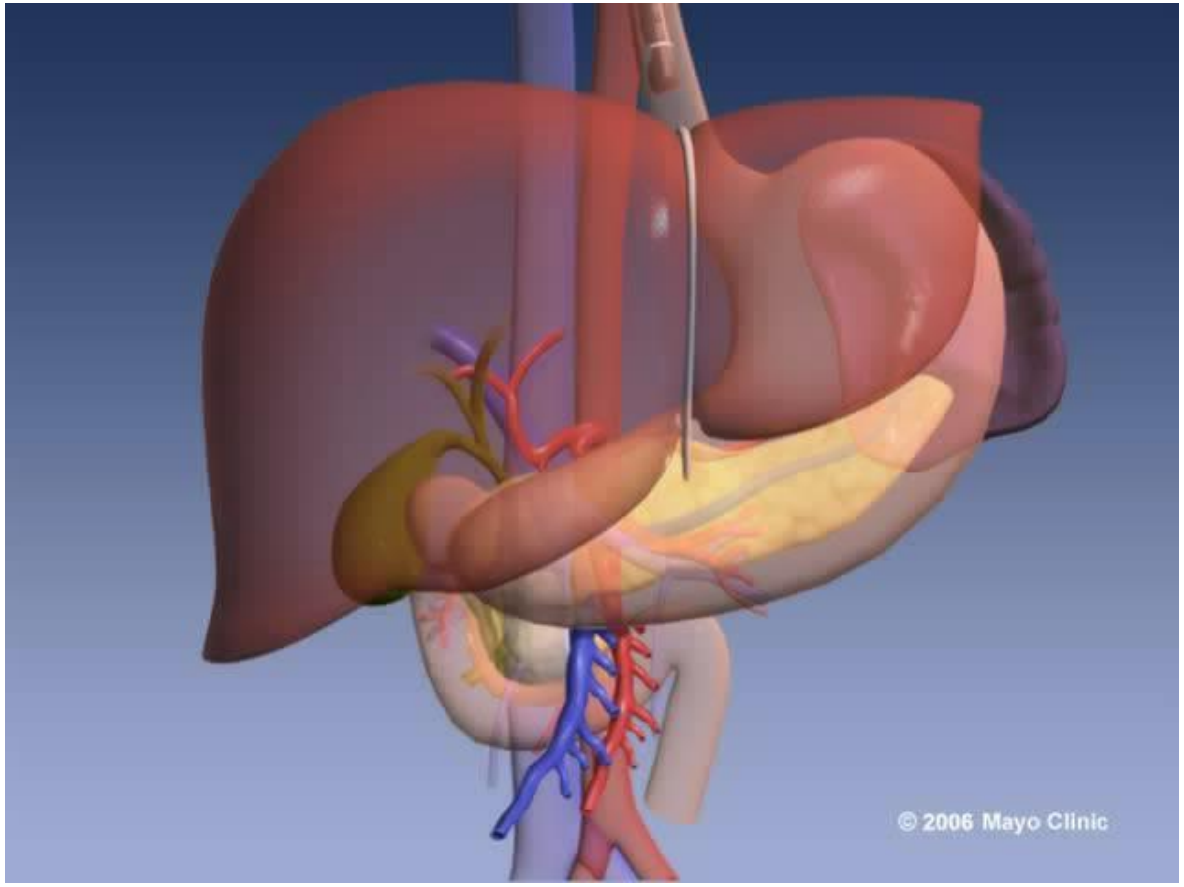
EUS Examination Technique

- Structured approach based on stations
  - Avoid missing pathologies
  - Comment on each finding even if “negative”
  - Systematic report generating
- Use balloon or water instillation to improve “acoustic coupling”
  - Improve the ability of sound waves to travel in different media
    - H_2O>>>Air

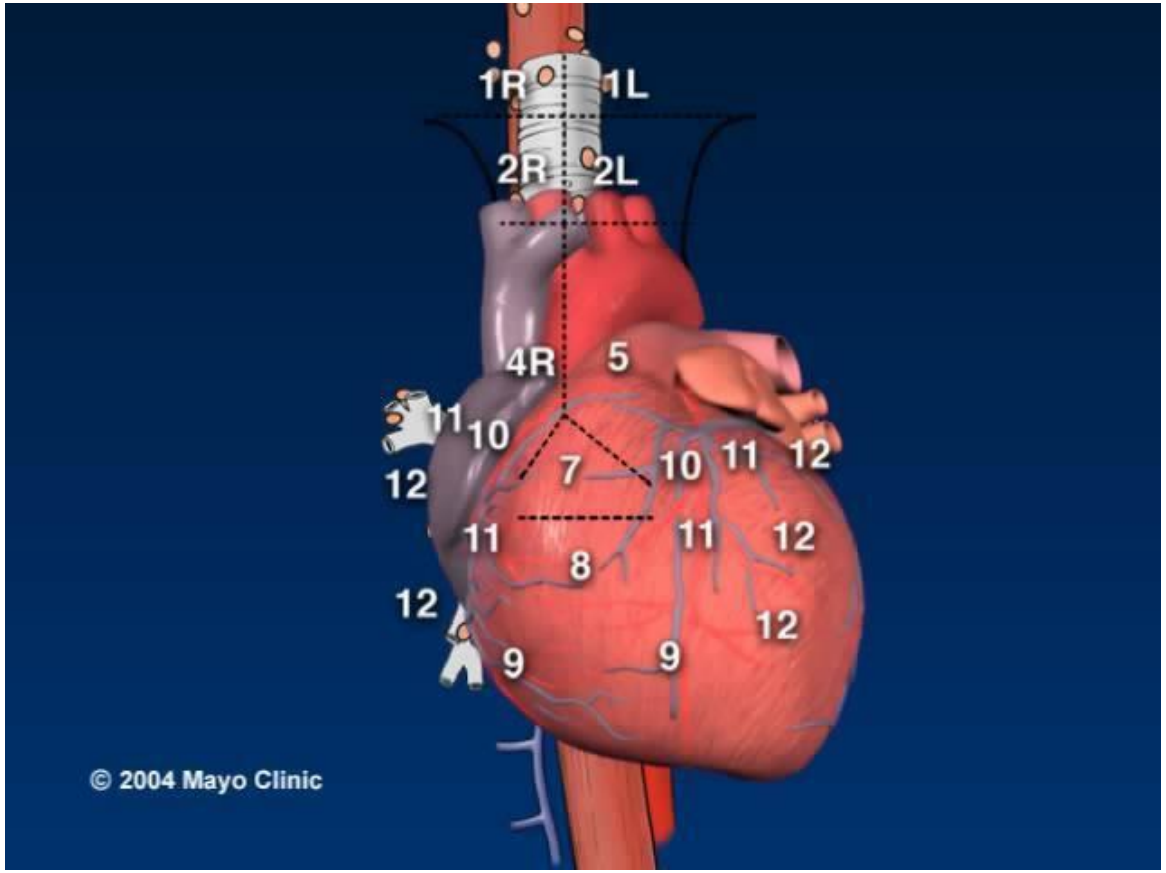
Station 1-Radial



Station 1-Linear



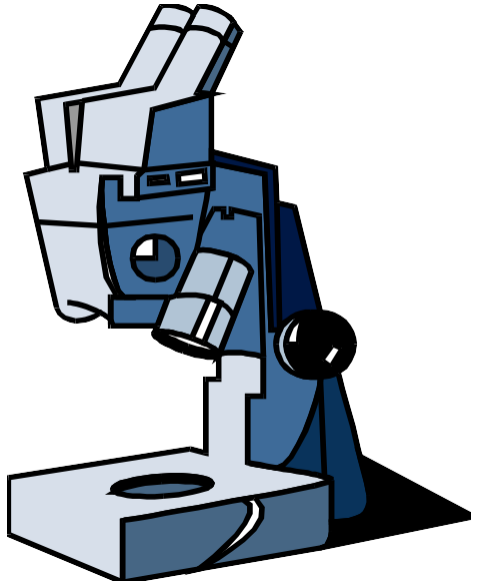
Mediastinal Exam



Fine Needle Aspiration (FNA)

Goals of FNA:

- Impact patient management
  - Accurate staging
- Preclude unnecessary surgery, triage to neoadjuvant therapy for cancers
- Reduce the need for IR procedures/image guided biopsies or surgery

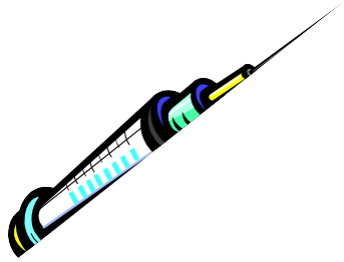


FNA/FNB Needles

- Gauges
  - 19 gauge
  - 22 gauge
  - 25 gauge

Risks of FNA/FNB

- Overall complication rate 1.5%
  - 0.5% for solid lesions
  - 1-14% for cystic lesions (with/without antibiotics)
  - 1.2% pancreatitis
  - 1% of severe bleeding
  - <1% death
- Bleeding <1%
- Perforation of the bowel wall 1:1000
- Tumor track seeding?

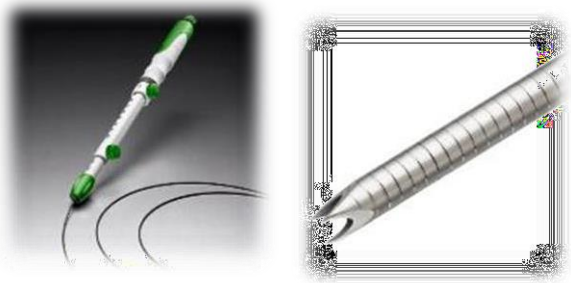


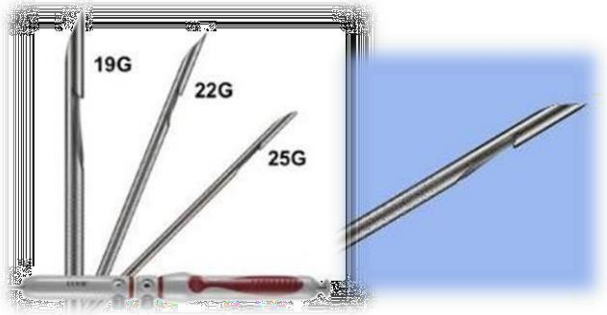
Al-Haddad M, Wallace MB et al. Endoscopy. 2008 Mar;40(3):204-8

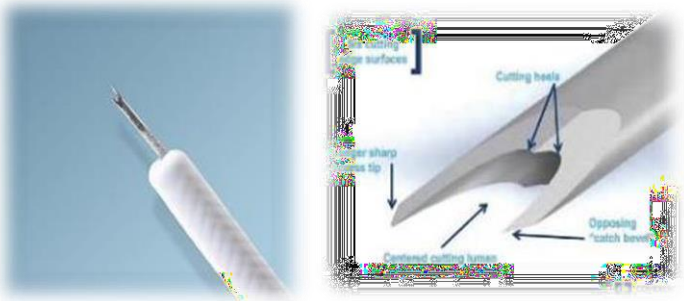
Ideal EUS-Guided Tissue Acquisition Technique

- Adequate specimens
- Diagnostic yield of malignancy
- Accuracy
- Histology
  - Tissue architecture and special stains
- Safety and adverse events
- Efficiency
  - Number of passes, time, repeat procedures and costs

EUS Guided Core Biopsy Devices







EUS-FNA and FNB

Variables that may impact diagnostic yield of EUS sampling

- Experience of the endosonographer
- Needle gauge
- EUS technique
  - -Use of suction and stylet
  - -Number of passes
  - -Fanning
- Lesion location and characteristics
- Presence of on-site cytopathologist
- FNA vs. FNB

Clinical Scenarios

Pancreas Mass

- 62 M presents with painless jaundice and 10 lbs weight loss over the course of one month
- Cross sectional imaging showed soft tissue mass in the head of the pancreas
- FNA cytology at outside facility showed scant atypical groups
  - Not sufficient for a diagnosis
  - Patient referred for a second opinion and repeat EUS

EUS-FNB


ALOKA
Indiana University Hospital
:No ID
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15:03:28
MI 0.43 TIS< 0.4 100% 40Hz
G61 D80 A1
P Probe:LIN 180
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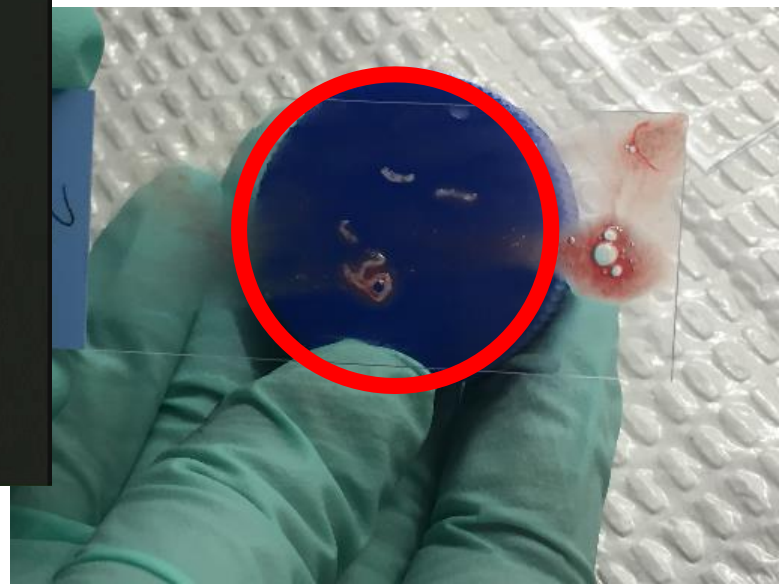
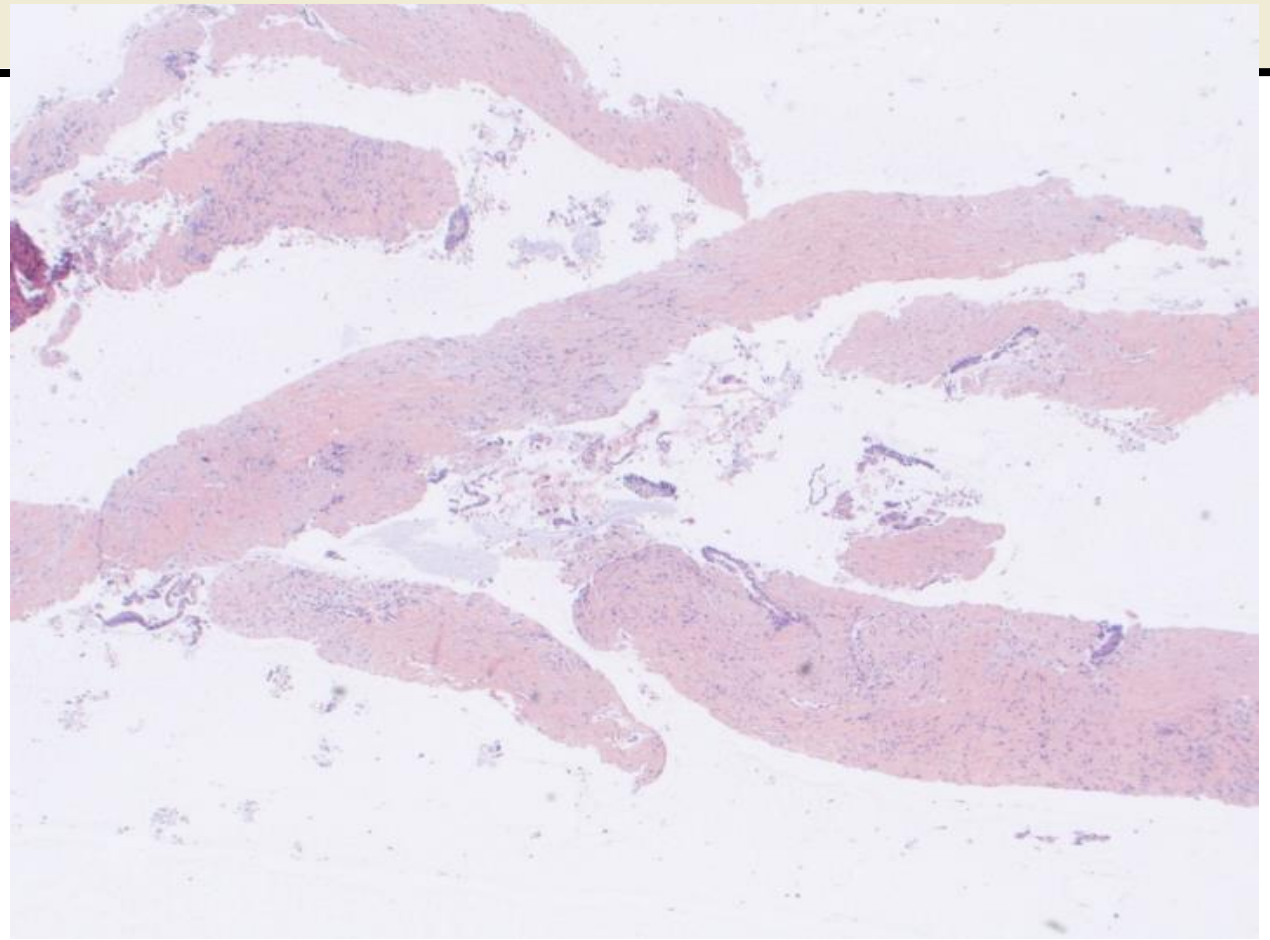
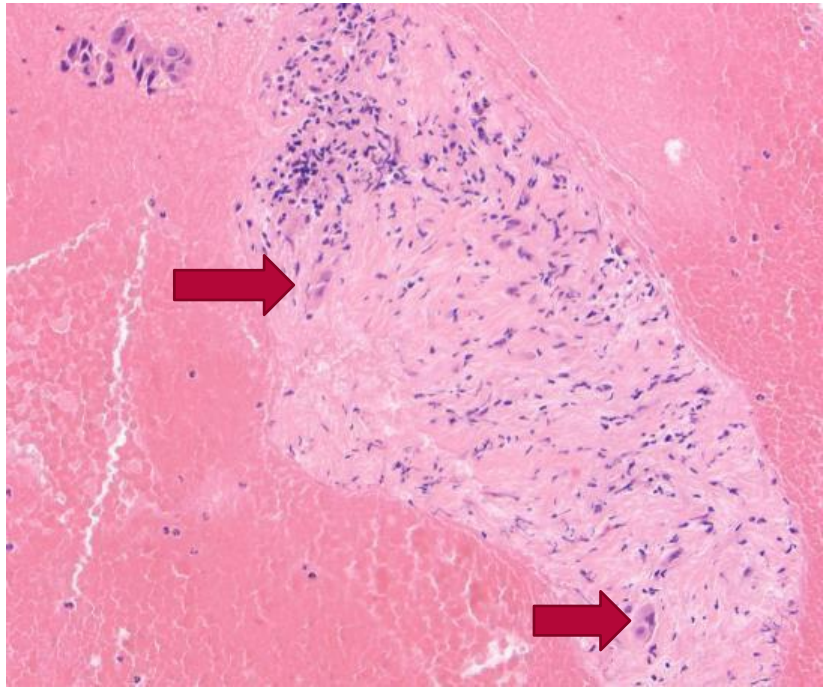
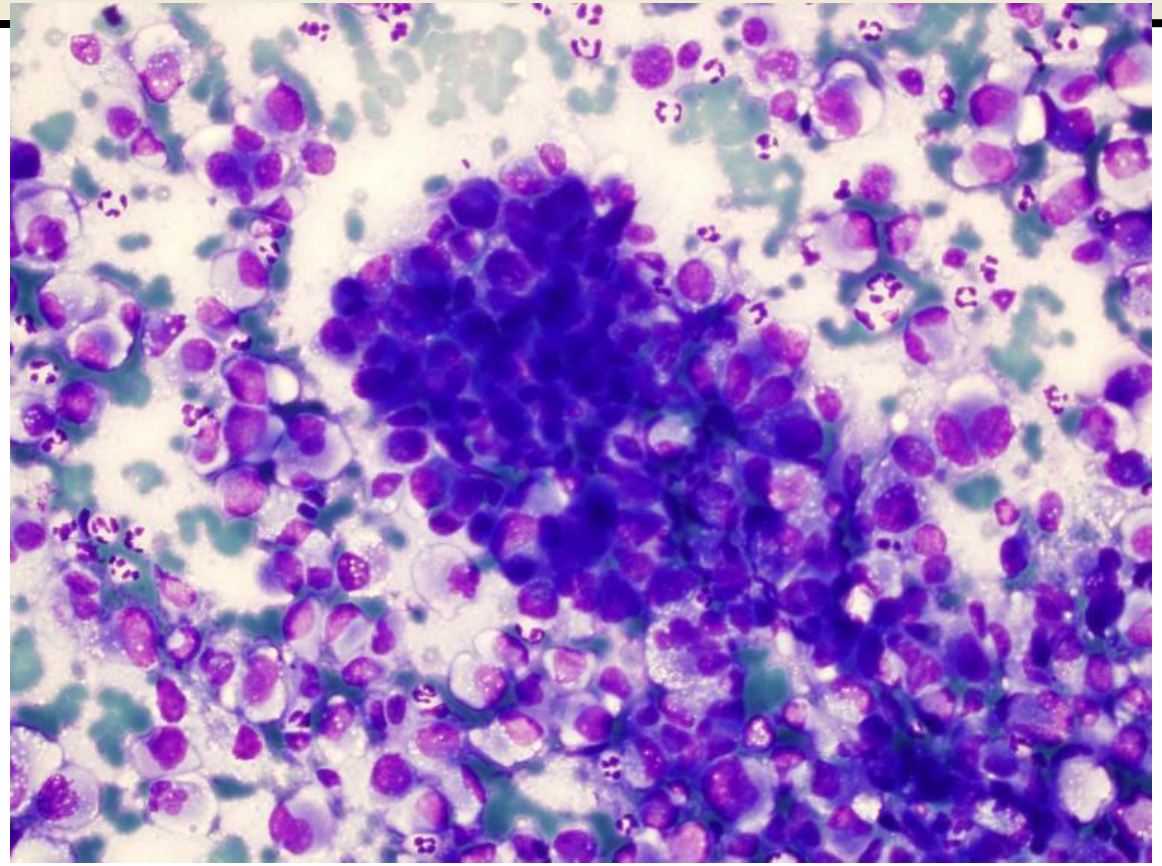


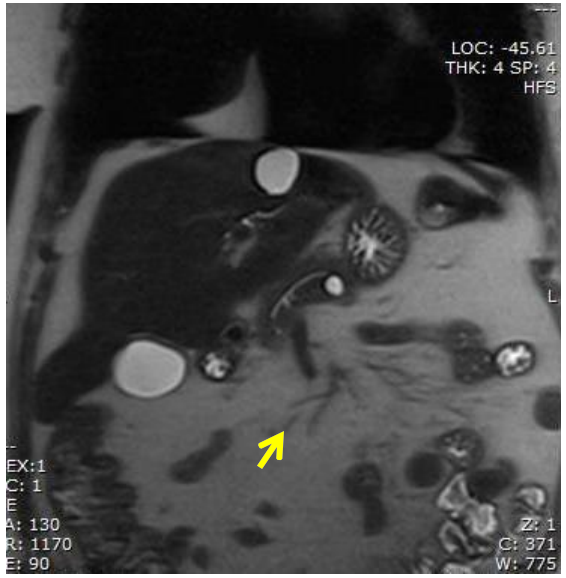






Case Presentation

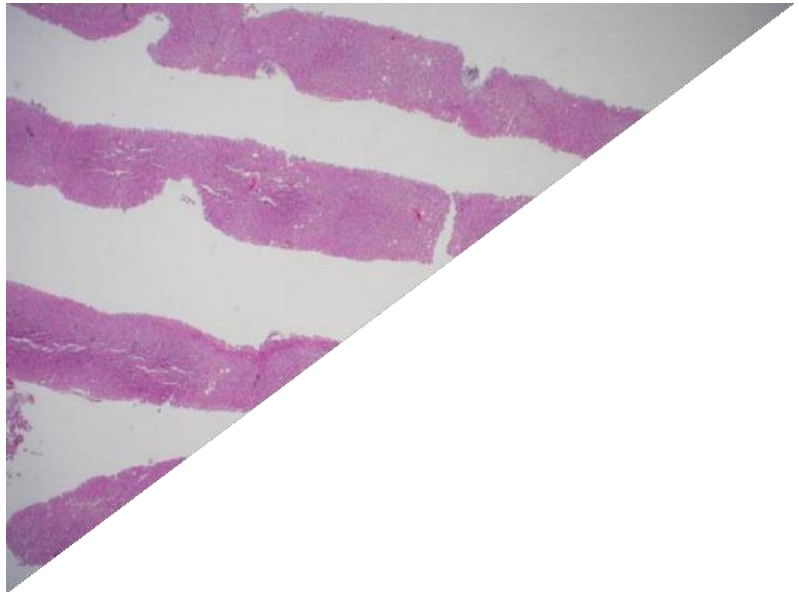
- 55 year old F patient
- CT imaging for nephrolithiasis revealed a 1.5 cm cyst in the tail of the pancreas with no ductal dilation
- Asymptomatic
- No hx of pancreatitis
- No family hx of pancreatic disorders

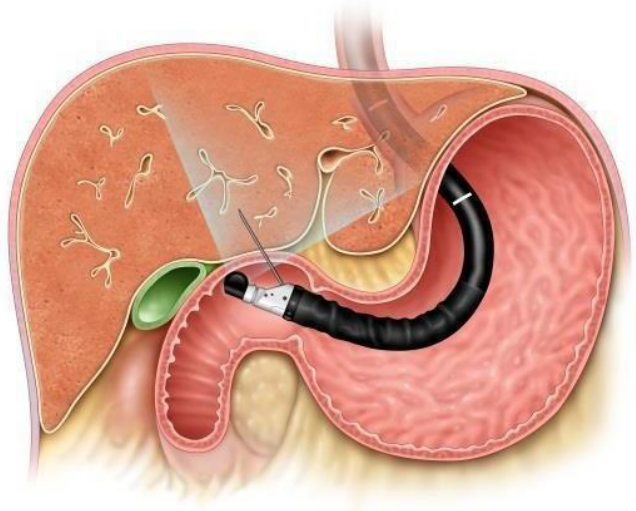


Pancreatic cyst

Cyst Fluid Analysis:
Cytology: No mucinous epithelium or dysplasia; extracellular mucin present
CEA: 176 ng/ml

EUS Guided Liver Biopsy



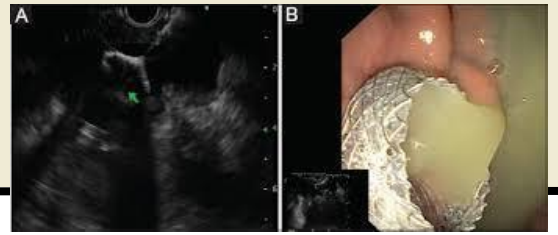


EUS-Guided Liver Biopsy

- Consider if EUS is being performed for other reasons to investigate chronic liver disease/elevated liver profile
- Allows wide sampling of liver (right and left lobes)
- EUS-LB is safe and provides tissue yields comparable to transjugular or percutaneous liver biopsies

Patel H, Al-Haddad M. Dig Dis Sci. 2021

Interventional EUS

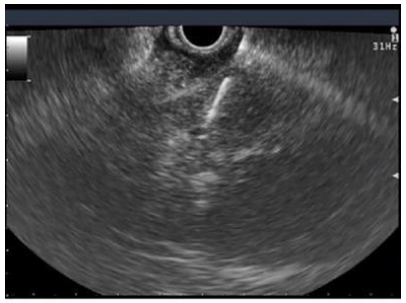


Injection

- Rendez-vous procedures for difficult cannulation to facilitate access to
  - Pancreatic duct
  - Bile duct
- EUS guided celiac plexus block
- EUS guided celiac neurolysis
- Pancreas cyst ablation
- Gastric varices therapy

Drainage

- EUS guided biliary drainage
- Transgastric biliary drainage (intrahepatic)
- Transduodenal coledochoduodenosctomy
- EUS drainage of pancreatic fluid collections
- Rendez-vous procedures for difficult cannulation
  - Pancreatic duct
  - Bile duct
  - Stent placement



Delivery

- Rendez-vous procedures for difficult cannulation
  - Pancreatic duct
  - Bile duct
- Radiofrequency ablation
- Fiducial placement to guide radiation therapy

EUS Aftercare

- Deep sedation or GA preferred
- Antibiotics needed form some interventions
  - Cystic structures FNA/FNB
  - Interventional EUS (drainage, fiducials..etc)
  - Celiac plexus block
  - Mediastinal and peri-rectal FNA/FNB
- Watch for complications post FNA/FNB
  - Pain
  - Pancreatitis

Conclusion

- EUS and EUS based interventions optimize and enhance the quality of care we can provide to patients with a variety of gastrointestinal and pancreatobiliary disorders (benign and malignant)
- Safety profile and efficacy well demonstrated in >30 years of practice and literature
  - Additional training and expertise needed
- Rapidly expanding list of interventional applications

Thank You

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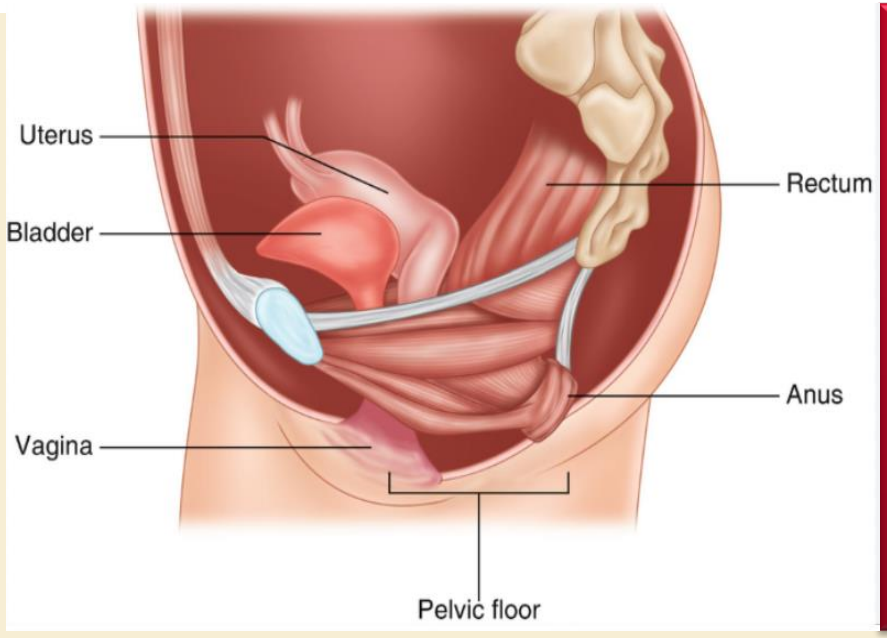
Pelvic Floor Disorders

Dr. Toyia James - Stevenson



Update on Pelvic Floor and Anorectal Disorders: Symptoms, Evaluation and Management

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Objectives

- Identify common presentations of GI pelvic floor and anorectal disorders
- Discuss evaluation of patients with dyssynergic defecation, anorectal complaints and fecal incontinence
- Establish management strategies for treating these disorders

TABLE 1. Rome IV Criteria for the Diagnosis of Functional Constipation[4]

Criteria for Functional Constipation Diagnosis
Onset of constipation symptoms at least 6 months before diagnosis Below criteria met for the past 3 months
I. Two or more of the following criteria must be present: a. Straining with >25% of defecations b. Lumpy or hard stools with >25% of defecations i. Bristol stool form types 1 and 2 c. Sensation of incomplete evacuation with >25% of defecations d. Sensation of anorectal obstruction/blockage with >25% of defecations e. Manual maneuvers required with >25% of defecations i. Eg, digital evacuations, support for the pelvic floor f. Fewer than 3 spontaneous defecations per week
II. Loose stools are rare without administration of laxatives
III. Insufficient criteria for irritable bowel syndrome

Adapted from Lacy BE, Mearin F, Chang L. *Gastroenterology.* 2016;150(6):1393-1407.

Constipation type	Typical findings
Normal-transit constipation, constipation-predominant IBS	• Patient history, no pathology at physical inspection/examination • Pain and bloating • Feeling of incomplete evacuation
Slow-transit constipation	• Slow colonic transit • Normal pelvic floor function
Evacuation disorder	• Prolonged/excessive straining • Difficult defecation even with soft stools • Patient applies perineal/vaginal pressure to defecate • Manual maneuvers to aid defecation • High basal sphincter pressure (anorectal manometry)
Idiopathic/organic/secondary constipation	• Known drug side effects, contributing medication • Proven mechanical obstruction • Metabolic disorders—abnormal blood tests

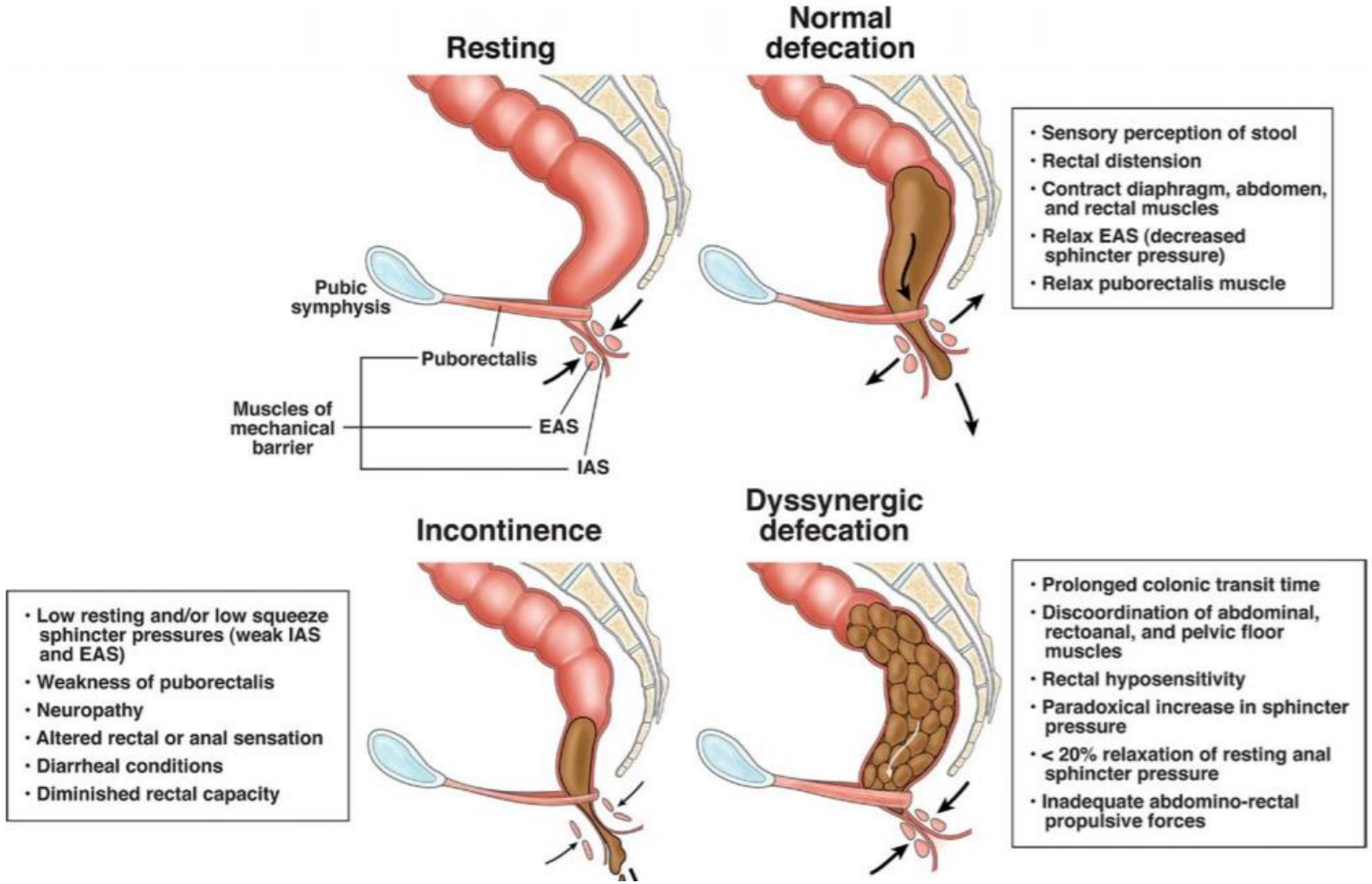
Constipation Subtype-
Functional Defecation Disorders

Paradoxical contraction or inadequate relaxation of the pelvic floor muscles during attempted defecation and/or inadequate propulsive forces

1. Abnormal balloon expulsion test
2. Abnormal anorectal evacuation pattern with manometry or anal surface EMG
3. Impaired rectal evacuation by imaging

- *2 out of 3 should be present*
- *One-third of ALL pts with constipation have FDD*

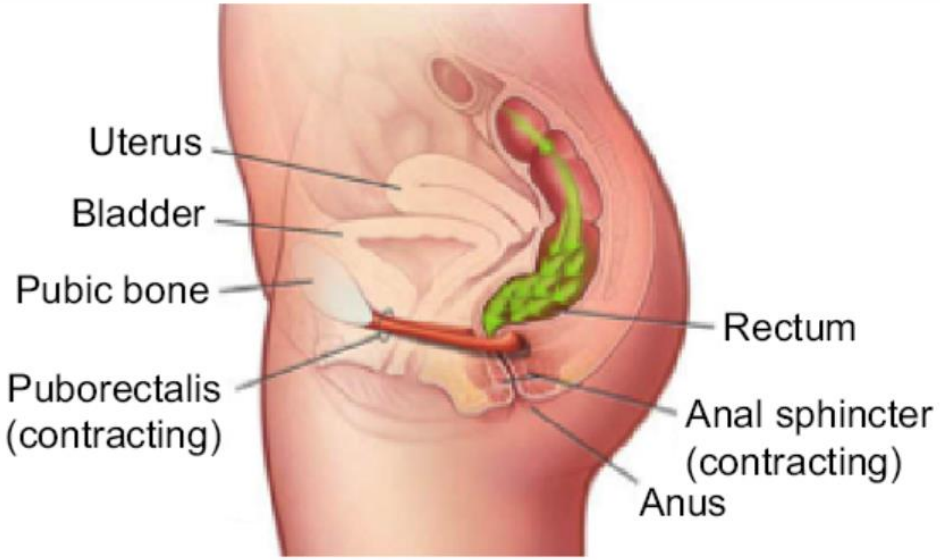
GI Pelvic Floor Anatomy and Physiology

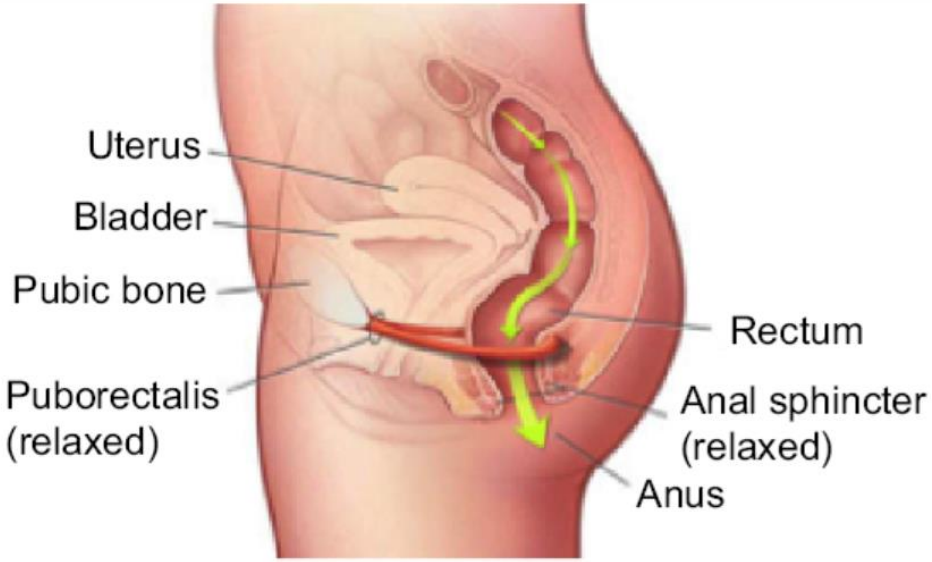


Initial Evaluation: History and Inspection

- Obtain history and develop rapport and trust
- Thorough PMH, sexual and smoking history
- Inspect for fecal matter, skin irritation, external hemorrhoids, gapping anus, lack of creases, fissures, masses, fistulas, abscesses
- Can identify rectal prolapse or excessive perineal descent (>3cm outward bulge)

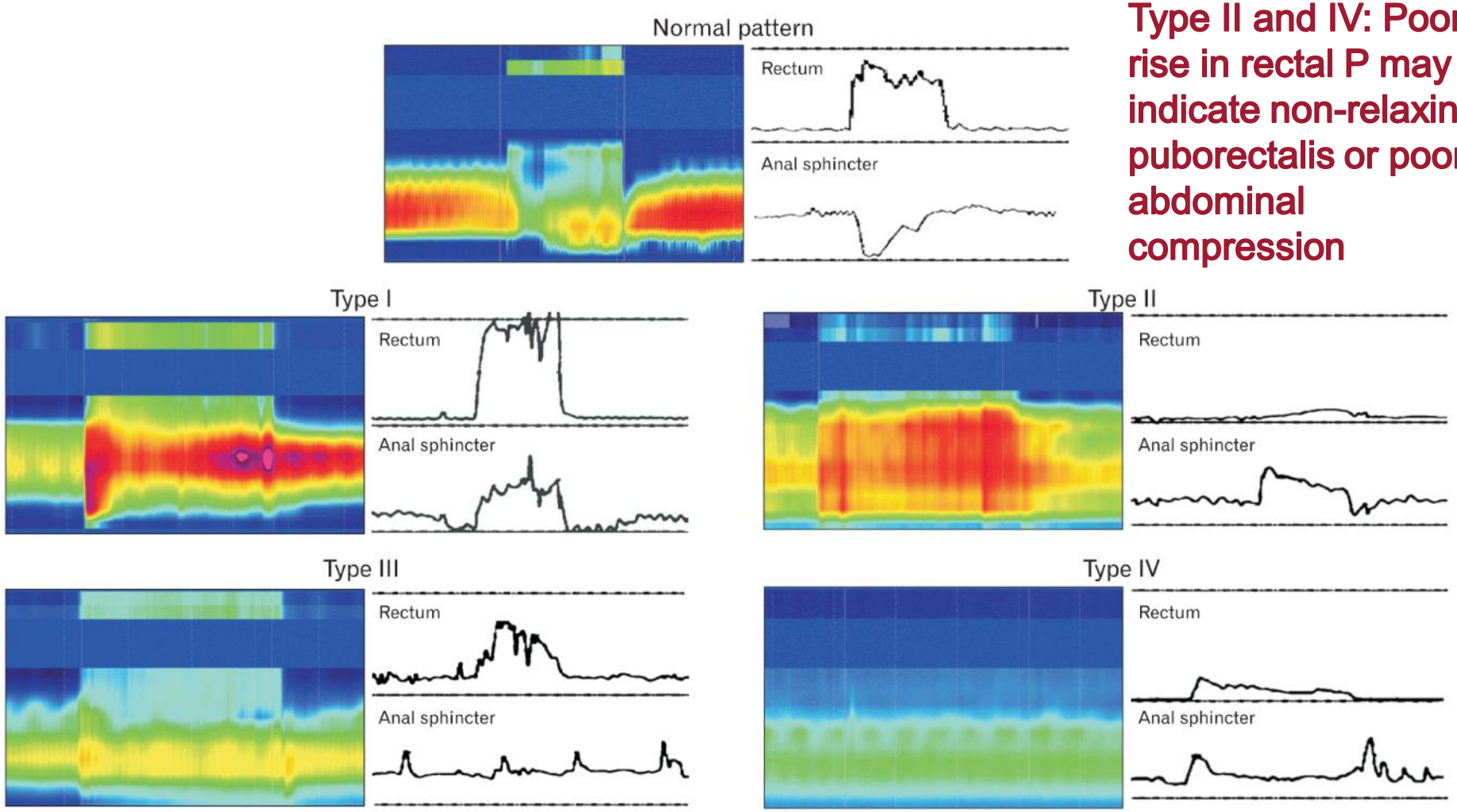
Initial Evaluation - Digital Rectal Exam





1. Resting tone
2. ↑ sphincter tone and contraction of PR w/ squeeze
3. Tenderness of PR may indicate levator ani syndrome
4. Have pt bear down ("expel my finger")
   - PR should descend
   - Should note relaxation of sphincter tone
   - Palpate anteriorly for rectocele

Dyssynergic Defecation Patterns with Push



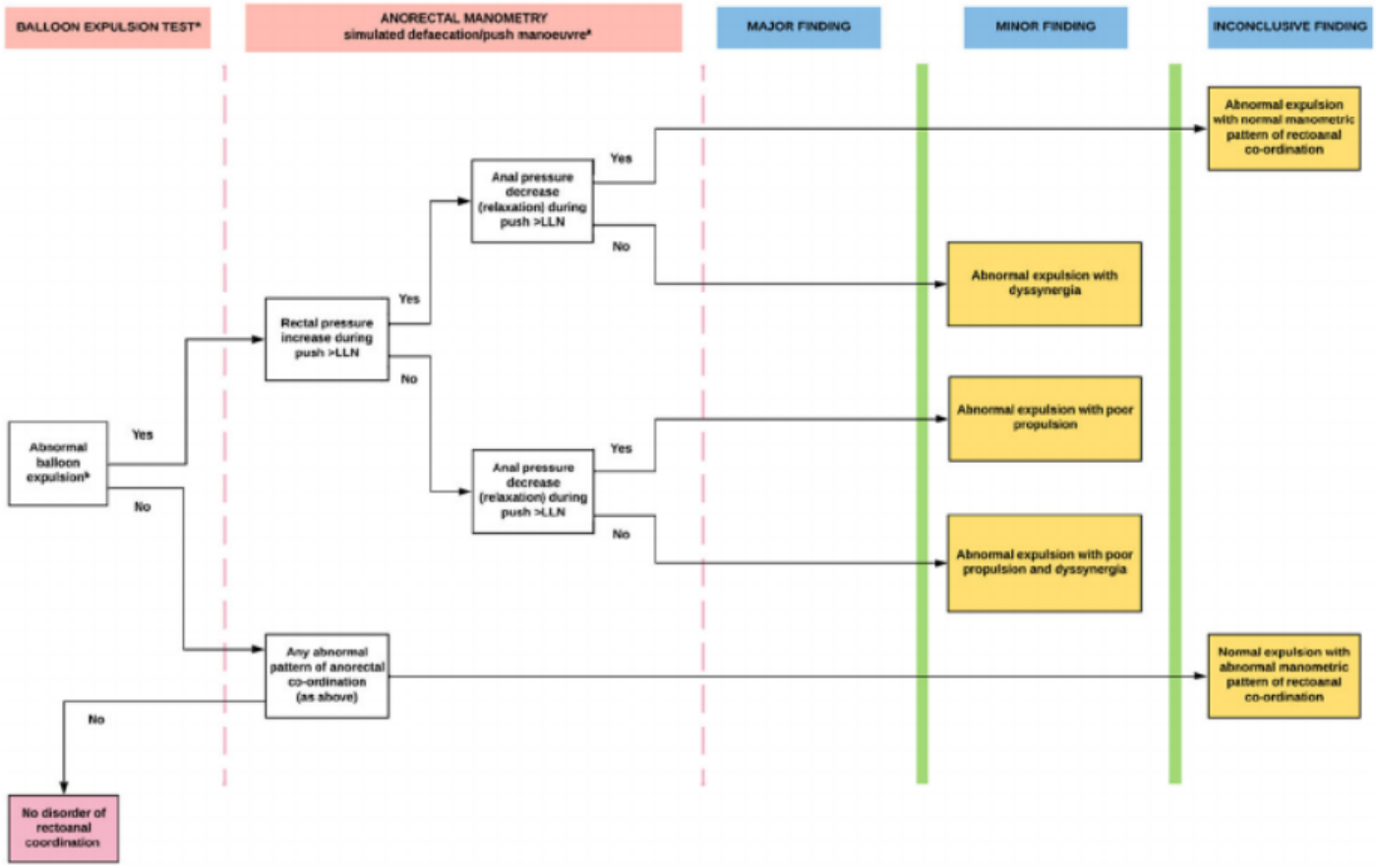
Type II and IV: Poor rise in rectal P may indicate non-relaxing puborectalis or poor abdominal compression

Balloon Expulsion Test

- Balloon tipped catheter inserted into the rectum and inflated with 50mL of H_2O
- Timed measurement of patient's ability to evacuate balloon in privacy
- Balloon expulsion time of >2 min is abnl
- Abnl study suggests obstructive defecation
- Causes of obstructive defecation
  - dyssynergic defecation
  - Hirschsprung's
  - rectal prolapse
  - rectocele
  - enterocele
  - strictures

London Classification

Fig. 4 IAPWG classification part 3: *Disorders of rectoanal coordination*. [a]It requires the use of both balloon expulsion test and anorectal manometry[b] or impaired evacuation of contrast medium (prolonged evacuation end time and/or reduced percentage of contrast emptied) on alternative testing, e.g. barium or MR defecography. All results to be interpreted in context of adjunctive testing. * akin to 'type I' dyssynergia. ** akin to 'type IV' dyssynergia. *** akin to 'type II' dyssynergia. *LLN* Lower limit of normal ULN



Standard Sitz-marker Test

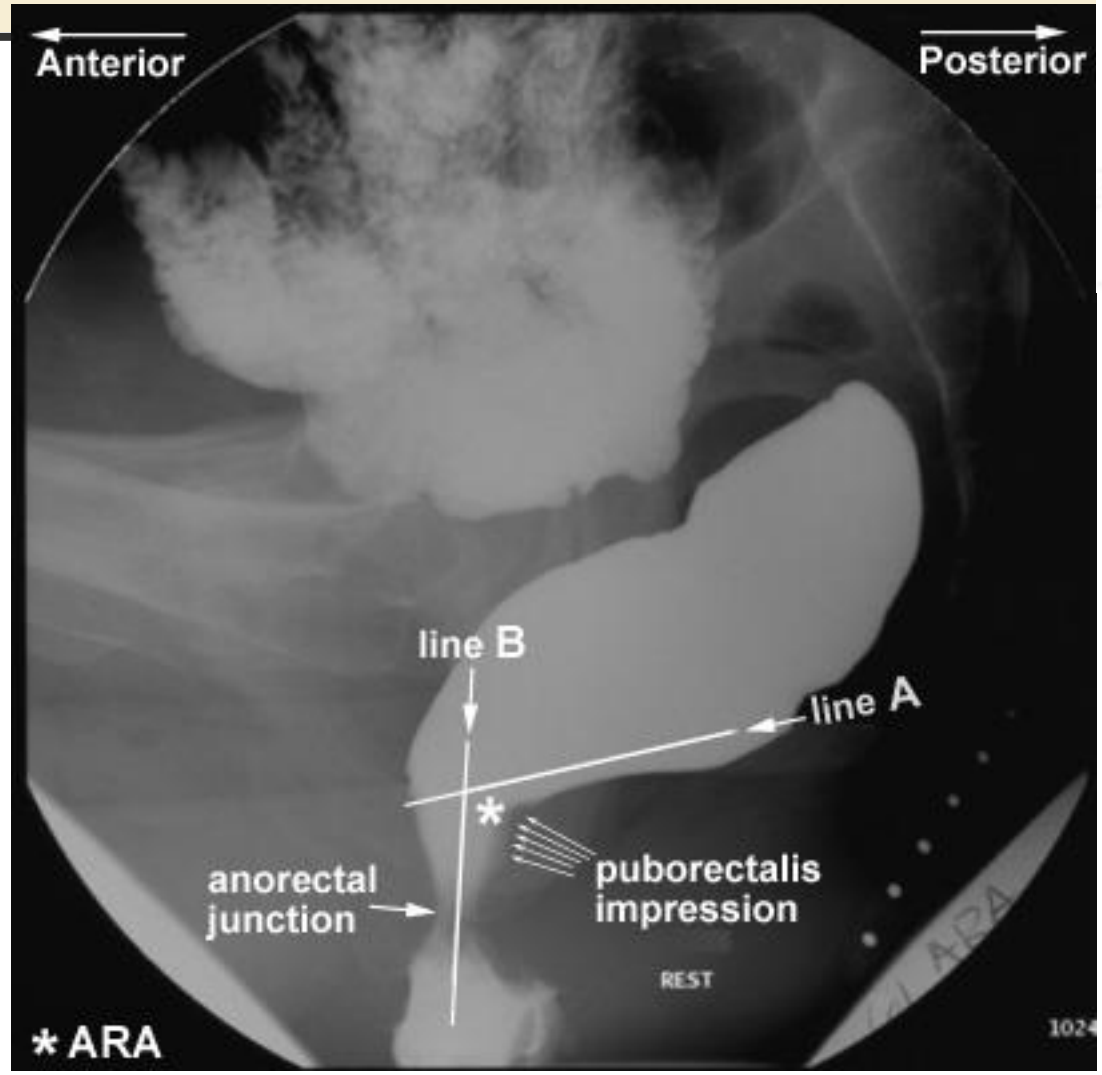
- Capsule contains 24 radio-opaque markers
- Patient takes 1 capsule by mouth with water on Day 0
- Patient should not use laxatives, enemas or suppositories for 24hrs before or for 5 days after
- X-ray on Day 5
- Abnl if 20% (>5-6 markers remain)

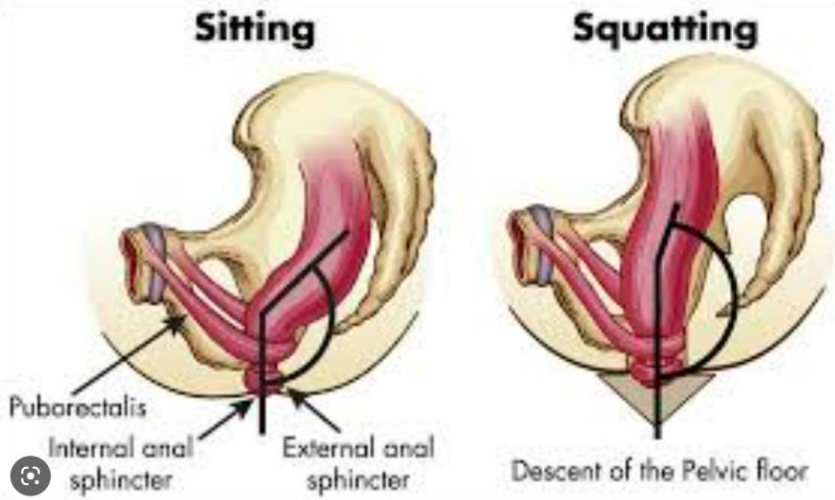
If over 80% (5 or fewer markers remain) of markers are passed by day 5, colonic transit is grossly normal

If most rings are scattered about the colon, patient most likely has hypomotility or ‘colonic inertia’

If most rings are gathered in the rectosigmoid, may have functional outlet obstruction (may need anorectal manometry with balloon expulsion or defecography)

Defecography



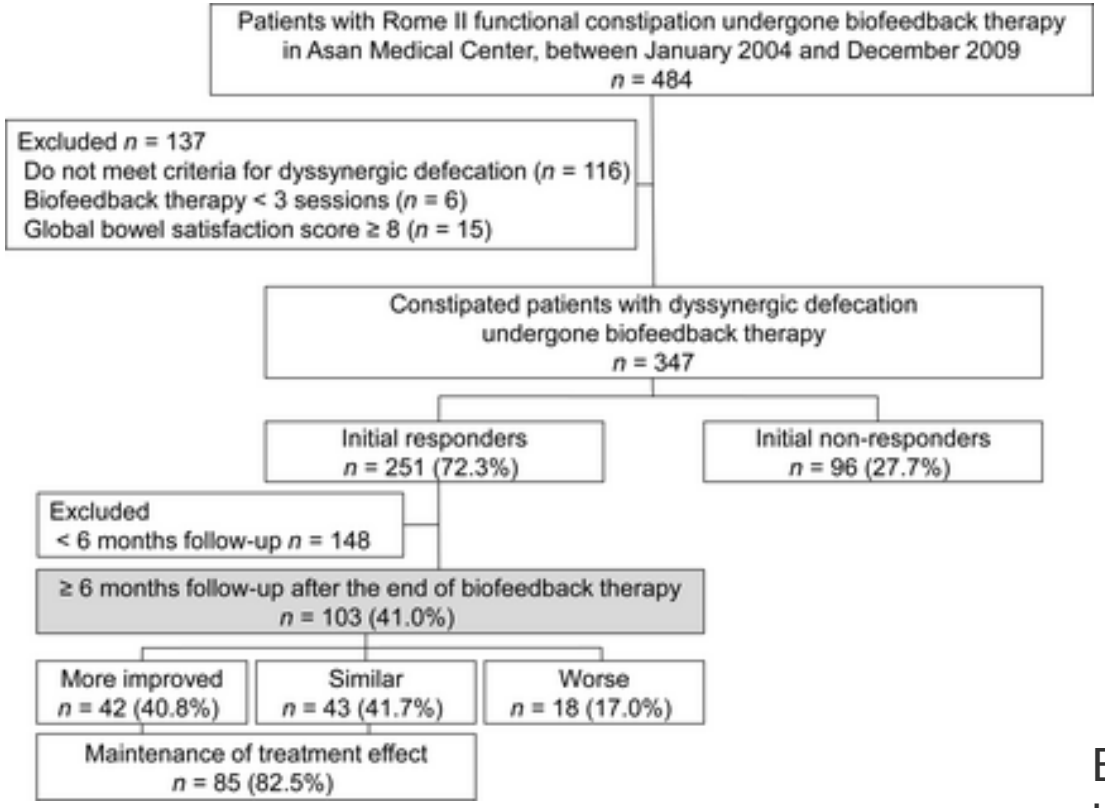


Helps evaluate for anatomical causes of constipation (rectocele, rectal prolapse, enterocele, descending perineumsyndrome)

Line A- Posterior wall of the rectal ampulla

Line B –Axis of anal canal

Biofeedback Therapy is Effective Long-term For Dyssynergic Defection

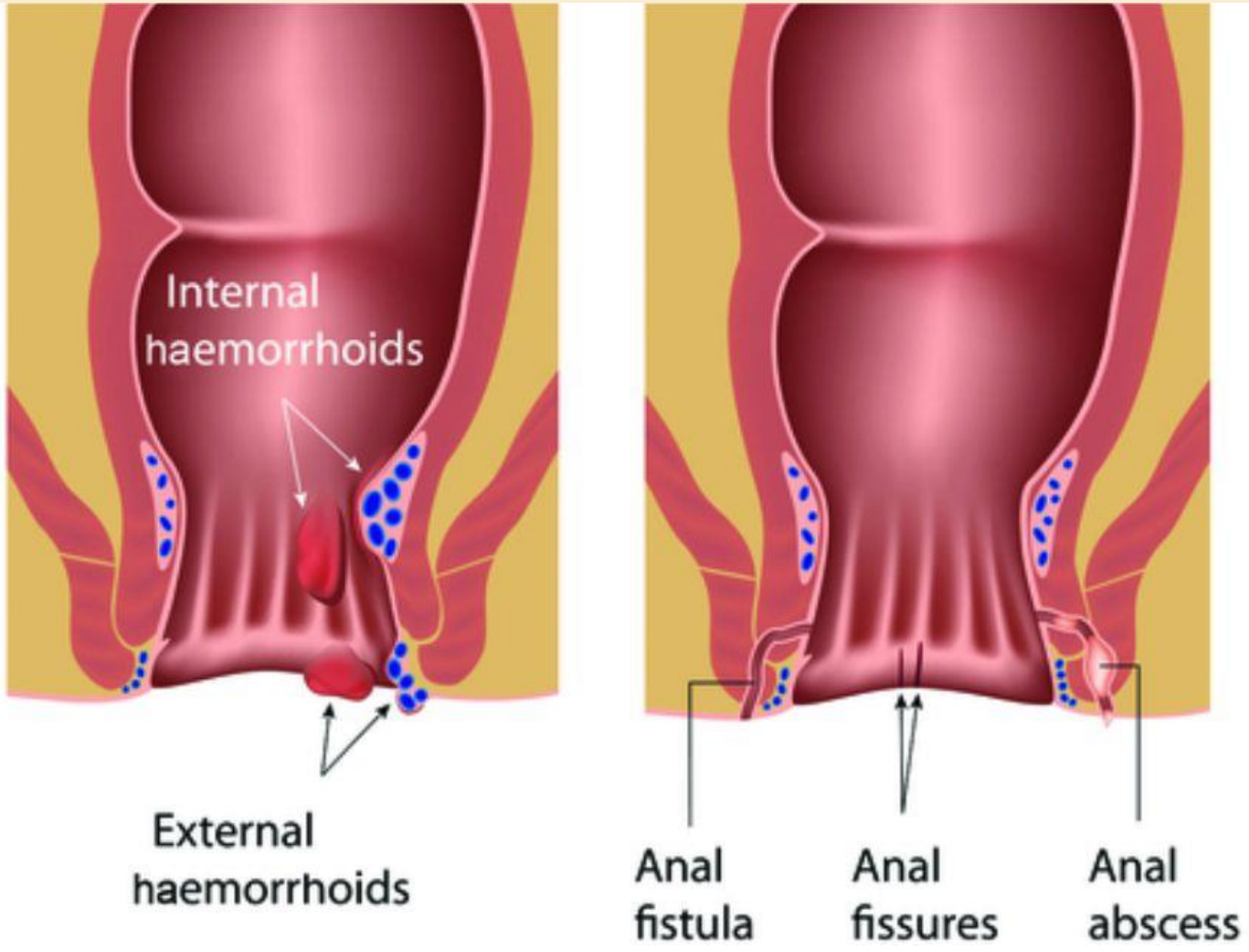


**** Results of a median 44 months follow-up***

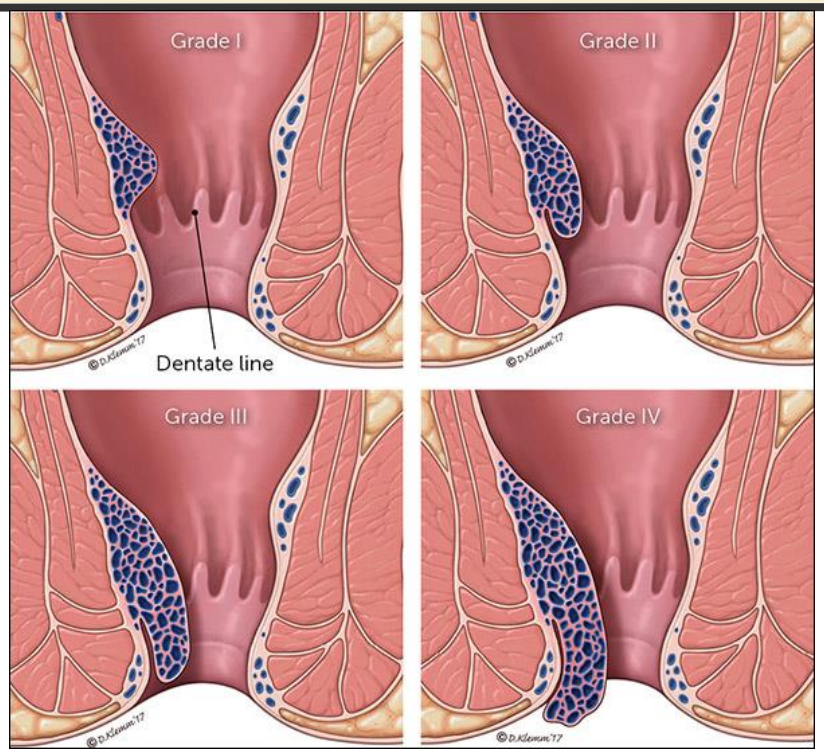
Biofeedback therapy is an instrument-based behavioral learning process centered on operant conditioning

Lee, et al. Neurogastroenterology & Motility 25 MAR 2015

COMMON ANORECTAL DISORDERS



Grading of Internal Hemorrhoids

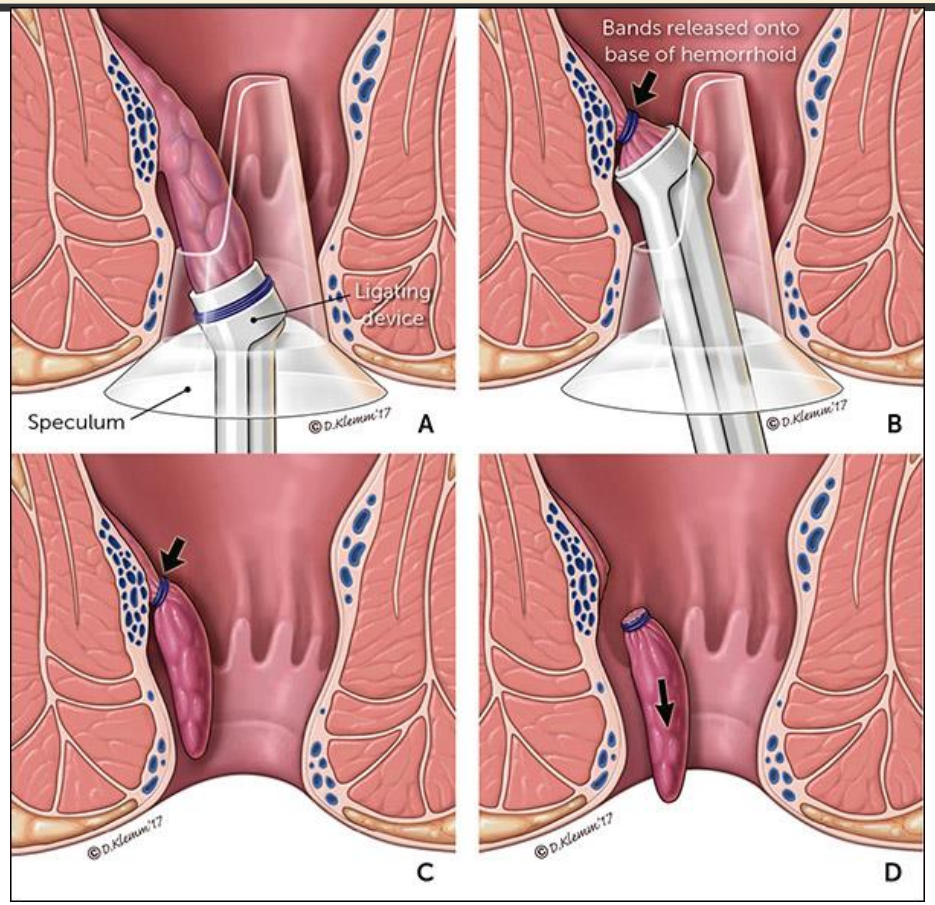


Grade I = asymptomatic outgrowth of anal mucosa caused by engorgement of underlying venous plexus and connective tissue; grade II = hemorrhoid prolapses but spontaneously reduces; grade III = hemorrhoid prolapses and must be manually reduced; often accompanied by pruritus and soilage; grade IV = hemorrhoid prolapse that cannot be reduced; often accompanied by chronic local inflammatory changes.

Hemorrhoidal Therapy

- Conservative
  - High fiber diet
  - Sitz baths
  - Topical creams/ointments/suppositories with hydrocortisone and/or lidocaine
  - Oral NSAIDs, acetaminophen
- Minimally invasive
  - External hemorrhoid thrombectomy
  - Rubber band ligation
  - Injection/sclerotherapy
  - Coagulation (infrared, laser, bipolar)
- Surgical
  - Hemorrhoidectomy
  - Stapled hemorrhoidectomy (PPH)
  - Hemorrhoidal aa. ligation

Illustration of rubber band ligation



Usually done in 3 or fewer sessions; 70% success in grade I-III hemorrhoids; avoid in patients who are IC given increased risk of sepsis

Comparison of Outcomes Between Different Surgical Procedures for Treatment of Hemorrhoids

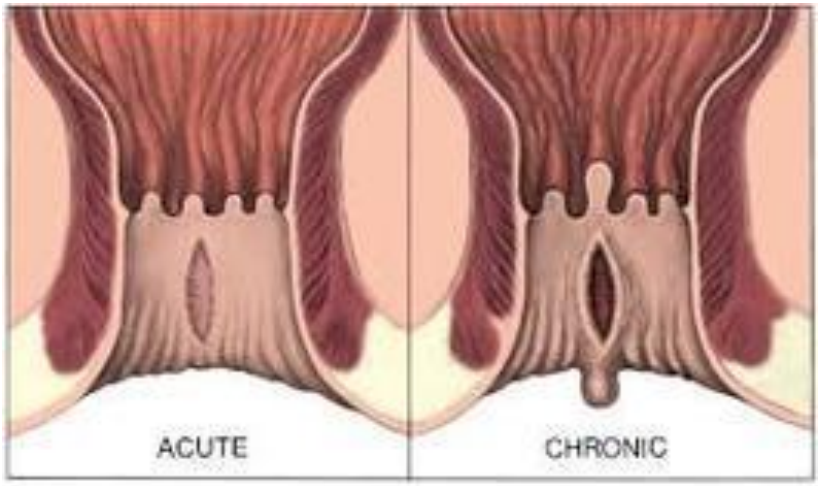
Procedure	Resolution of symptoms	Reduction of prolapsing tissue (mucopexy)	Likelihood of recurrence	Amount of postsurgical pain	Longer recovery time
Banding (i.e., rubber band ligation)	++	+	++	++	+
Infrared photocoagulation	+	Not applicable	+++	+	+
Open hemorrhoidectomy	+++	++	+	+++	+++
Closed hemorrhoidectomy	+++	++	+	+++	+++
Stapled hemorrhoidopexy	++	+++	++	++	++
Hemorrhoidal artery ligation (without mucopexy)	++	Not applicable	++	+	+
Hemorrhoidal artery ligation (with mucopexy)	++	++	++	++	+

+ = Outcome less likely.
++ = Outcome relatively neutral in comparison with other surgical procedures.
+++ = Outcome more likely.

Information from references 7, 21, and 23 through 28.

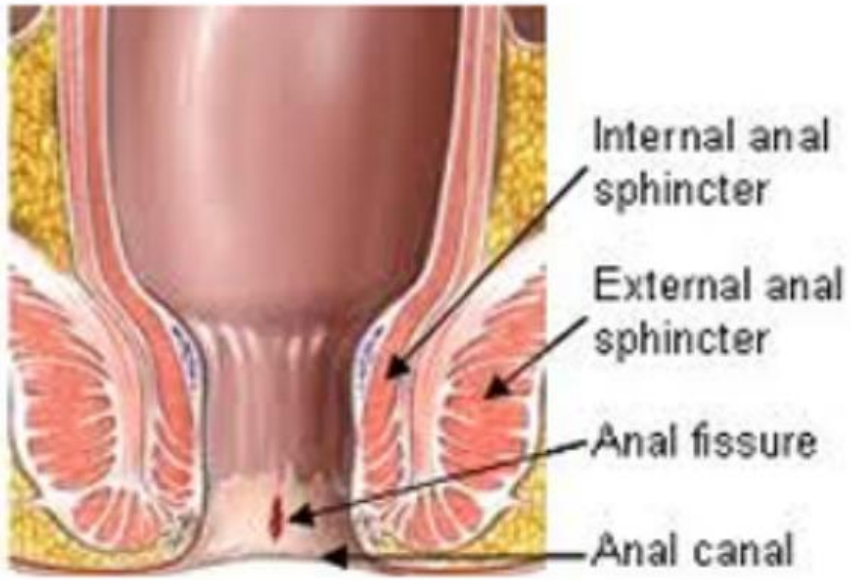
Am Fam Physician. 2018 Feb 1;97(3):172-179.

Anal Fissures



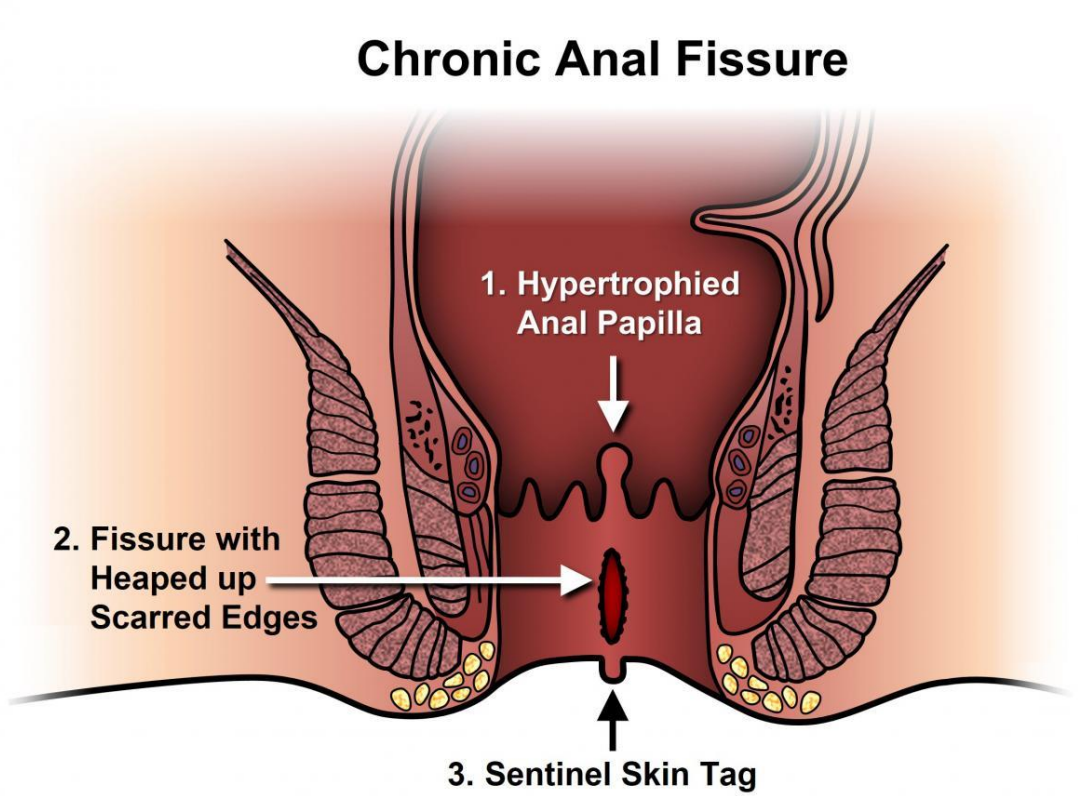
- Superficial linear tear in the squamous epithelium of the anal canal distal to the dentate line
- Commonly caused by passage of a large, hard stool
- Chronic fissures can progress to full thickness involvement of the anal mucosa

Acute Anal Fissures



Perform inspection in prone or lateral position- defer DRE

Chronic Anal Fissure



Initial Management

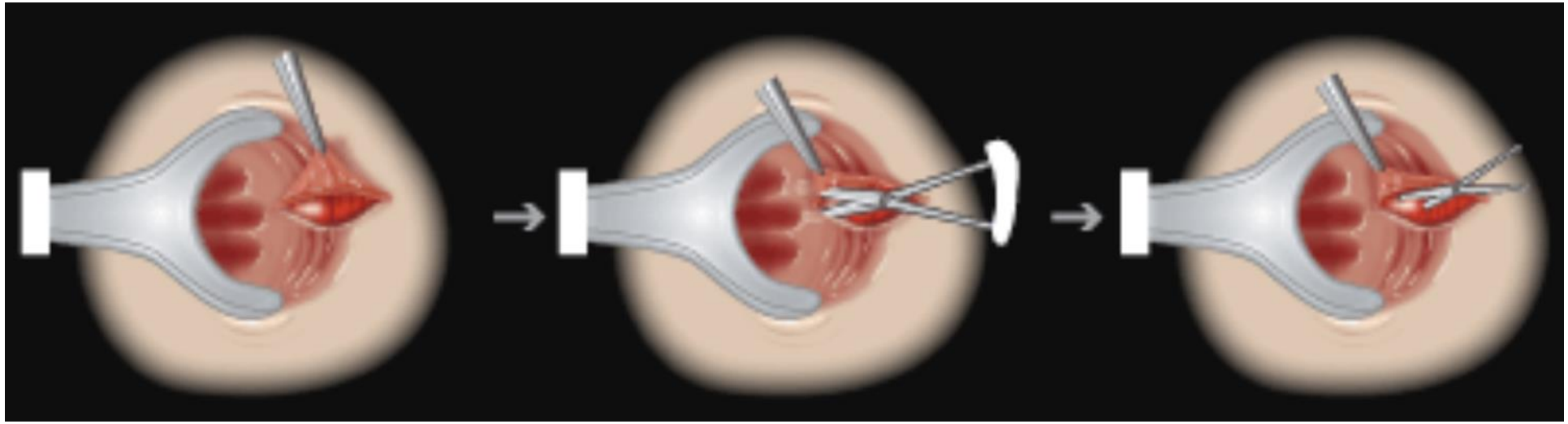
- Acute Anal Fissure (less than 6 weeks duration)
  - Sitz bath, Fiber supplements, stool softeners, laxatives
  - Expectant management (>50% resolve)
- Chronic Anal fissure (greater than 6 wks/recurrent)
  - Same plus topical CCB (2% Diltiazem/lidocaine; 0.5% Nifedipine/lidocaine) TID for 6-8 weeks results in healing 65-90%
  - Avoid Nitroglycerin ointment (HAs, poor compliance)

Persistent Symptoms

- Always perform follow-up if symptoms do not resolve
- Exam under anesthesia may be warranted to exclude alternative dx
  - Cancer
  - Crohn's
  - Infection
  - Fistula

Surgical Referral Options For Nonhealing

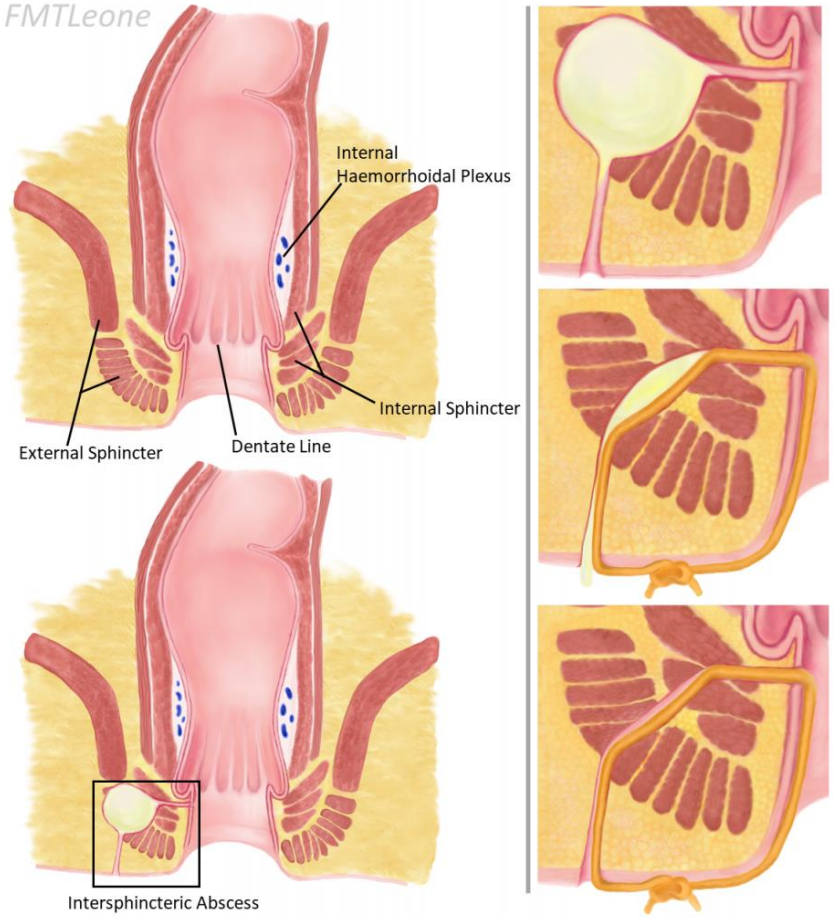
- Chemodenervation of IAS
  - Injection of botulinum toxin (40-100U into the intersphincteric groove)
- Lateral Internal Sphincterotomy (LIS): 92-95% heal



Anal Abscesses and fistulas

- Abscess: Infected cavity near anus or rectum
- Fistula-in-ano: small tunnel that tracks from an opening inside the anal canal to an outside opening in the skin
- Patients with fistulas usually have identifiable external opening
- Complex fistula can be evaluated with US or MRI
- Intersphincteric abscess → fistula (most common

Treatment of anal fistulas



- Fistulotomy used for superficial disease that does not largely involve EAS
- Seton placement pictured useful for high tract disease in attempt to bring together and close tract
- Sphincter sparing flaps, ligation, plugs also possible

TABLE 129.3 Treatment Options for Anal Warts

Treatment	Success rate	Comments
Podophyllin	20%-50%	May need repeat applications Skin irritation can occur Not used in the anal canal Poorly absorbed by keratinized lesions (most chronic warts are keratinized)
Trichloroacetic or dichloroacetic acid	75%	Can be used in the anal canal Care is required to control the size of the slough
Cryotherapy	75%	Can be used in the anal canal Care is required to limit the size of the wound Fumes from the therapy can contain active HPV*
Topical 5-fluorouracil	50%-75%	Probably better used after surgical excision to decrease the frequency of recurrence
Imiquimod	75% in women 33% in men	Cannot be used in the anal canal; works better in women than in men
Surgical excision (usually combined with cautery)	60%-90%	Fumes from the cautery may contain HPV* May need to be done in more than 1 session to avoid excising or burning excessive anoderm if a thick carpeting of lesions is present
Intralesional interferon-α	>70%	Injected into the base of up to 5 warts 3 times a week for 3-8 weeks Approved by the FDA for refractory condyloma
HspE7	Experimental	Promising treatment involving subcutaneous injections Fusion protein that combines immune-stimulating properties and a target antigen from HPV
External-beam radiation therapy	Variable	Reserved for giant cavitating condyloma (Buschke-Löwenstein lesions) Used as a last resort, usually when bleeding or tissue invasion cannot be controlled
Immunotherapy	Up to 50%	Requires in-office injection every 2 weeks for up to 16 weeks
Catechins	52%	Can be applied by the patient at home

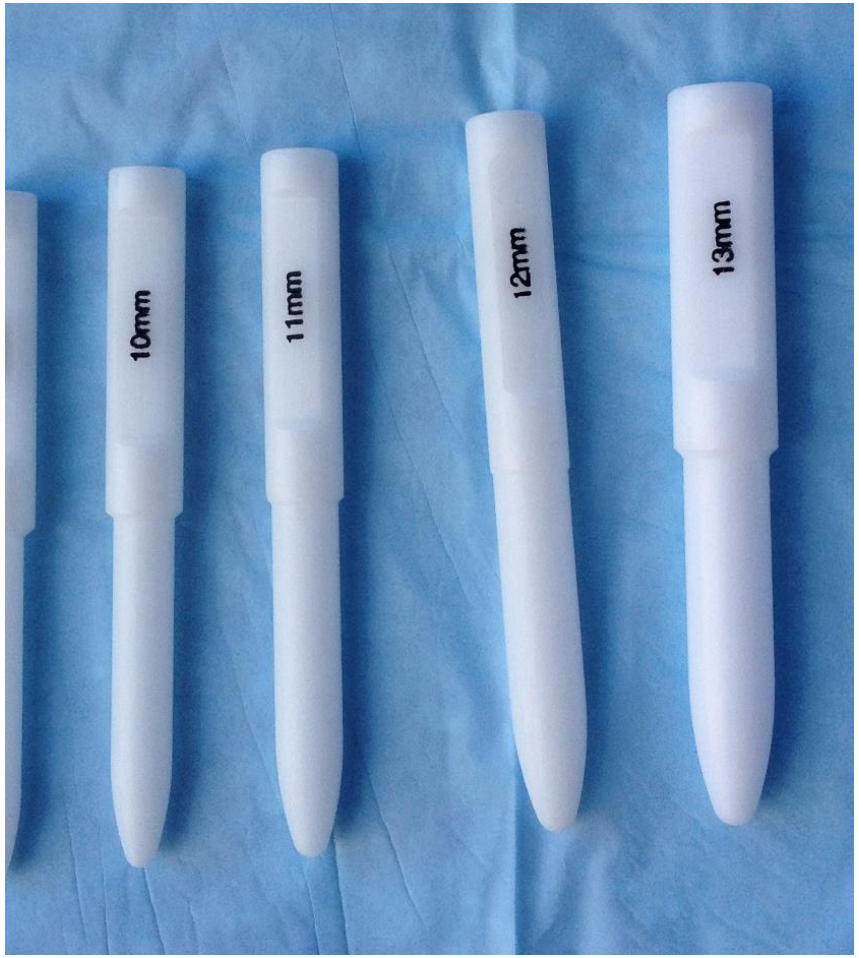
*The risk of HPV transmission from such fumes is unknown.

Anal warts (condyloma acuminata)

Caused by HPV(subtype 6, 11 account for 90%)

Vaccination has been associated with a reduction in warts by 90%

Anal stenosis



- Most commonly occurs following anorectal surgery (90% following hemorrhoidectomy)
- Other etiologies- Crohn's, IPAA, XRT, trauma, STD
- Treatment:
  - Mild: Fiber supplements, stool softeners, increased hydration; stricturotomy after hemorrhoidectomy
  - Moderate: progressive dilation
  - Severe: anoplasty with flap creation

Perianal hidradenitis suppurativa

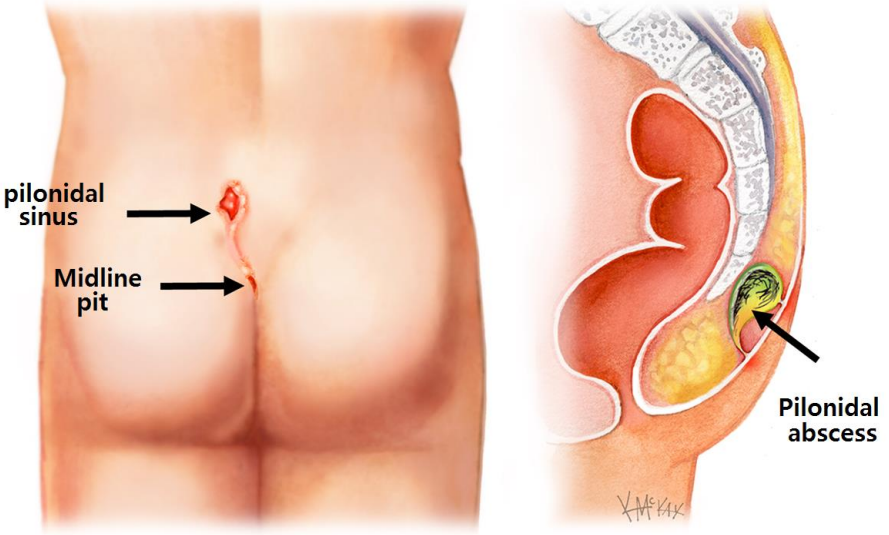
- Chronic recurrent inflammatory skin disorder affecting the hair and areas bearing apocrine sweat glands that can extend to dentate line
- Painful subcutaneous nodules that can progress to abscesses and fistula that can result in scarring, dermal contraction, induration, and chronically malodorous draining sinus tract

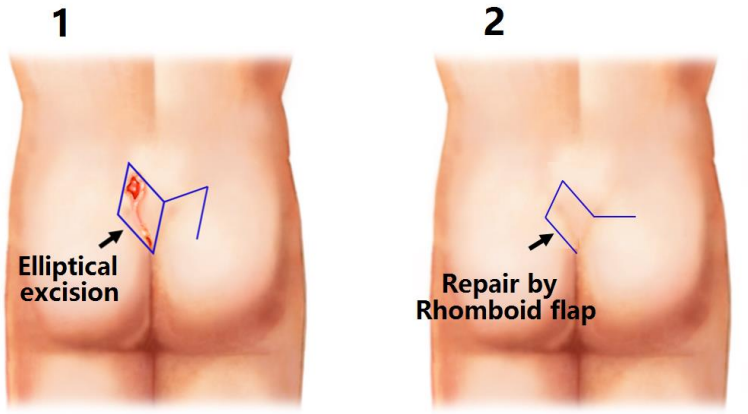
Treatment of Hydradenits Suppurativa

- Initial: weight loss, good hygiene, smoking cessation; drainage of abscess, topical clindamycin/chlorhexidine -> oral broad spectrum abx)
- Persistent dx- medical management:
  - Infliximab/adalimumab; dapsone; retinoids, anti-androgens (spironolactone)
- Surgical (unroofing sinus tracts; wide excision)

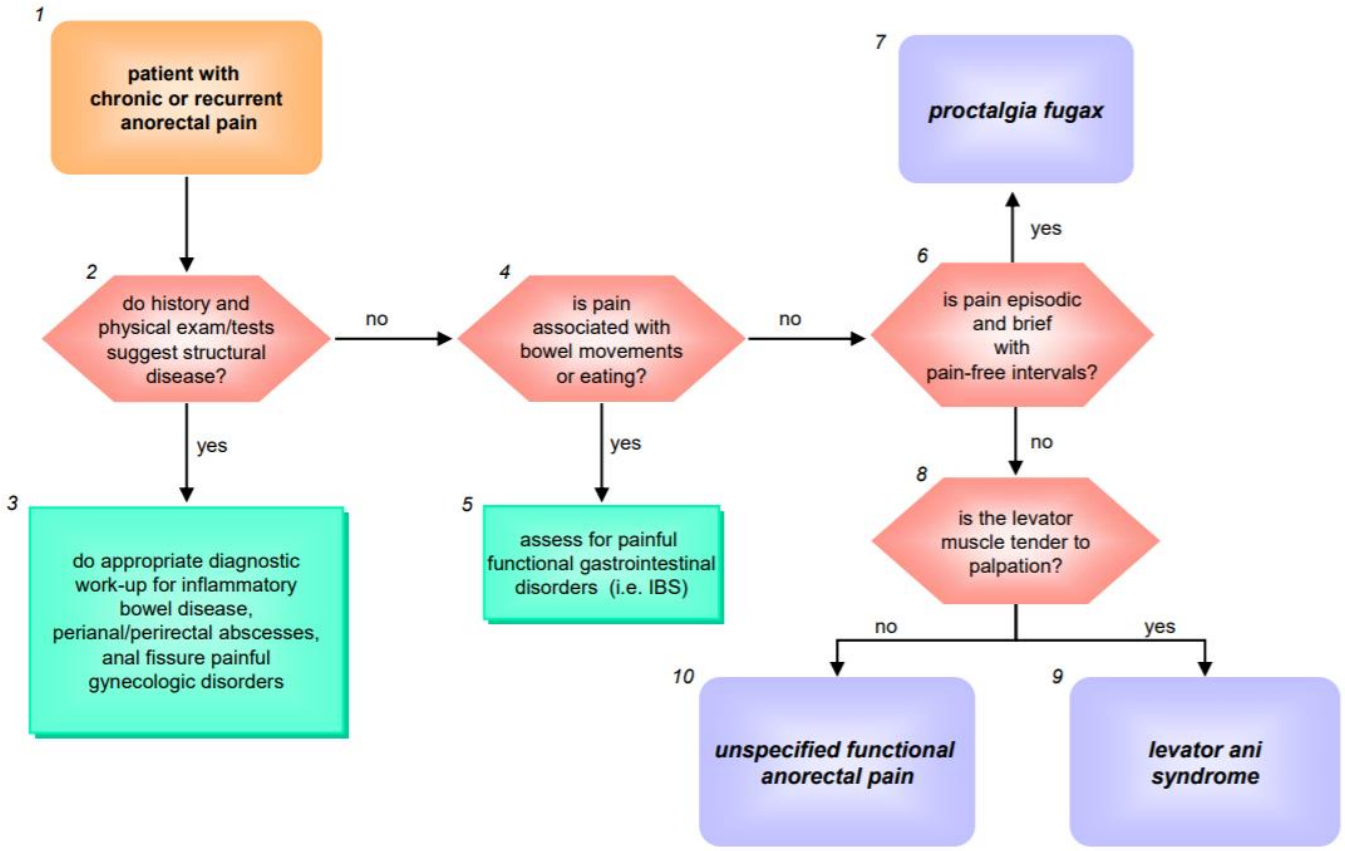
Pilonidal Disease

- Burrowing of hair shafts into subcutaneous tissue
- Risk factors: male sex, younger age, obesity, stiff/course hair, excessive hair
- Induration and abscess commonly found
- Surgical management: hair removal, incision and drainage; flap creation





Functional Anorectal Pain Syndromes

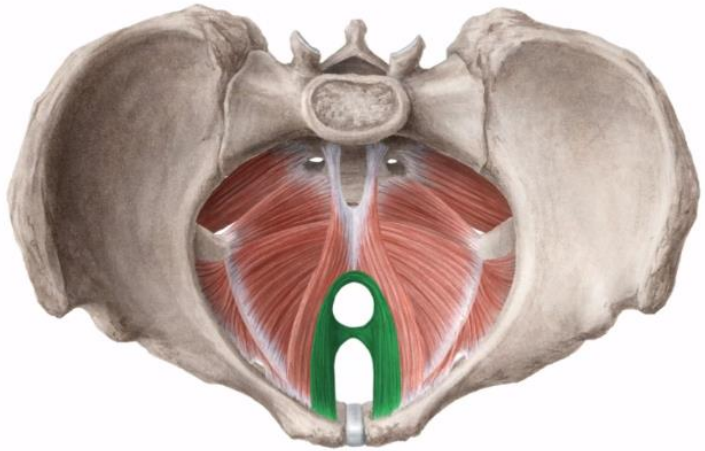


Functional Anorectal Pain- Rome IV

- Subtyped based on duration of pain and presence or absence of pain on palpation
- **Proctalgia fugax:**
  - severe rectal pain lasting a few seconds to a few minutes (rarely>30 min)
  - Due to brevity of attacks, treatment is usually supportive

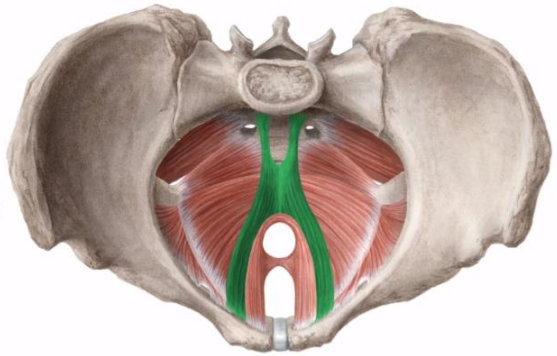
Levator Ani is Complex of 3 Muscles

Puborectalis
Musculus puborectalis

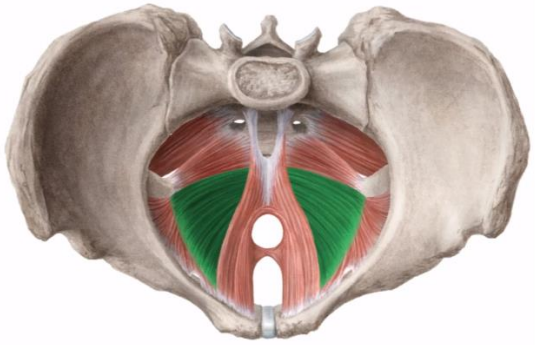


PR: Originates lateral from the symphysis on both sides and encircles the rectum (anorectal junction) which causes a ventral bend between the rectum and anal canal. Partly it is interwoven with the external anal sphincter.

Pubococcygeus
Musculus pubococcygeus

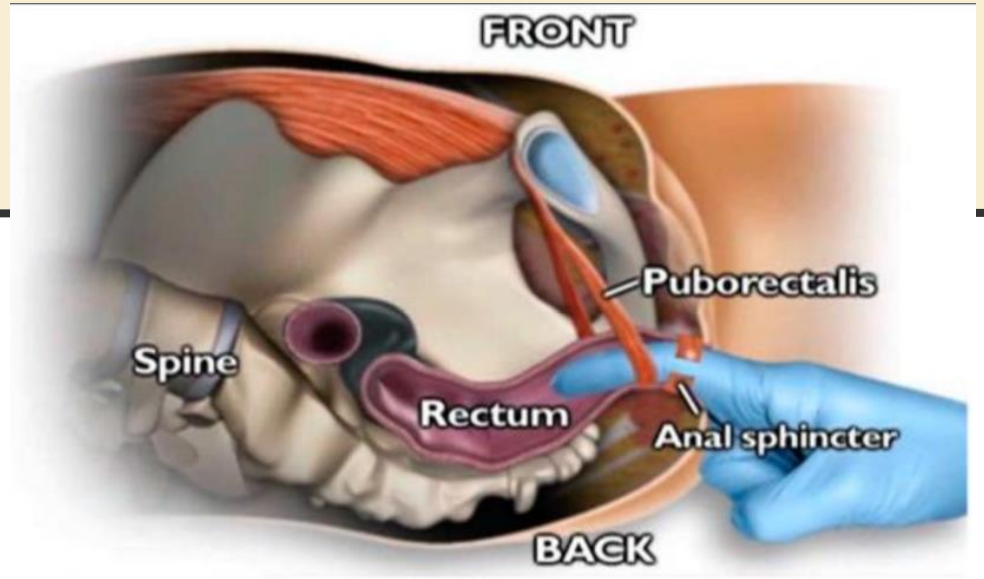


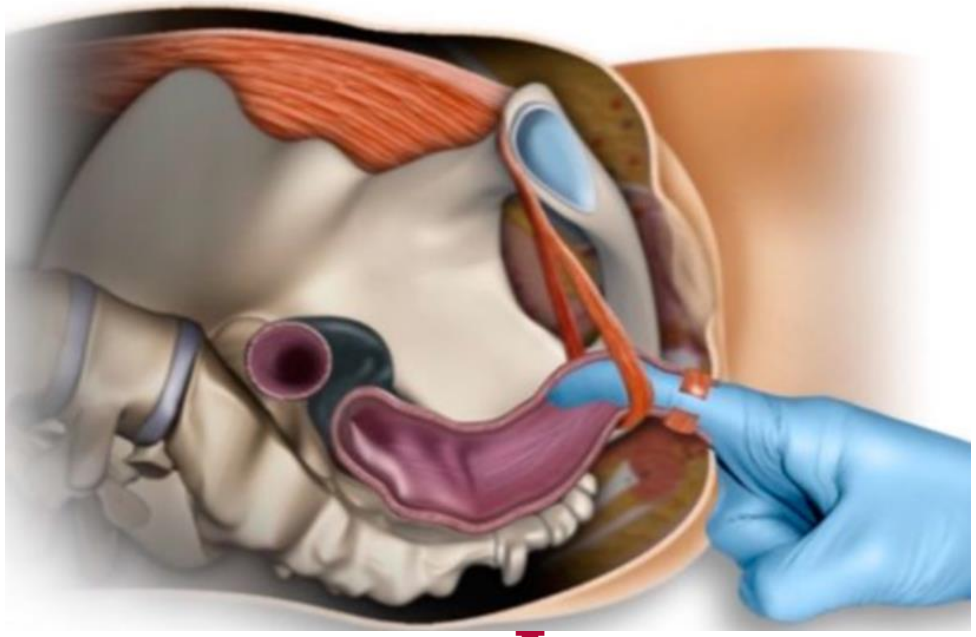
Iliococcygeus
Musculus iliococcygeus



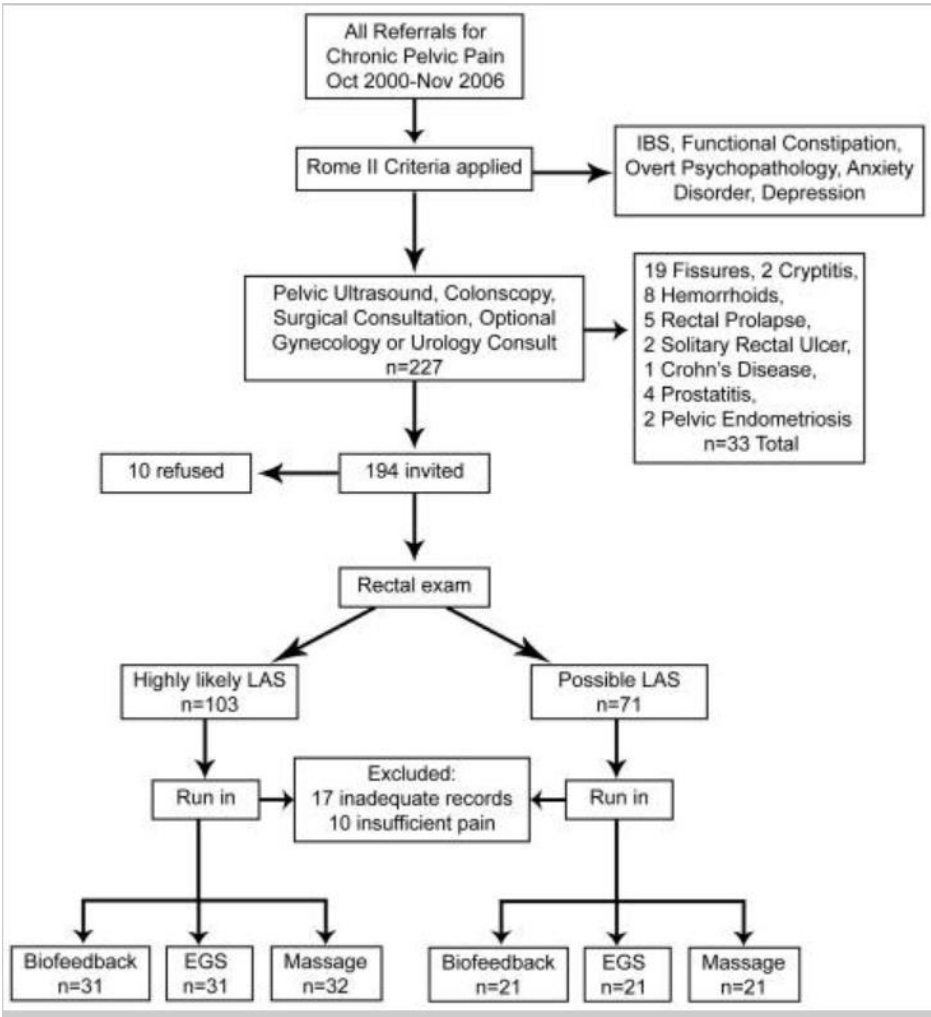
Levator Ani Syndrome

- Pain w/palpating puborectalis; >30 min
- Treatment options:
  - biofeedback
  - muscle relaxants (diazepam, cyclobenzaprine)
  - Electrical stimulation
  - Botox
  - Dry needling
  - Neuromodulators (TCAs, SNRIs, gabapentin, pregabalin)





Biofeedback vs Massage vs Electrogalvanic Stimulation



Gastroenterology. 2010 Apr;138(4)

Results in those highly likely to have LAS

- Biofeedback group: five wkly 30 min sessions
- EGS group: Nine 30-45 minutes sessions with high-voltage EGS, 3 times/week
- Massage: 9 teaching sessions on levator ani massage
- Those "highly likely to have LAS":
  - adequate relief in 87% biof vs 45% EGS vs 22% massage
  - Pain days per month decreased from 14.7 →3.3 after biof; 8.9 after EGS; and 13.3 after massage.
  - Pain intensity decreased from 6.8 (0–10 scale) at baseline to 1.8 after biof; 4.7 after EGS; and 6.0 after massage.
  - Improvements were maintained for 12 months

Gastroenterology. 2010 Apr;138(4)

Functional Anorectal Pain and Hypertonia

- Amsterdam study of 113 patients with LAS or unspecified FAP (42% male) (mean age 51)
  - 10% LAS
  - All underwent anorectal testing with EMG
  - Hypertonia dx on DRE and EMG:
    - 20% anal sphincter
    - 28% levator ani
    - 42% both
  - All failed conservative therapy
  - All actively underwent biofeedback during study

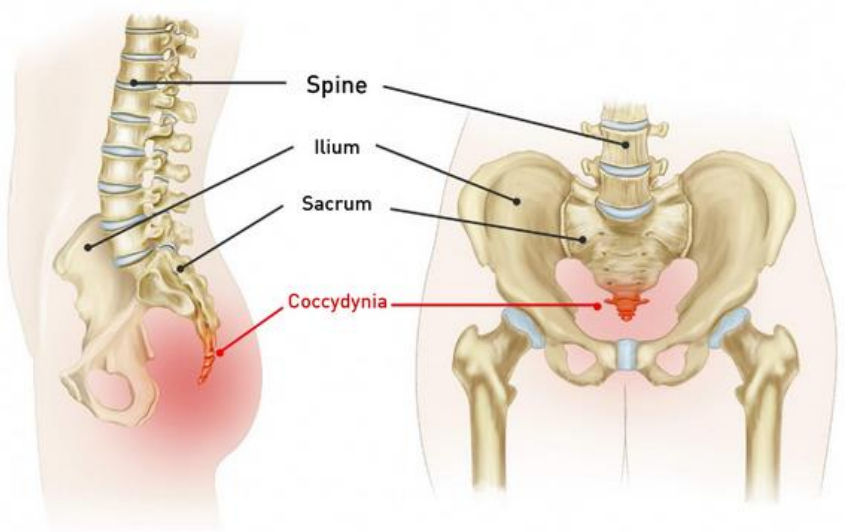
Ooijevaar, et al. Techniques in Coloproctology, Accepted Feb 2019

Results

- 29/113 pts (26%) had good response after 1 BTX-A
- 47% had a sustained response (complete pain resolution with 3 or fewer BTX-A injections)
- Pts with isolated LA hypertonia trended towards poorer response than those isolated sphincter hypertonia or combined hypertonia (p=0.06)
- Temporary FI reported in 2/113 patients

Ooijevaar, et al. Techniques in Coloproctology, Accepted Feb 2019

Coccydynia- Pain or aching in coccyx



Often due to functional pain, trauma or arthritis

Reproducible pain on DRE

Initial management: Sitz baths, NSAIDs, stool softener, support pillow

Persist- Injection of analgesia or glucocorticoid; referral for pelvic floor therapy, rectal diazepam

Coccygectomy should be last resort as can result in persistent functional pain

Pruritis Ani – pain or burning

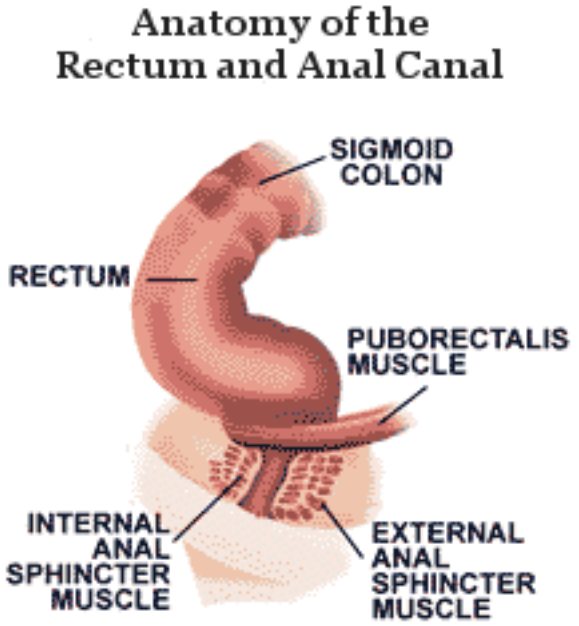
Gather History	Eczema, psoriasis, anal intercourse, anal/vaginal discharge, use of topical wipes/tissues/medication
Reduce Irritation	After exclude other etiologies on inspection, recommend keeping area clean, dry and avoiding irritants (soaps, scented tissues, excessive wiping); wearing loose clothing
Diet	Discuss common dietary precipitants and trial of elimination (coffee, tea, colas, alcohol, citrus fruits, dairy products, spicy food or pepper)
Topical Therapies	Topical therapy- estrogen in post-menopausal; brief course of topical steroid, zinc oxide ointment)

FECAL INCONTINENCE: CLINICAL SUBTYPES

Passive – stool leakage with little or no forewarning	Urge – occurs despite active efforts to retain stool	Seepage – Leakage after BM
• Often have low resting anal pressures • Rectal hyposensation common	• May have abnl squeeze pressure and duration • May have reduced rectal capacity with rectal hypersensitivity	• Incomplete evacuation or impaired sensation • Some may have overflow related to dyssynergic defecation

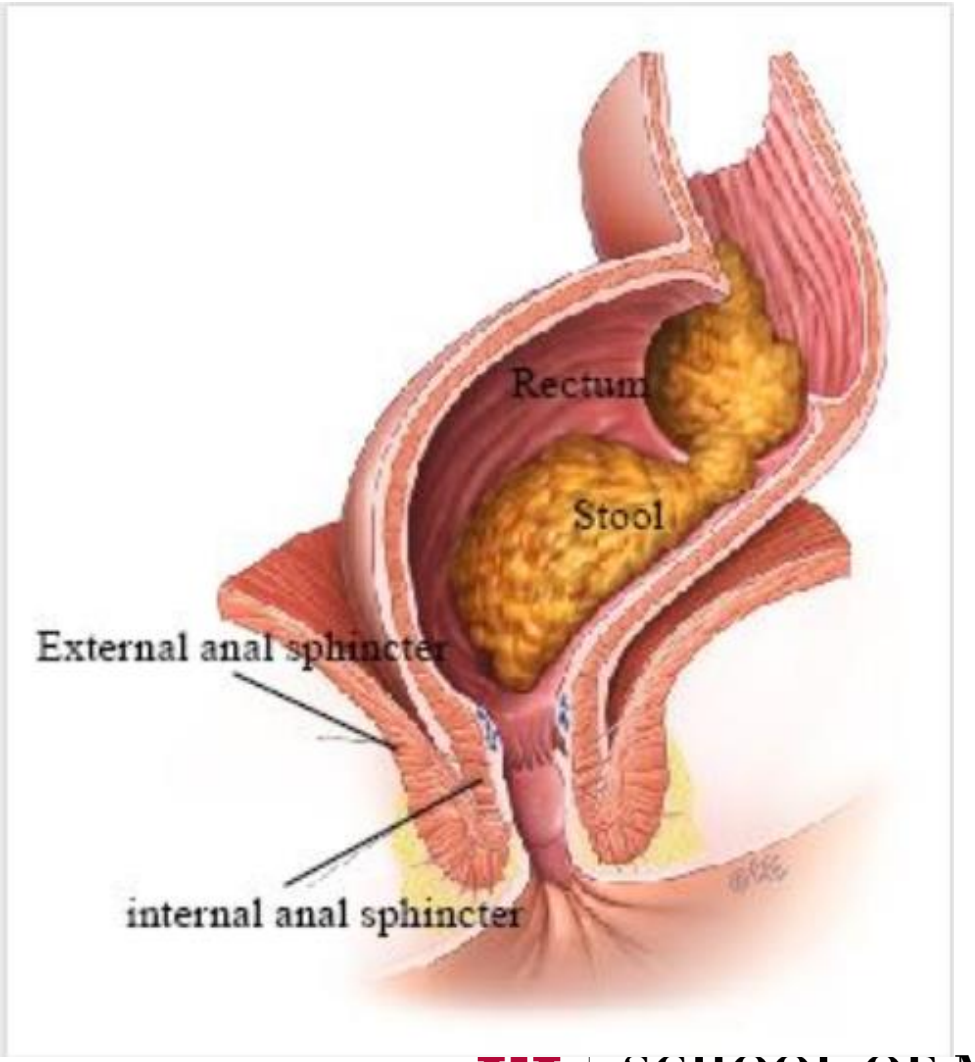
Normal Anorectal Function

- IAS- smooth muscle, 70-85% of resting tone
- Stool causes rectal distention
  - –Rectal contraction
  - –Urgency sensation
  - –Relaxation of IAS (RAIR)
- EAS, PR component of LA can be voluntarily contracted to maintain continence



At Least 8 Factors Affect Continence

1. Sphincter function
2. Anorectal sensation
3. Puborectalis function
4. Rectal compliance
5. Colorectal motility
6. Stool consistency
7. Peripheral/central innervation
8. Cognition



Pathogenesis and Etiology of Fecal Incontinence

Anal Sphincter Weakness

Injury: obstetric, surgical (hemorrhoidectomy, internal sphincterotomy, fistulotomy)

Nontraumatic: scleroderma, IAS thinning of unknown etiology

Neuropathic: stretch injury, obstetric, DM

Anatomical Disturbance of Pelvic Floor: fistula, rectal prolapse, descending perineum syndrome

Anorectal Inflammation: Crohn's, Ulcerative colitis, radiation proctitis, anorectal infection

CNS Disease: dementia, stroke, brain tumors. spinal cord lesions, MS, multisystem atrophy (Shy-Drager's syndrome)

Bowel Disturbance: diarrhea (e.g. IBS, post-cholecysectomy)
constipation with or without impaction or overflow diarrhea

Bharucha A. Fecal incontinence. Gastroenterology 2003;24:1672–85.

Supportive Measures

Avoiding offending foods (Fodmaps, caffeine)

Ritualizing bowel habits

Improving skin hygiene

High fiber – 2-6 grams/d can bulk stools by absorbing water and increase stool transit time

- methocellulose 100% soluble and non-fermentable
- psyllium 70% soluble
- *fermentable fibers may cause diarrhea

Anal plugs may be beneficial particularly with neurogenic bowel or sphincter dysfunction

Behavioral Modification in FI

- Avoid rushing to the toilet
  - Increases abdominal wall contractions
  - Reduces focus on pelvic floor
  - Instead, stop and perform Kegels bf proceeding to toilet
- Use a squatty potty of facilitate opening of anorectal angle which may improve emptying
- Use of vaginal or perineal splinting to facilitate rectal emptying

  - 25% of pts will improve with behavioral modification

Biofeedback

- A few small single-center studies have shown benefit of biofeedback over pelvic floor exercises
- Benefit may be highest in those with urge incontinence and predominantly EAS weakness

Haymen, S, Dis Colon Rectum 2009

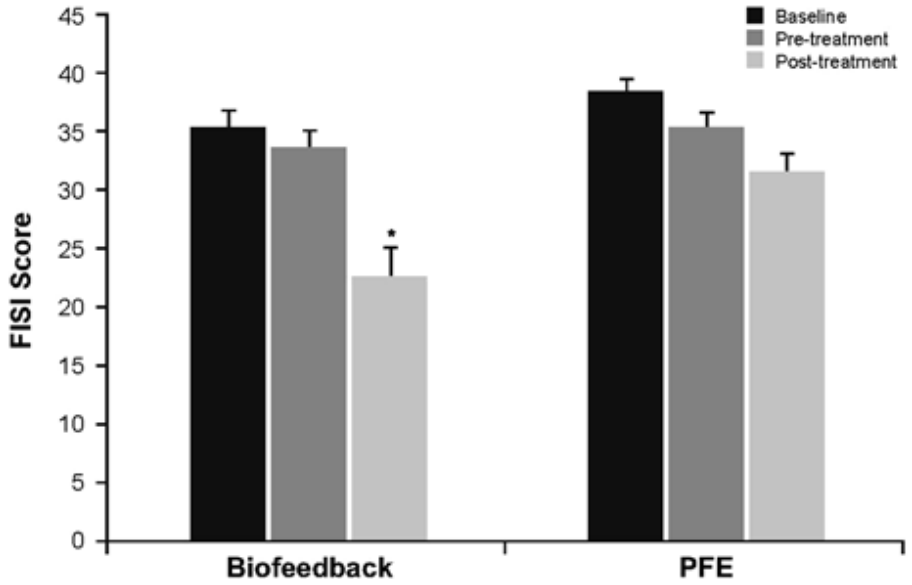


FIGURE 1. Fecal Incontinence Severity Index (FISI) scores at baseline, pretreatment (end of run-in), and at 3 months post-treatment in patients treated with biofeedback versus pelvic floor exercise (PFE). At the 3-month follow-up, patients in the biofeedback group had greater reductions in FISI scores versus patients in the PFE group ($P=0.01$, ANOVA). *$P=0.01$, biofeedback versus PFE. Adapted from Heymen et al.[40]

Overlapping Sphincteroplasty

- EAS muscles overlapped in the anterior midline
- Better outcome than end-to-end repair
- Long-term data shows suboptimal improvement

Year	Author	*N*	Months follow-up	Results
2000	Karoui et al.[84]	74	40	45% Continent to solid and liquid
2002	Halverson and Hull[85]	49	69	4 Stomas 46% Continent to solid and liquid
2006	Barisic et al.[86]	65	60	48% "Good or excellent"
2009	Oom et al.[87]	120	69	37% "Good or excellent"

Sacral Neuromodulation

- Low-amplitude electric current applied to S3 via electrode in sacral foramen
- Temporary lead can be placed in office and left for 7 days or surgically for up to 14 days
- Patients with >50% symptom improvement can go on to have permanent stimulator placed
- Meta-analysis from 2000-2008 shows complication rate of 15% with removal in 2.7&
- Newer device smaller but expensive ($40K)

Sacral Neuromodulation Long-term

- Data from 67/ 120 pts available at 5-8yrs
- FI episodes per week ↓ from a mean of 9.1 at baseline to 1.7 at 5 years,
- 89% (n = 64/72) had ≥50% improvement ($p < 0.0001$)
- 36% (n = 26/72) had complete continence
- 27/76 (35.5%) pts required a device revision, replacement, or explant.

Tjandra, Disease of Colon and Rectum, Feb 2013

Conclusion

Pelvic floor and anorectal disorders are common in GI practice

Thorough anorectal exam is key to accurate diagnosis

Behavioral therapies can improve many functional disorders

Various topical, injection, endoscopic and minimally invasive surgical techniques can improve some anorectal disorders

Business Meeting

INSGNA BUSINESS MEETING - SEPTEMBER 10,2022

Susan Selking called the INSGNA Business Meeting to order at 1145 A.M. EST. Susan introduced herself and the officers and committee chairs.

Nominations and Elections/Immediate Past-President: Dianna Burns, BSN, RN, CGRN
Dianna thanked those in attendance, stating how nice it was to finally be able to meet in person. Encouraged all to visit the vendors, they are also very pleased to be able to attend an in-person conference. Dianna explained her role as historian, and as nominations and elections committee chair. Shared that Susan has worked hard to get new committee chairs this past year. Susan was also successful in getting our Bylaws changed to mentor committee members/chairs to Board positions.

Website Committee: Melissa Burk, BSN, RN, CGRN
Melissa has been updating the website. Encouraged attendees to visit website. Shared email address as Insgna2015@gmail.com Encouraged anyone interested in serving on the board or a committee to please contact one of board or committee chair or to send an email to the insgna email. INSGNA also has a Facebook page.

Program Committee: Angie Arthur, BSN, RN, CGRN
Angie asked attendees to complete evaluations of today's program as well as share ideas/suggestions for future programs. If they are interested in hosting a conference, please can contact Angie. The next conference will be March 4, 2023 at Spring Mill Surgery Center.

Treasurer: Deb Nesbitt, BSN, RN, CGRN
July 31, 2022 accounts: Checking: $5384.89 Savings: $17,659.24

Education/Scholarship Committee: Susan Selking, (for Anndee Gosnell, MSN, RN, CAPA, Committee Chair)
Scholarships available for spring and fall INSGNA conferences as well as annual SGNA conference. There is also a certification scholarship. We have not had any applications recently. We have monies available!
Applications are available on the Web site.

President: Susan Selking, BSN, RN, CGRN
Susan shared the dire situation that the society faces in filling board positions. Not enough volunteers, have recycled the same board members perpetually for years. Bylaws have been restrictive in moving committee members to board positions sooner. We have eliminated the qualification that a member must have served as the Secretary or Treasurer before they can accept the nomination as the President-elect. Committee members can accept nomination to a Board position. Susan asked for a vote to approve the Bylaw changes, they were unanimously accepted.

Susan asked for a motion to adjourn the meeting, Michele Tyring made a motion to adjourn the meeting and Angie Arthur seconded the motion. The meeting was adjourned at 1203 P.M. EST.

Respectfully submitted,
Ann Minnicus, MSN, BSN, RN, CGRN
Secretary

Vendors

Lunch

Approach to Polypectomy: State of the Science

Dr. Charles Kahi

Approach to Polypectomy: State of the Science

Charles Kahi, MD, MSc

INSGNA Spring Conference

March 25th, 2023

The Big Picture

- Colonoscopy: Most performed endoscopic procedure in the U.S.→ 11 M out of 17.7 M

Table 11. Colonoscopy Findings in the Total Population and Screening Population in GI Quality Improvement Consortium Endoscopy, 2014–2016

	Total population (n = 3,901,576)		Screening only, ages 50–75 y, average risk (n = 1,476,145)	
Pathology	n	%	n	%
Adenocarcinoma	22,118	0.6	5409	0.4
Adenomatous polyps	1,328,060	34.0	510,539	34.6
1 or 2 tubular adenomas <10 mm	945,263	24.2	371,706	25.2
3 or more tubular adenomas <10 mm	245,223	6.3	84,707	5.7
≥10 mm, high-grade dysplasia, villous component	178,217	4.6	69,304	4.7
Serrated polyps	211,915	5.4	83,410	5.7
<10 mm with no dysplasia	150,866	3.9	59,771	4.1
>10 mm or with dysplasia or traditional serrated adenoma	56,801	1.5	21,997	1.5
Hyperplastic polyps	695,155	17.8	275,809	18.7
Other pathology	540,268	13.9	120,157	8.1

Source: GI Quality Improvement Consortium Endoscopy.

Peery et al. Gastroenterology 2019;156:254–72.

Why high-quality polypectomy matters

- Colonoscopy quality is operator-dependent!
- Adenoma detection rate (ADR) inversely associated with risk of post-colonoscopy colorectal cancer (PCCRC)
- Polypectomy technique also variable, not correlated with detection

- Kaiser study including 236 PCCRC diagnosed < 4 years after colonoscopy
  - 70% likely missed lesion
  - About 15% incomplete/failed resection of advanced adenomas

Leung et al. Gastroenterology 2023; 164 (3): 470-472

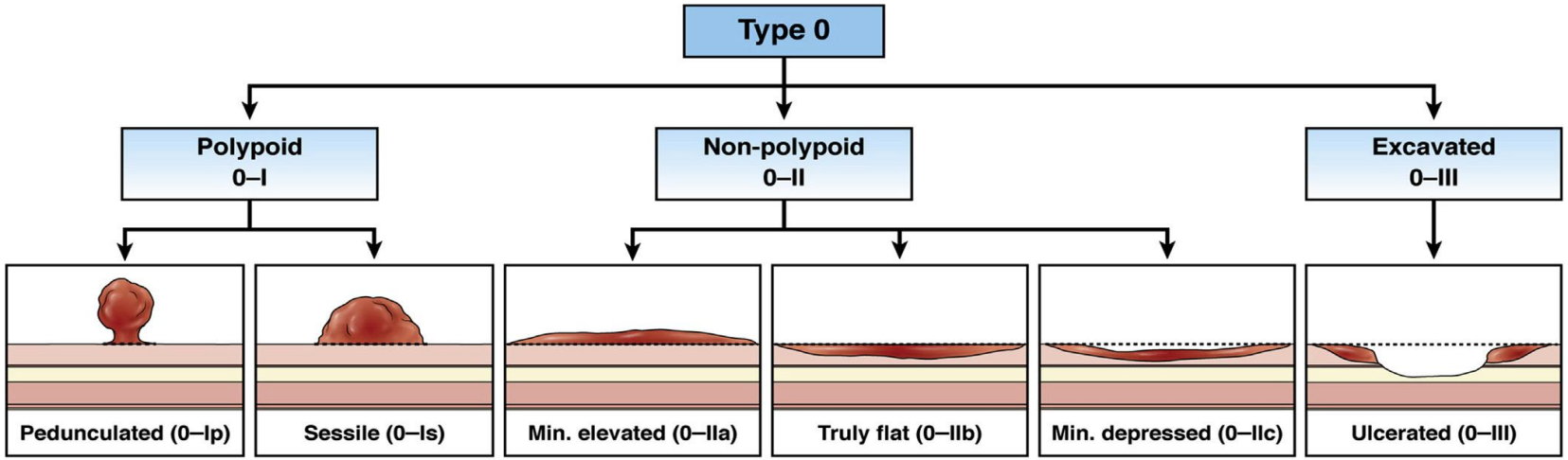
- Incomplete polypectomy is associated with 3-fold higher risk of metachronous neoplasia

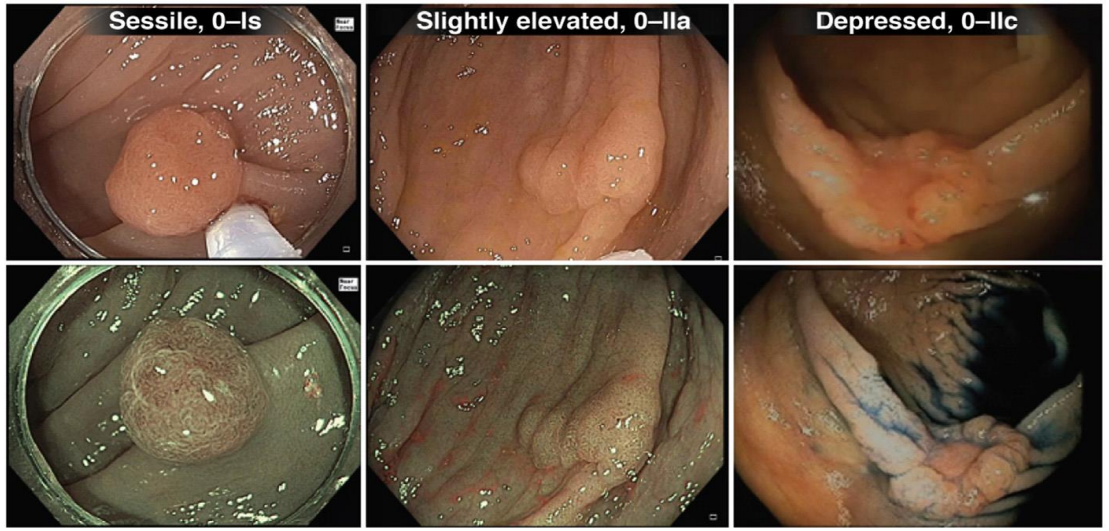
Pohl et al. Annals of Internal Medicine 2021; 174(10): 1377-1384.

Step 0: Systematic Structured Assessment

- Facilitates clear communication between endoscopists
- Defines best practice resection techniques
- Helps identify correct surveillance intervals
- Should include polyp morphology, surface features, size, location
- Helps identify features of submucosally invasive carcinoma (SMIC), especially in large polyps.

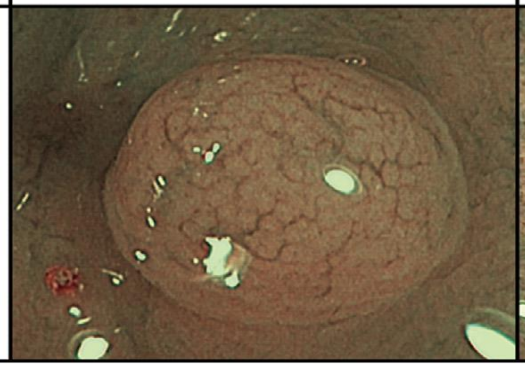
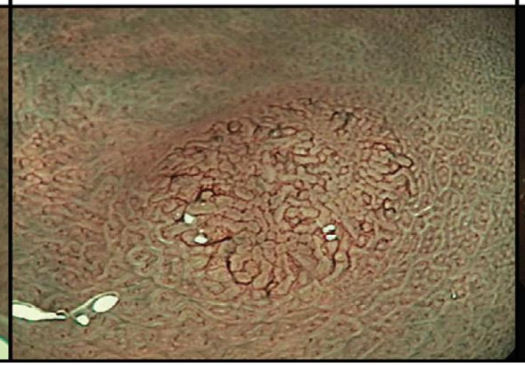
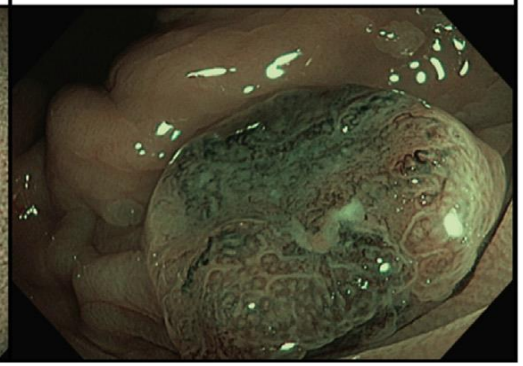
Paris Endoscopic Classification



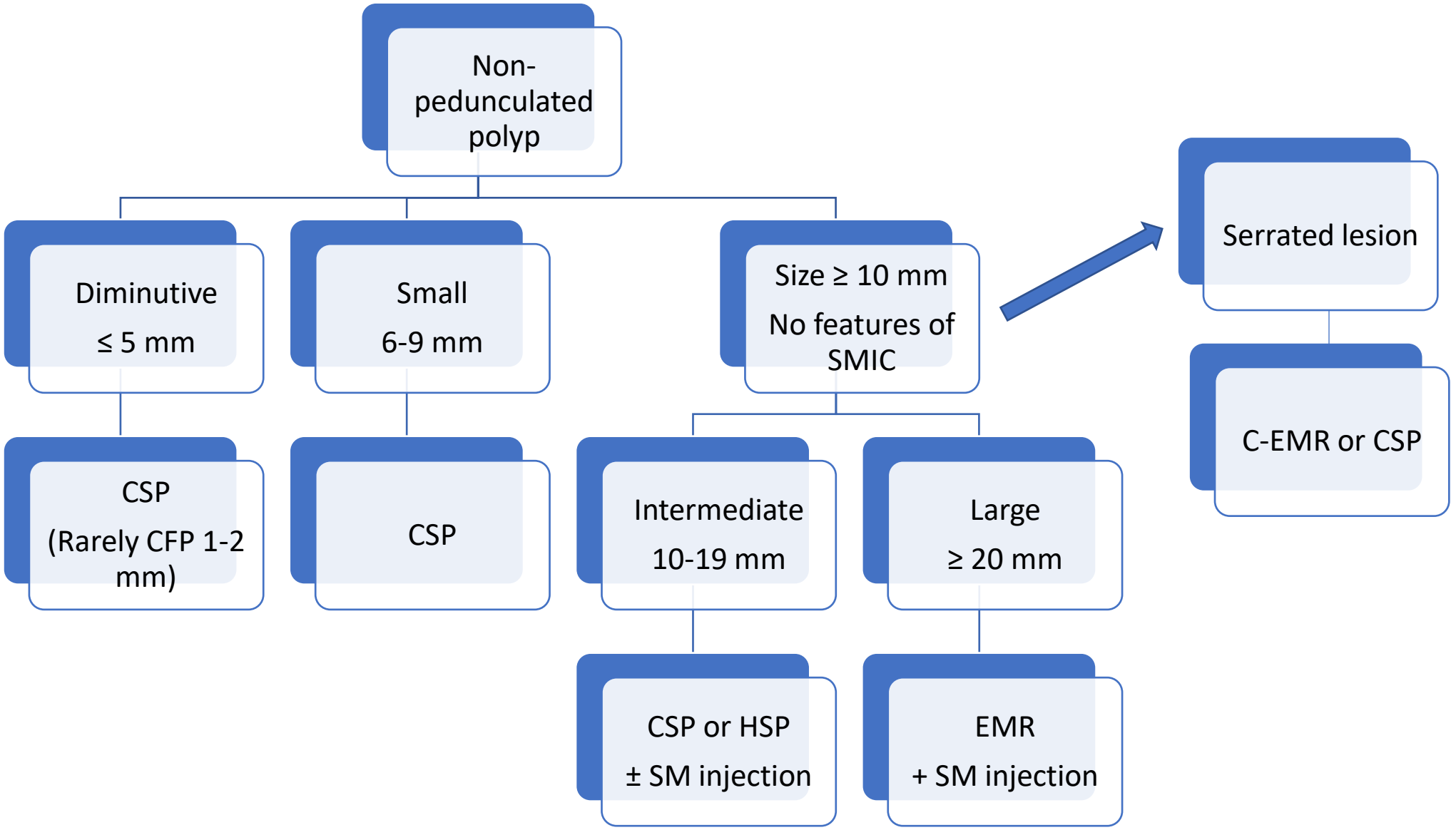


Kaltenbach et al. Gastroenterology 2020;158:1095–1129.

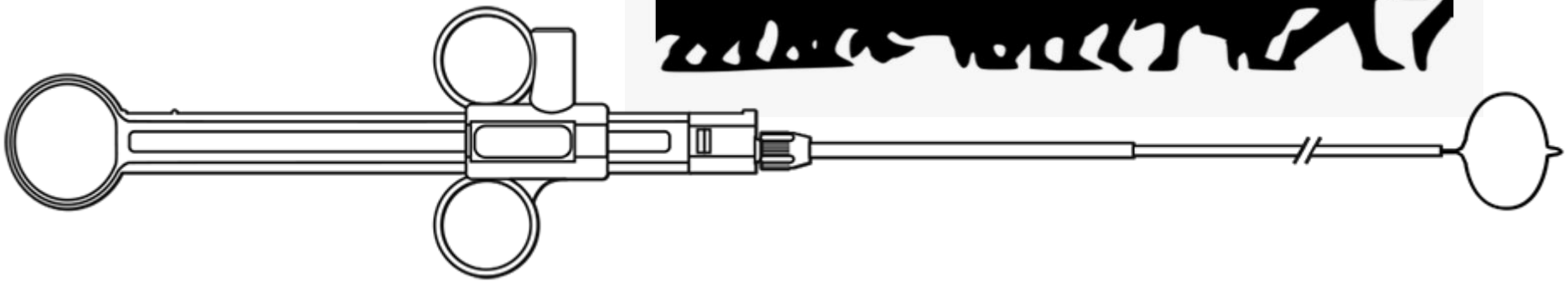
Narrow Band Imaging International Colorectal Endoscopic (NICE) classification

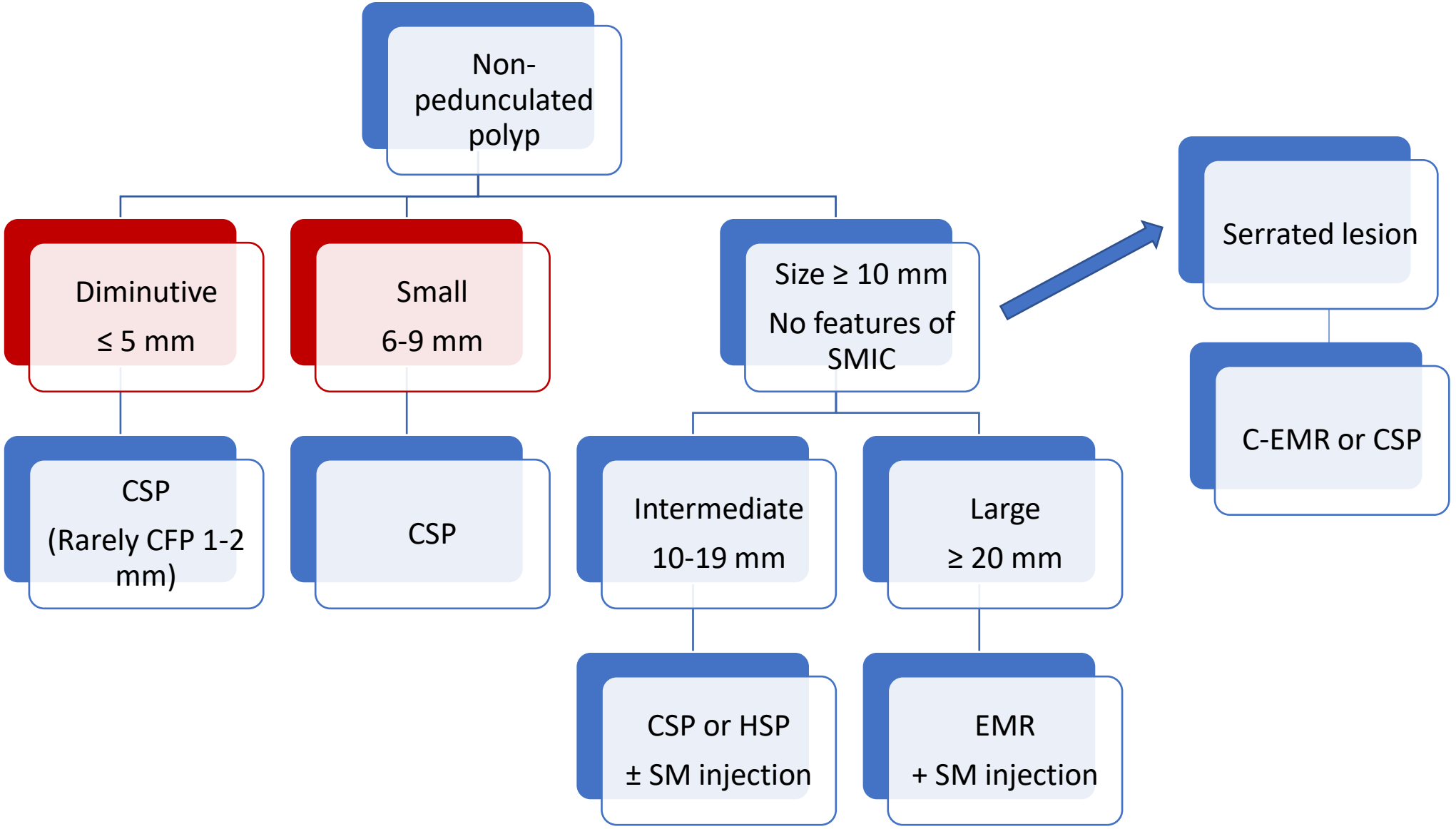
	Type 1	Type 2	Type 3
Color	Same or lighter than background	Browner relative to background (verify color arises from vessels)	Brown to dark brown relative to background; sometimes patchy whiter areas
Vessels	None, or isolated lacy vessels may be present coursing across the lesion	Brown vessels surrounding white structures**	Has area(s) of disrupted or missing vessels
Surface pattern	Dark or white spots of uniform size, or homogeneous absence of pattern	Oval, tubular, or branched white structures** surrounded by brown vessels	Amorphous or absent surface pattern
Most likely pathology	Hyperplastic and sessile serrated lesions***	Adenoma****	Deep submucosal invasive cancer
			

Kaltenbach et al. Gastroenterology 2020;158:1095–1129.


Non-pedunculated polyp
Diminutive
≤ 5 mm
Small
6-9 mm
Size ≥ 10 mm
No features of SMIC
Serrated lesion
C-EMR or CSP
CSP
(Rarely CFP 1-2 mm)
CSP
Intermediate
10-19 mm
Large
≥ 20 mm
CSP or HSP
± SM injection
EMR
+ SM injection

The Cold Revolution

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CSP or HSP
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+ SM injection

CSP is best for polyps < 10 mm

- >80% colorectal polyps are diminutive (≤ 5 mm) or small (6-9 mm)
- Very rarely harbor advanced histology

- CSP has unassailable dominance in this size range
    - **Effective**: Low incomplete resection rate (IRR)
    - **Safe**: No electrocautery = no delayed bleeding or perforation
    - **Straightforward**: To apply, teach, and learn.

CSP versus cold forceps polypectomy (CFP)

- IRR of CFP ranges from 10% to 60%
- SRMA of 3 RCTs comparing CSP to CFP:

  Incomplete resection relative risk = 0.31 (0.14-0.67) favoring CSP

Raad et al. Gastrointest Endosc 2016; 83:508-15

- Network meta-analysis of 7 studies and 700 patients:

  CSP superior to CFP for complete eradication (ORs 2.5-4.3)

Jung et al. Surg Endosc 2018;32:1149–1159.

CSP versus hot resection techniques

- RCT of CSP vs. hot forceps polypectomy (HFP) for polyps 3-5 mm:
  - Higher *en bloc* resection for CSP (99% vs 80%)
  - Lower IRR for CSP (20% vs 53%)
  - Higher severe injury to tissue specimen for HFP (53% vs 1%)
  - No delayed bleeding or perforation

Komeda et al. World J Gastroenterol.2017; 23(2): 328-335

- CRESCENT non-inferiority RCT: CSP vs. HSP for polyps 4-9 mm:
  - IRR 1.8% for CSP, vs. 2.6% for HSP
  - Bleeding requiring hemostasis occurred only with HSP (0.5%)

Kawamura et al. Gut 2017;67:1950–1957.

CSP is safer than HSP

RCT of CSP vs. HSP for polyps 4-10 mm

- 4270 patients,
- Delayed PP bleeding (within 14 days) occurred in 0.4% vs. 1.5%
- Severe bleeding also favored CSP (0.05% vs. 0.4%)
- Mean polypectomy time (119.0 vs. 162.9 sec) shorter in CSP group
- Successful tissue retrieval, en bloc resection, and complete histologic resection did not differ.

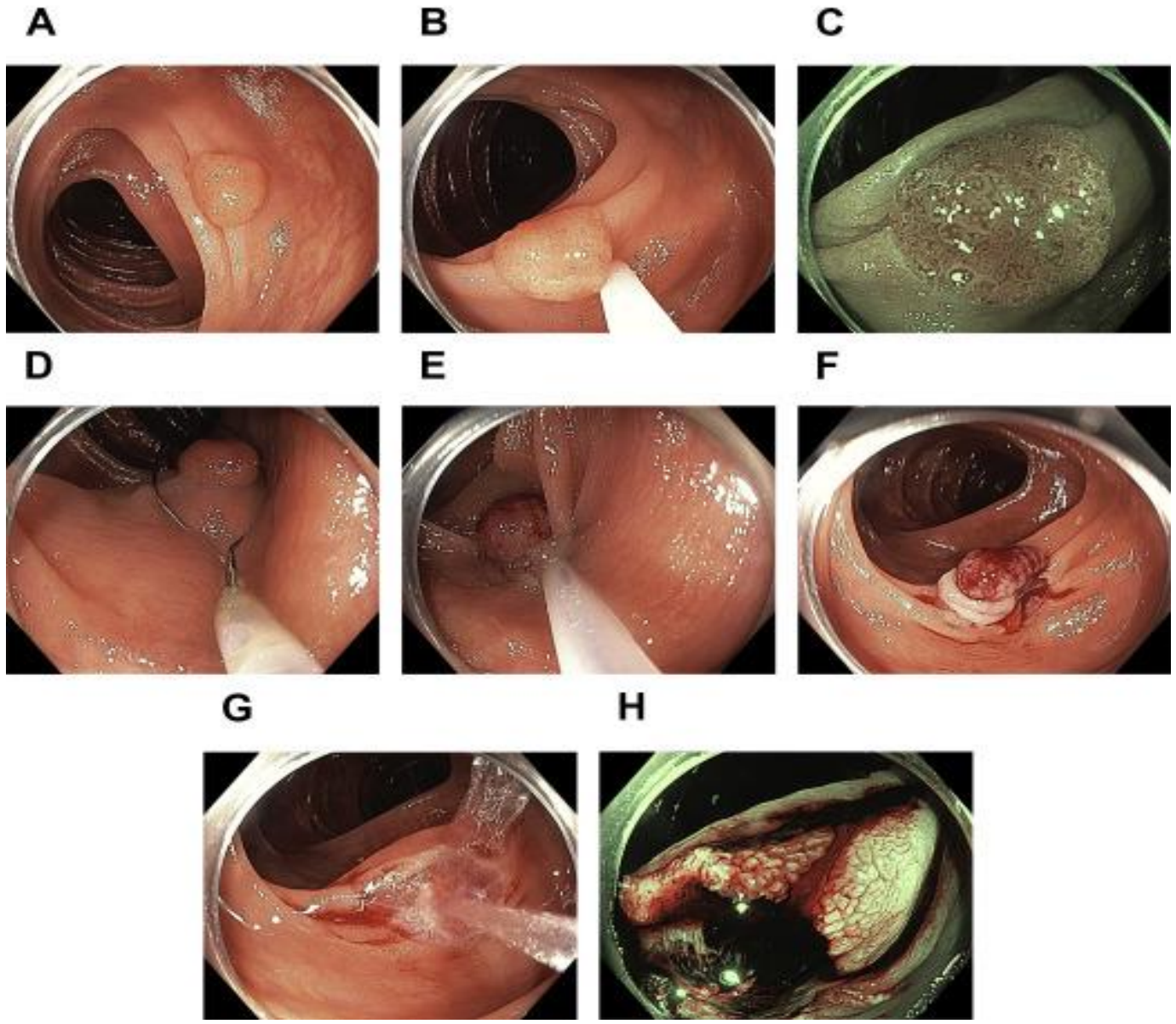
Chang et al. Annals of Internal Medicine. https://doi.org/10.7326/M22-2189

CSP versus HSP

- Comparable low IRR (< 5%)
- Similar retrieval rate (96%)
- Significantly shorter procedure time with CSP (mean 7 minutes)
- Lower incidence of post-polypectomy bleeding with CSP, and no deep mural injury
- Rare immediate PP bleeding with CSP, rarely requires intervention

Kaltenbach et al. Gastroenterology 2020;158:1095–1129

Zarandi-Nowroozi et al. Gastrointest Endoscopy Clin N Am 32 (2022) 241–257.



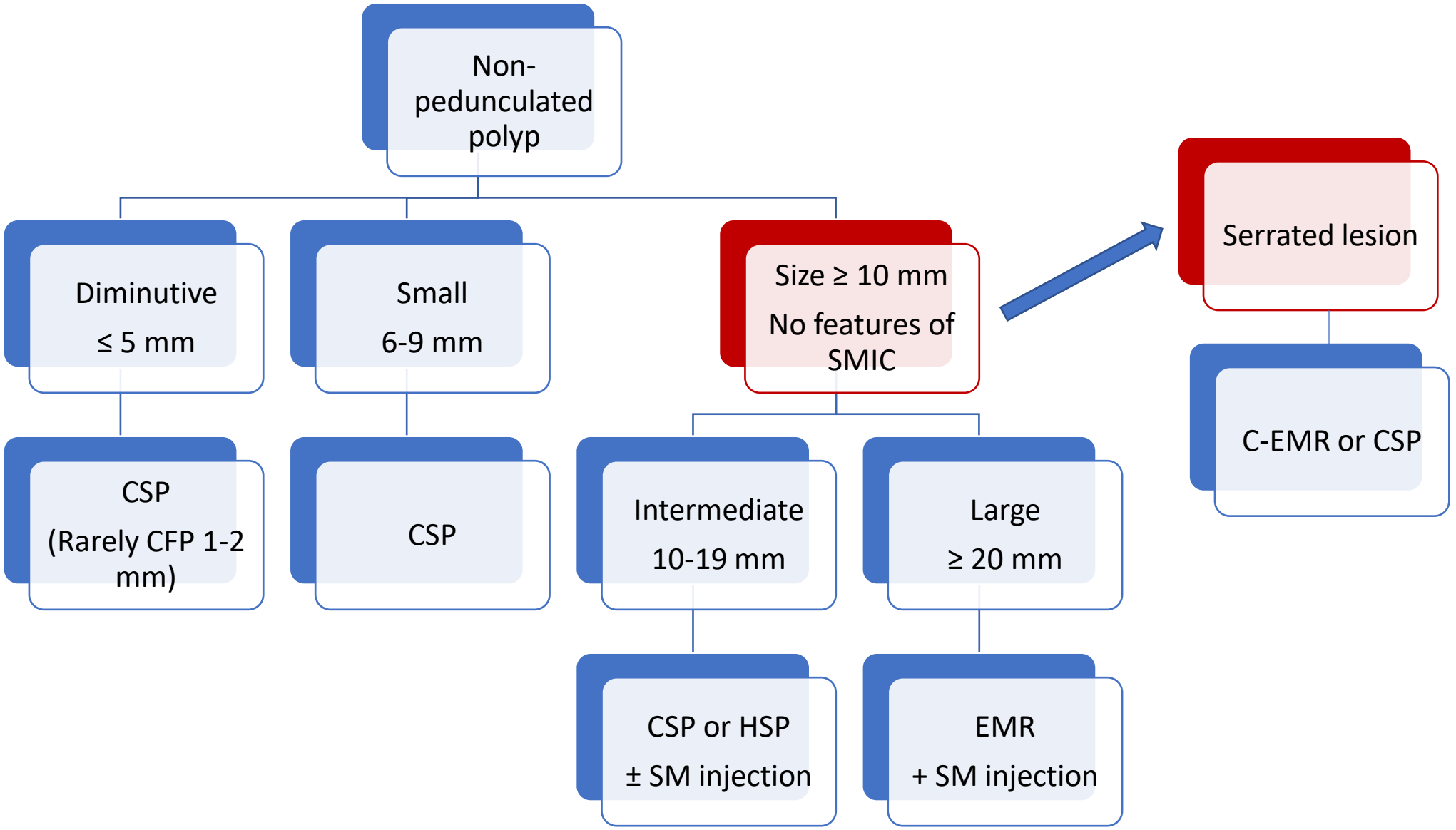
Tutticci et al. Gastrointest Endosc Clin North Am, 2019; 29 (4): 721-736

USMSTF Guidelines for diminutive (≤ 5 mm) and small (6–9 mm) polyps

- **Recommend CSP** due to high complete resection rates and safety profile.
- **Recommend against cold forceps polypectomy** due to high rates of incomplete resection. For diminutive lesions ≤ 2 mm, if CSP is technically difficult, jumbo or large-capacity forceps polypectomy may be considered.
- **Recommend against hot forceps polypectomy** due to high incomplete resection rates, inadequate histopathologic specimens, and complication rates.

  (Strong recommendation, moderate-quality evidence)

Kaltenbach et al. Gastroenterology 2020;158:1095–1129.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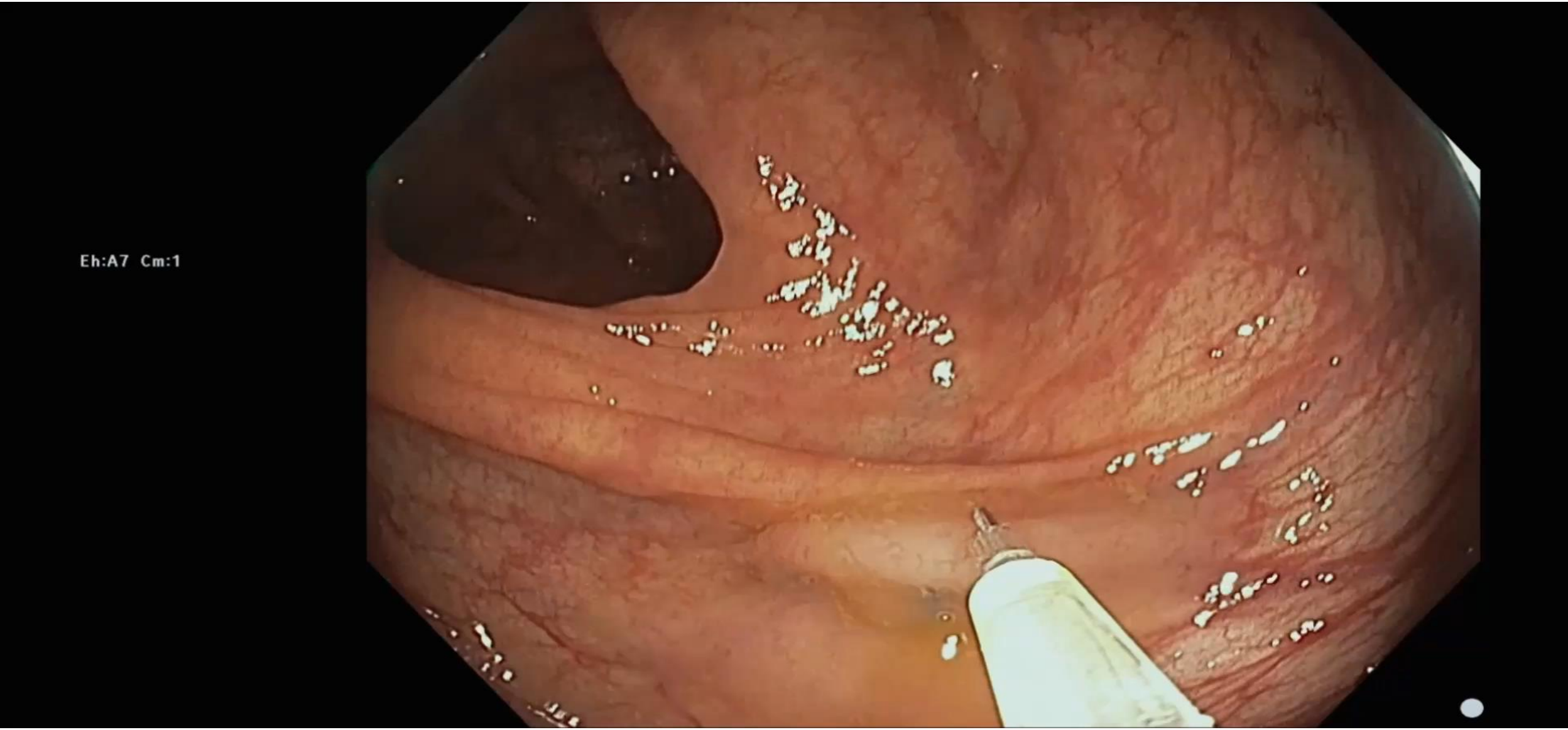
CSP
(Rarely CFP 1-2 mm)
CSP
Intermediate
10-19 mm
Large
≥ 20 mm
CSP or HSP
± SM injection
EMR
+ SM injection

CSP/c-EMR for serrated polyps ≥ 10 mm

- Literature supporting cold resection for large SLs is significant, but heterogeneous
- Most studies use submucosal injection:
    - Better delineation of lesion borders = ensure a resection margin of ≥ 2 mm
    - Facilitate transection and decrease immediate bleeding
- No need for STSC or clips
- Low recurrence rates (0-10%), low immediate bleeding rates (0-3%), and no perforations

Piraka et al. Endosc Int Open 2017;5:E184–E189
Tutticci et al. Gastrointest Endosc 2018; 87:837–842
Tate DJ et al. Endoscopy 2018;50:248–252.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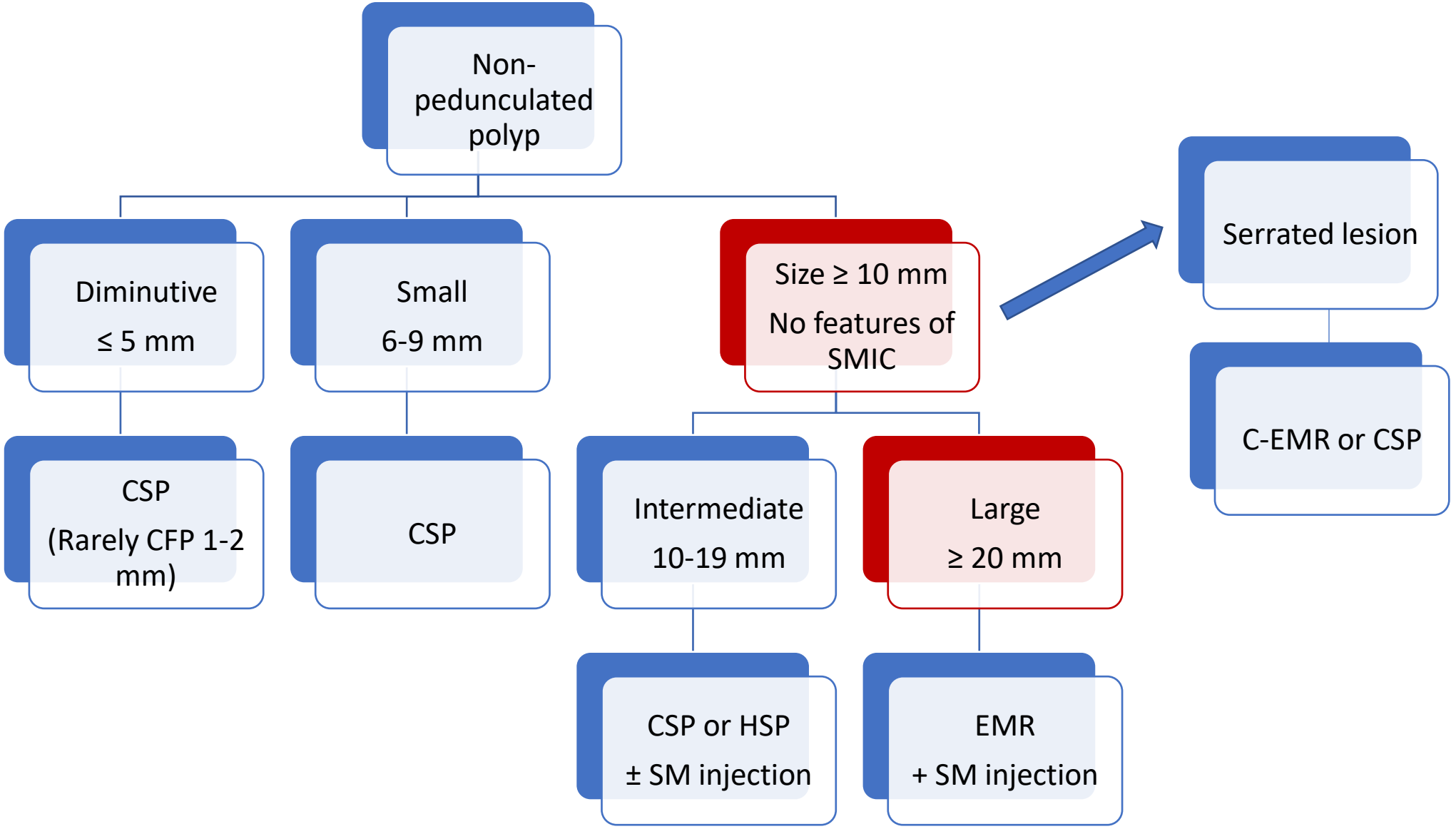
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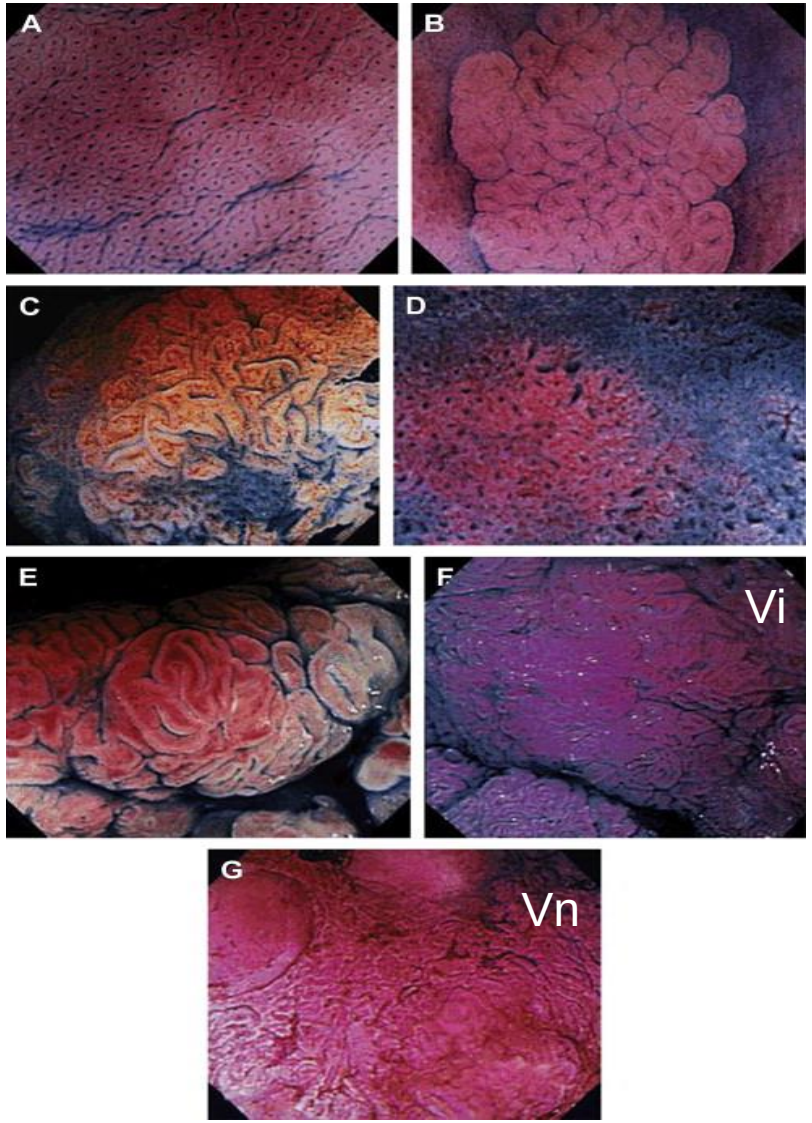
CSP
(Rarely CFP 1-2 mm)
CSP
Intermediate
10-19 mm
Large
≥ 20 mm
CSP or HSP
± SM injection
EMR
+ SM injection

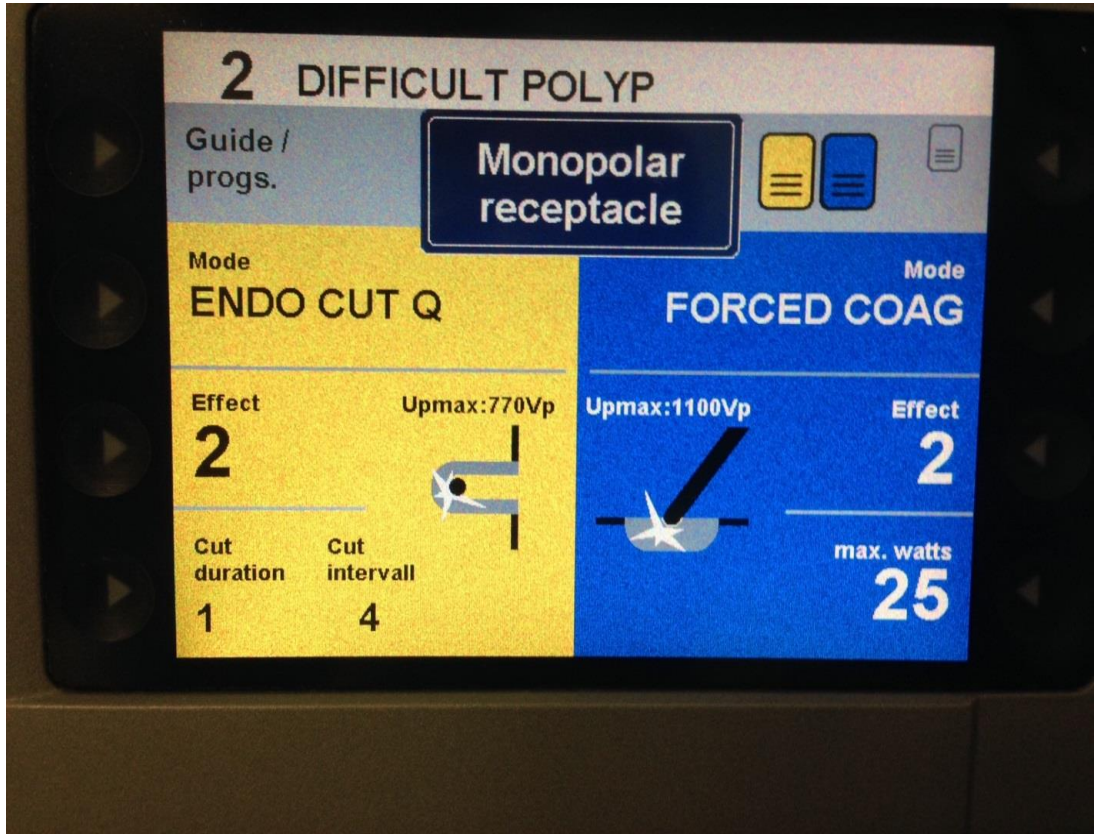
Always Assess for SMIC

- NICE 3
- Paris 0-IIc or 0-III (depressed or ulcerated)
- Kudo pit pattern types Vi (irregular) or Vn (non-structural)
- Non-granular surface



Fundamentals of EMR for non-pedunculated polyps ≥ 20 mm

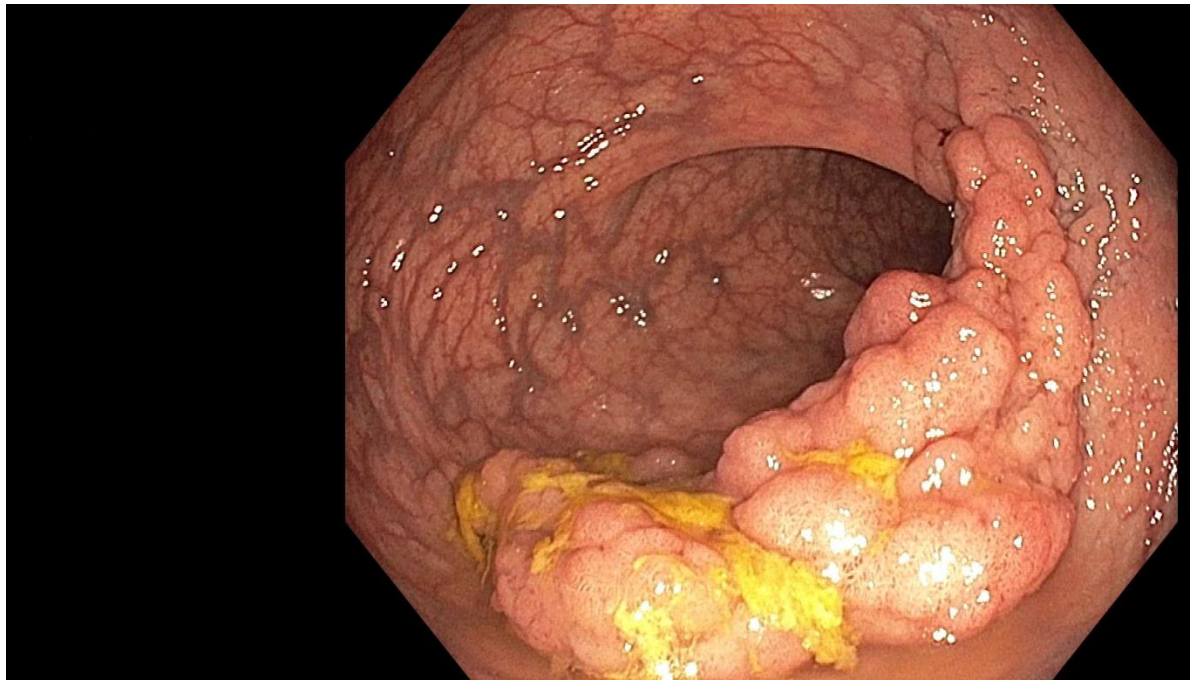
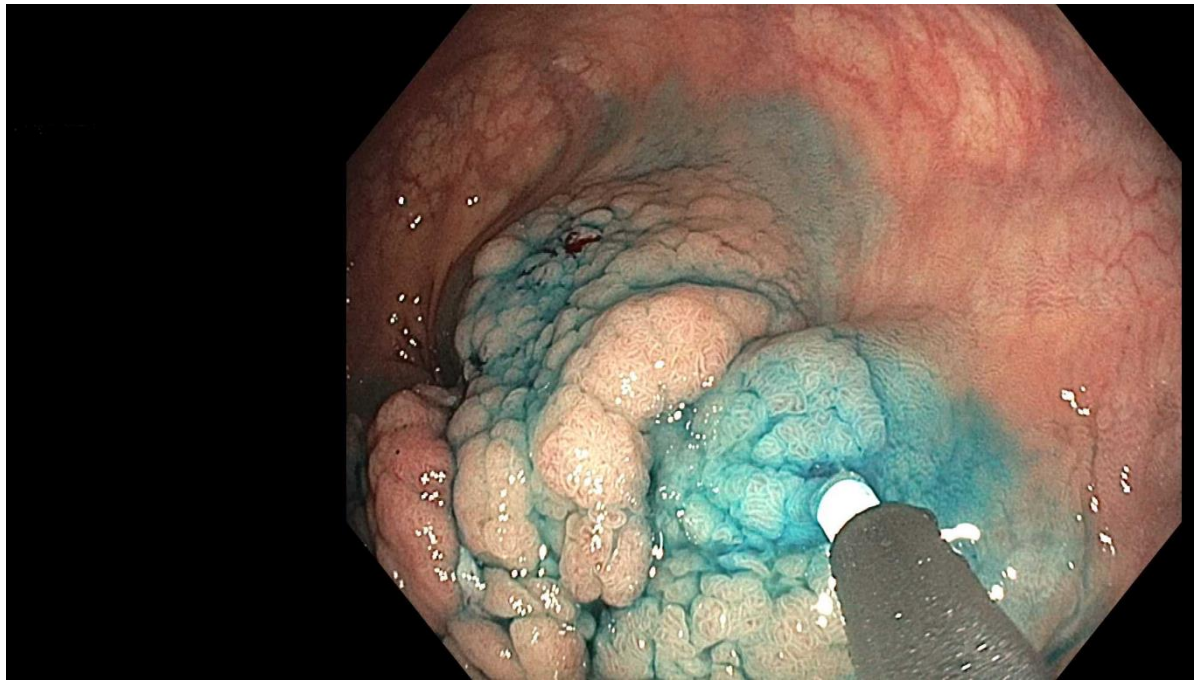
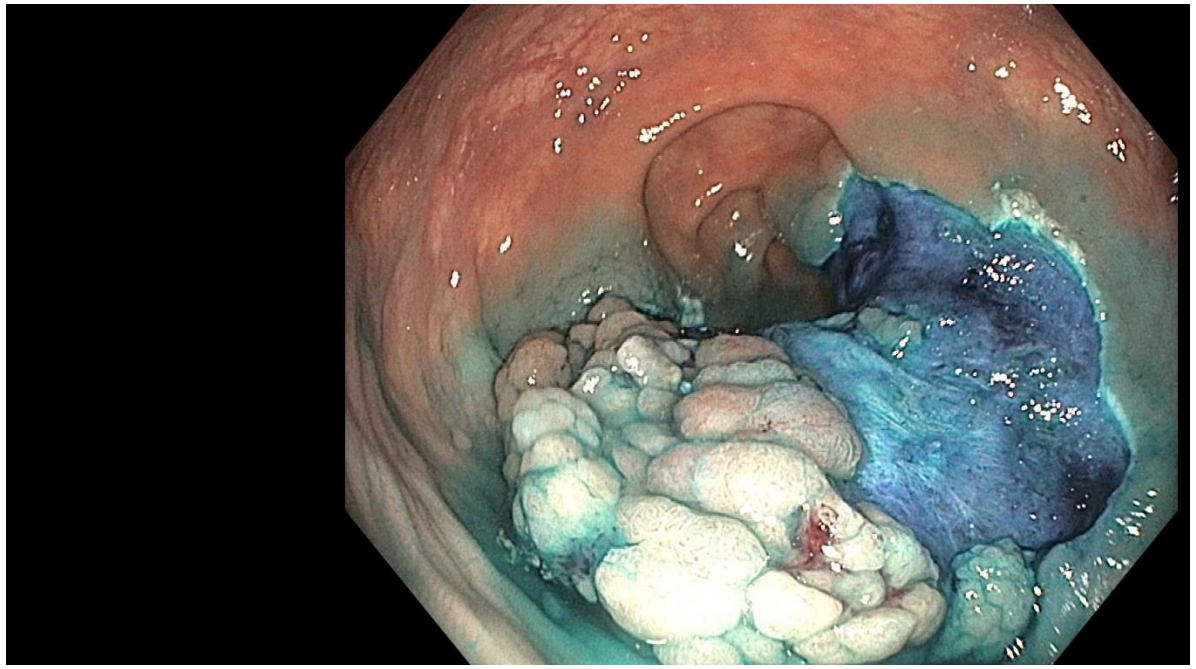
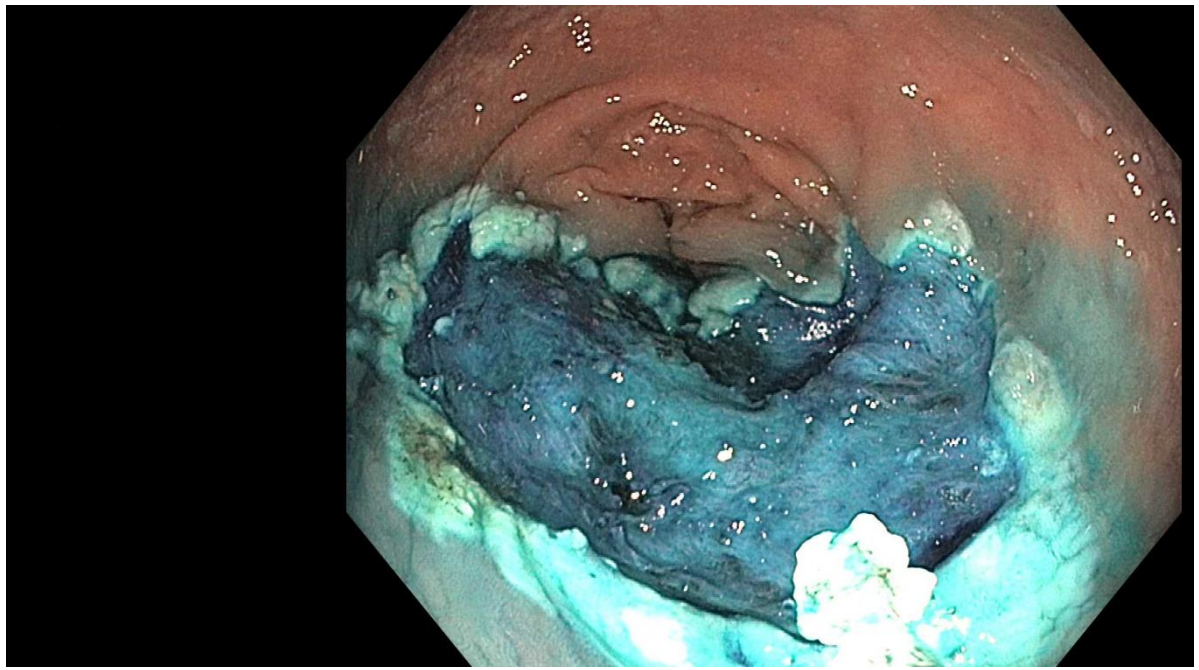
- Do not start unless you know you can finish!
- Expertise of endoscopist and endoscopy team are critical factors
- Use **snare resection** for all visible polyp tissue
- Use submucosal injection with dye for lifting
- Treat post-EMR margin with snare tip soft coagulation (STSC)
- Defect closure in the appropriate setting.


2 DIFFICULT POLYP
Guide / progs.
Monopolar receptacle
Mode
ENDO CUT Q
Effect
2
Upmax:770Vp
Cut duration
1
Cut intervall
4
Mode
FORCED COAG
Upmax:1100Vp
Effect
2
max. watts
25

Submucosal injection fluids for EMR

- Proprietary solutions (FDA-approved)
  - Eleview, Everlift
  - Note: ORISE gel recalled by manufacturer due to foreign body reactions presenting as mass formations
  - Practical but more expensive

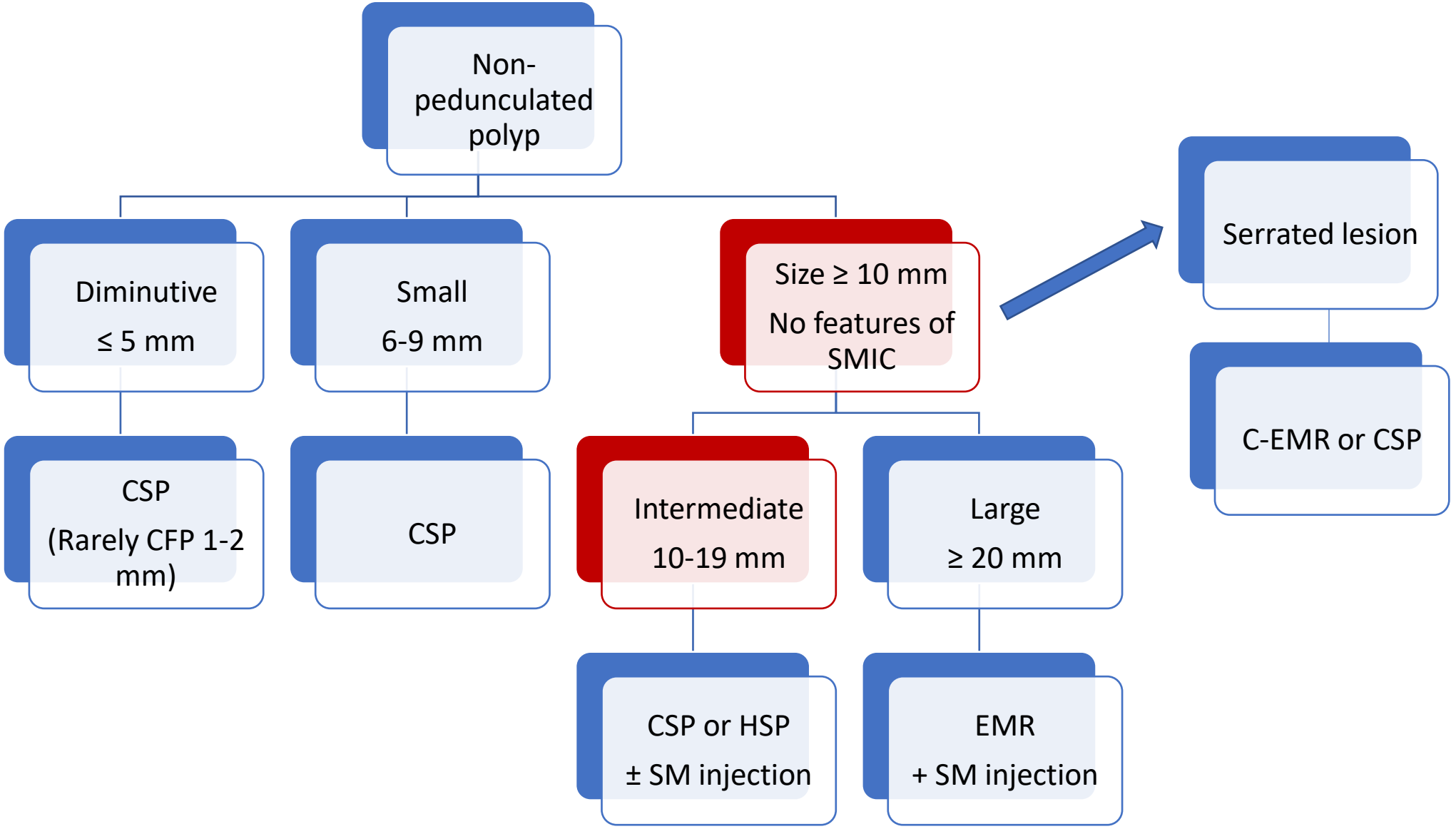
- DIY solutions
  - Add indigocarmine or methylene blue
  - Normal saline, hydroxyethyl starch, succinylated gelatin, sodium hyaluronate, glycerol
  - Much more economical.

EMR Outcomes

- Less morbidity and mortality, and more cost-effective than surgical resection
- Low risk of severe adverse events (1%)
- Low rate of local recurrence (< 15%)
- Local recurrences usually small and straightforward to resect
- **USMSTF guidelines recommend EMR as the preferred treatment method of ≥20 mm non-pedunculated colorectal lesions**

Kaltenbach et al. Gastroenterology 2020;158:1095–1129.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Approach to intermediate-size polyps (10-19 mm)

- Evidence more sparse than for < 10 mm and ≥ 20 mm, leading to inconsistent practices and guidelines

- Basic principles:

Approach to intermediate-size polyps (10-19 mm)

- Non-inferiority RCT including 286 polyps 6-15 mm:
  - Randomized to CSP, c-EMR, HSP, or h-EMR
  - Overall IRR 2.4%
  - 7 incompletely removed polyps were all 10-15 mm in size, and 6 of 7 were resected using HSP or h-EMR.
  - No incomplete resections in CSP group, only one in c-EMR group.
  - No serious adverse events in CSP group
  - Resection time was significantly shorter for CSP

Rex et al. Gastrointest Endosc 2022;96:330-338.

Pushing the envelope further for polyps 10-19 mm

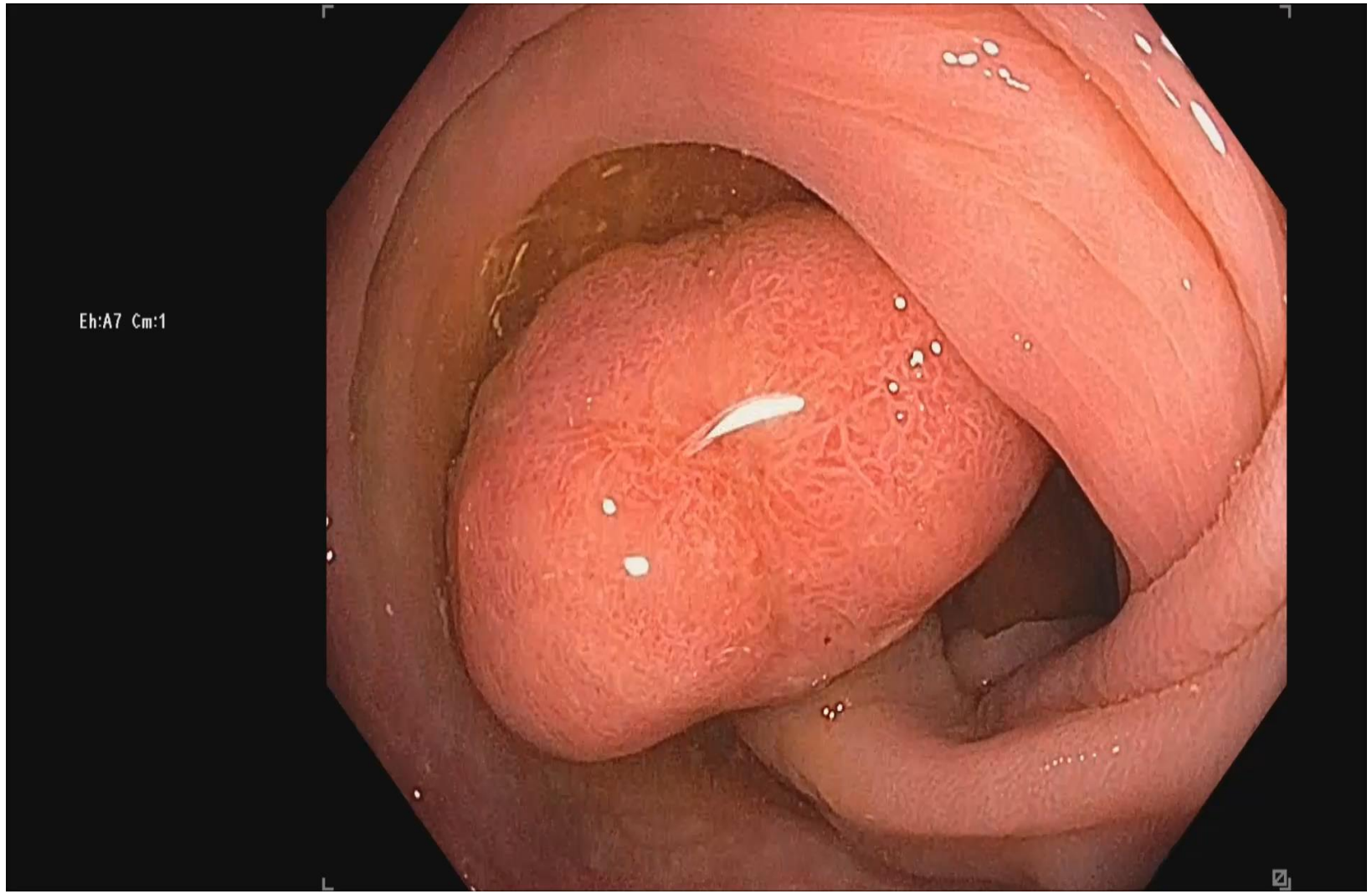
- Observational study including 350 polyps 10-19 mm:
  - All treated with CSP or c-EMR (87% with SM injection)
  - 68.5% were adenomas, 30% SSL
  - IRR based on margin or central biopsies being positive was 1.7%
  - Polyp recurrence rate was 1.7%(n=4) at first surveillance colonoscopy
  - Adverse events occurred in 3.4%(n=10) of patients, including 4 bleeds
  - 2 patients had post-polypectomy-syndrome-like presentations (unusual)
  - There were no perforations.

Mangira et al. Endoscopy 2023 Feb 7. (https://doi.org/10.1055/a-2029-9539)

Pedunculated polyps

- Pedunculated polyps contain a feeding blood vessel within the lesion stalk, and HSP is recommended to decrease the risk of immediate bleeding.
- CSP may be reasonable for small (<10 mm) pedunculated polyps with a thin stalk, but this is not advisable (and often not feasible) for larger lesions.
- Polyp size ≥10mm and stalk diameter ≥5 mm are known risk factors for bleeding, and pedunculated polyps with these features should be resected using HSP.
- Prophylactic measures, such as detachable nylon loops or standard clips, are recommended to decrease the rate of immediate and delayed bleeding, particularly for pedunculated polyps with heads ≥20 mm and/or stalks ≥ 5 mm.

Kaltenbach et al. Gastroenterology 2020;158:1095–1129.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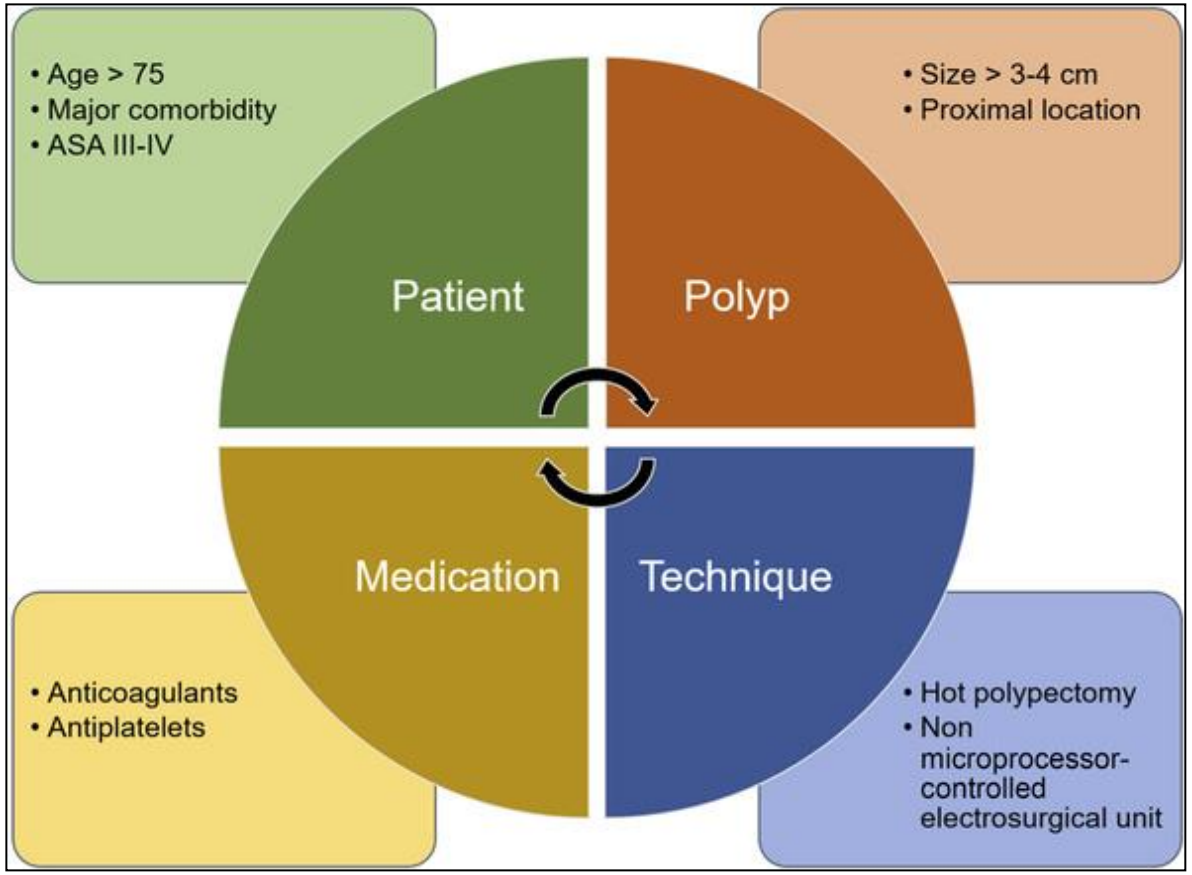
To Clip or Not to Clip?



Albéniz et al. American Journal of Gastroenterology. 2022; 117(7):1080-1088.

Clipping: Size and Location matter

- Meta-Analysis of 9 RCTs, 72,000 polyps

- Clipping did **not** significantly reduce the overall risk of PPB:

  2.2% with clipping vs 3.3% with no clipping; RR 0.69 (95% CI 0.45–1.08)

- Clipping reduced risk of PPB for polyps ≥ 20 mm (RR 0.51; 0.33–0.78) or proximal location (RR, 0.53; 0.35–0.81)
- **Clipping reduced PPB for large proximal polyps** (RR, 0.37; 0.22–0.61) but not small proximal lesions (RR, 0.88; 0.48–1.62)
- Clipping did not benefit distal polyps, regardless of size

Spadaccini, Albéniz et al. Gastroenterology 2020;159:148–158.

Clipping: Size and Location matter

- Individual Patient Data Meta-Analysis, 5380 patients, nearly 9000 polyps

- Prophylactic clipping reduced delayed bleeding in proximal polyps ≥20 mm
  OR 0.62 (95% CI, 0.44–0.88; NNT = 32)
  ++ especially with antithrombotics OR 0.59 (95% CI, 0.35–0.99; NNT = 23)

- No benefit with distal polyps ≥20 mm (OR 1.41; 95% CI, 0.79–2.52), regardless of antithrombotics

- No benefit with polyps < 20 mm (OR 1.05; 95% CI, 0.76 – 1.44)

Turan et al. Clin Gastroenterol Hepatol 2022; 20 (2): 362-371.

Clipping: Histology also matters

- Post-hoc analysis of RCT of clipping after EMR of ≥ 20mm polyps:
- Low bleeding rates for serrated polyps (2.8% vs. 5.8% for adenomas)
- Risk for PPB dependent on polyp histology:

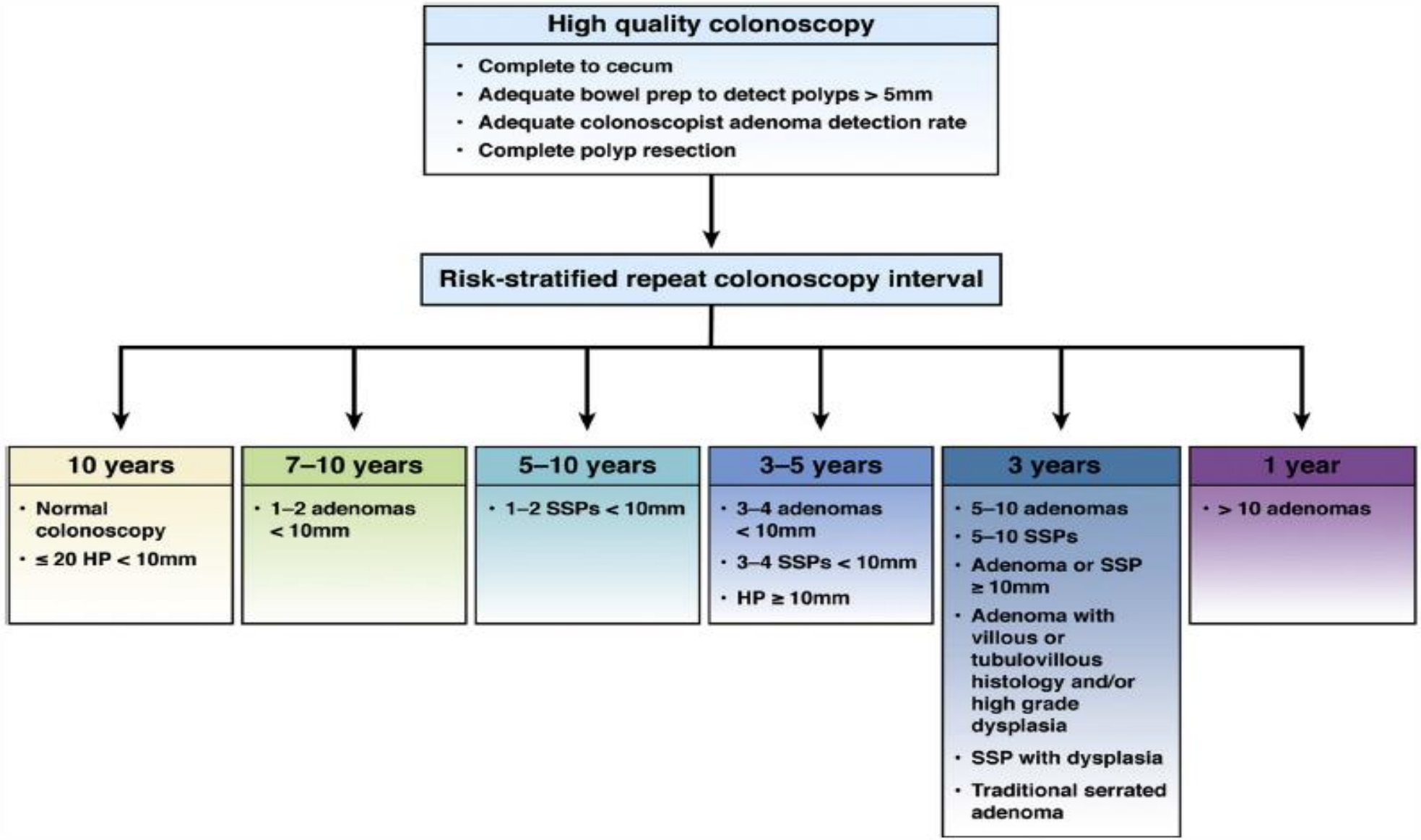
	Clip	No Clip	P value
Adenoma	3.9%	7.6%	0.03
Serrated Polyp	2.3%	3.3%	NS

Crockett et al. Clin Gastroenterol Hepatol 2022;20:1757-1765

Gastroenterology 2020;158:1131–1153

Recommendations for Follow-Up After Colonoscopy and Polypectomy: A Consensus Update by the US Multi-Society Task Force on Colorectal Cancer

Samir Gupta,[1,2,3] David Lieberman,[4] Joseph C. Anderson,[5,6,7] Carol A. Burke,[8] Jason A. Dominitz,[9,10] Tonya Kaltenbach,[11,12] Douglas J. Robertson,[5,6] Aasma Shaukat,[13,14] Sapna Syngal,[15,16] and Douglas K. Rex[17]


High quality colonoscopy
• Complete to cecum
• Adequate bowel prep to detect polyps > 5mm
• Adequate colonoscopist adenoma detection rate
• Complete polyp resection
Risk-stratified repeat colonoscopy interval
10 years
• Normal colonoscopy
• ≤ 20 HP < 10mm
7–10 years
• 1–2 adenomas < 10mm
5–10 years
• 1–2 SSPs < 10mm
3–5 years
• 3–4 adenomas < 10mm
• 3–4 SSPs < 10mm
• HP ≥ 10mm
3 years
• 5–10 adenomas
• 5–10 SSPs
• Adenoma or SSP ≥ 10mm
• Adenoma with villous or tubulovillous histology and/or high grade dysplasia
• SSP with dysplasia
• Traditional serrated adenoma
1 year
• > 10 adenomas

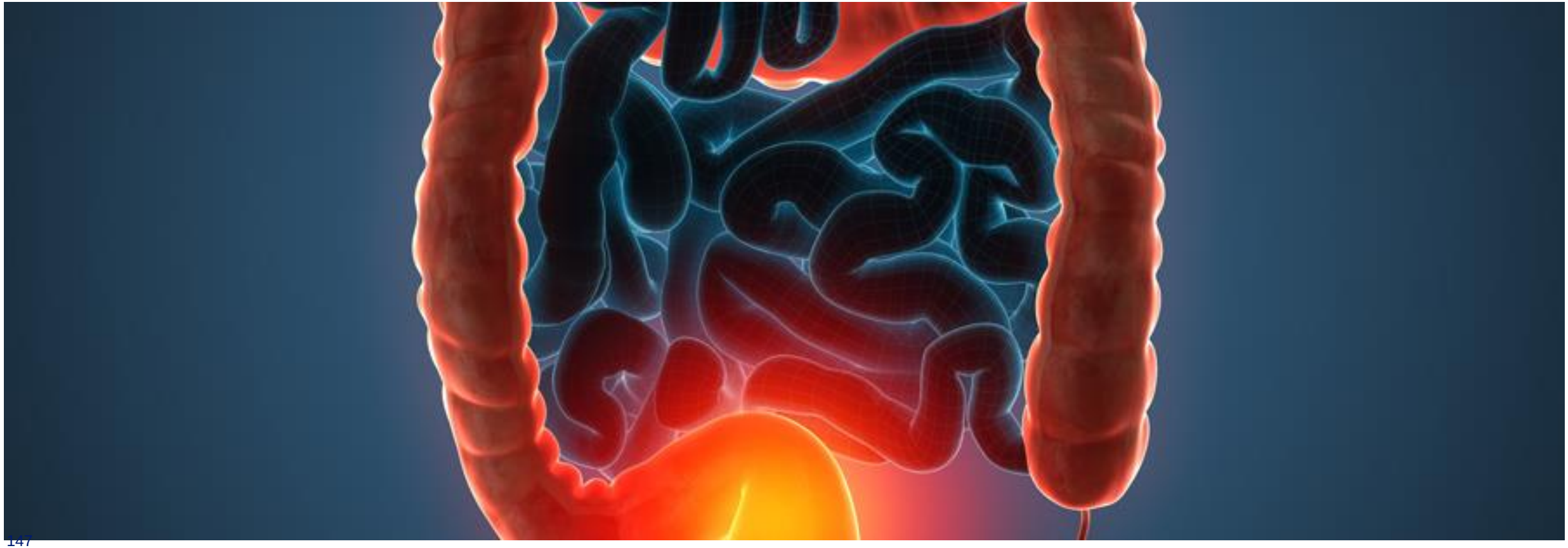
Take–Home Points

- Polypectomy has become a science!
- **Key principle is tailoring technique to polyp and patient specifics**
- The "**Cold Revolution**" for non-pedunculated polyps:
    + Cold snare polypectomy for polyps < 10 mm
    + Cold resection for many polyps 10-15 mm
    + Cold resection for all serrated polyps regardless of size
- Hot resection for some polyps 10-19 mm and pedunculated polyps with stalk > 5 mm
- EMR for polyps ≥ 20 mm (Refer to expert endoscopist, NOT surgical resection)
- Selective clipping:
    + Non-pedunculated polyps ≥20 mm located in the proximal colon
    + Serrated lesion resection sites do not need to be clipped.

Inflammatory Bowel Disorder Overview
Dr. Monica Fischer

Breaking Down the Basics: Adult IBD (Inflammatory Bowel Disease)

MONIKA FISCHER, MD
SGNA CONFERENCE
INDIANAPOLIS, 3/24/23



Speaker Disclosures

Consulting: Abbvie, Eli Lilly, Bristol Myers Squibb, Pfizer, Seres Therapeutics, Rebiotix/Ferring

Today's Objectives

01

Define IBD and its potential causes

02

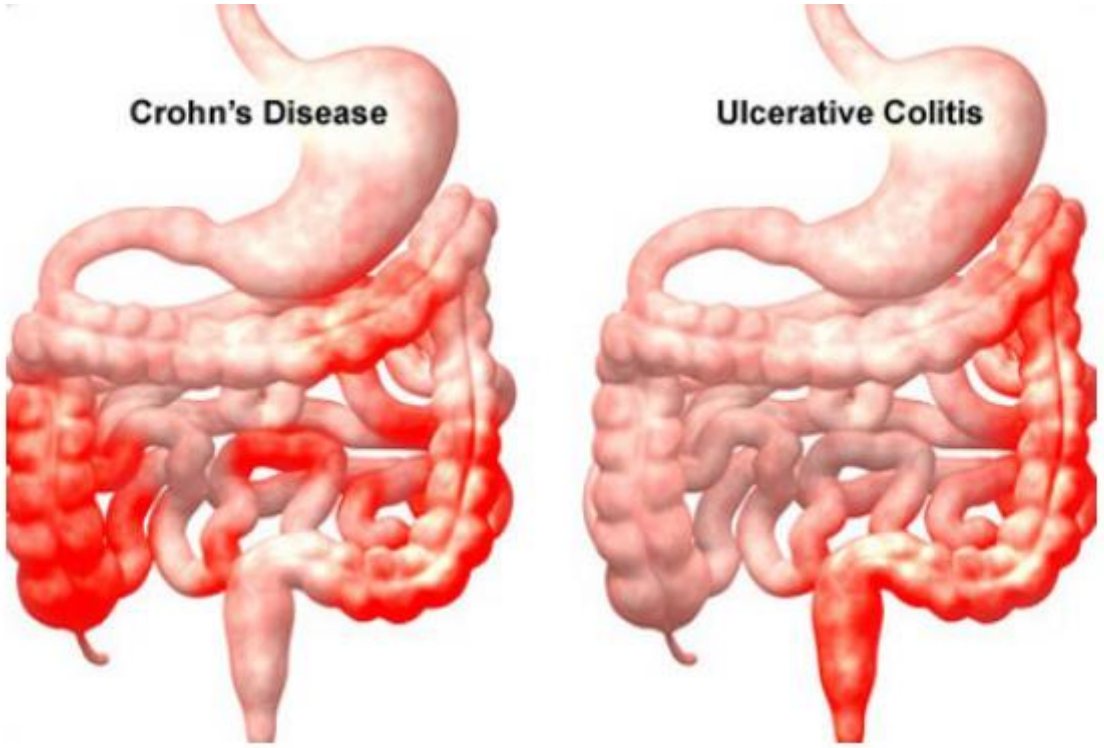
Symptoms and diagnosis

03

Discuss management and treatment

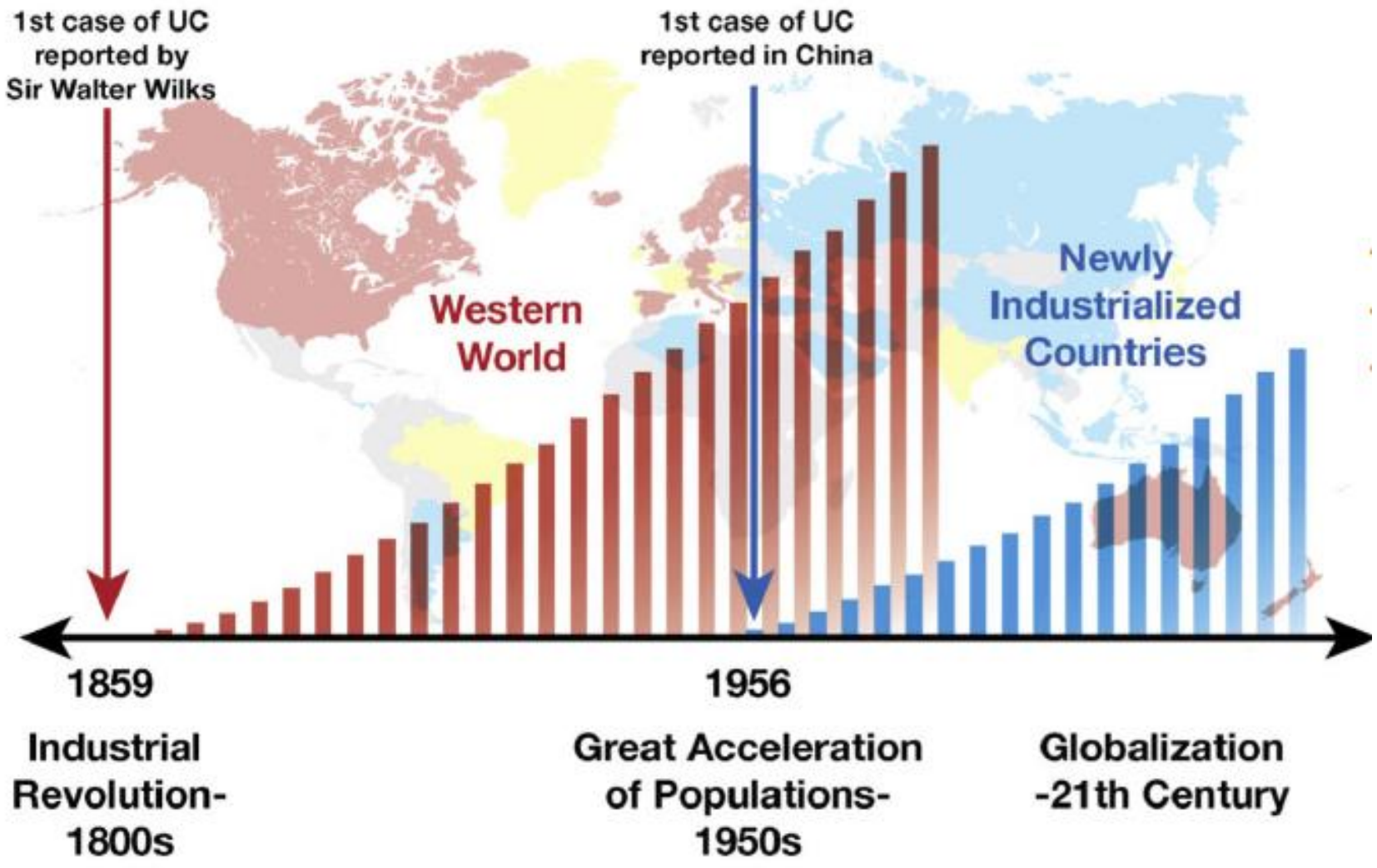
What are Inflammatory Bowel Diseases or IBD?

- Inflammatory Bowel Diseases (IBD) are immune mediated disorders that cause chronic inflammation in the gastrointestinal (GI) tract
- Crohn's disease and ulcerative colitis are two common forms of IBD
- Crohn's disease can affect the entire GI tract, while ulcerative colitis (UC) only affects the colon (large bowel)
- IBD characterized by relapsing, remitting disease course
- Symptoms, and the course of disease, can vary between persons
- IBD is currently not considered to be curable but treatable



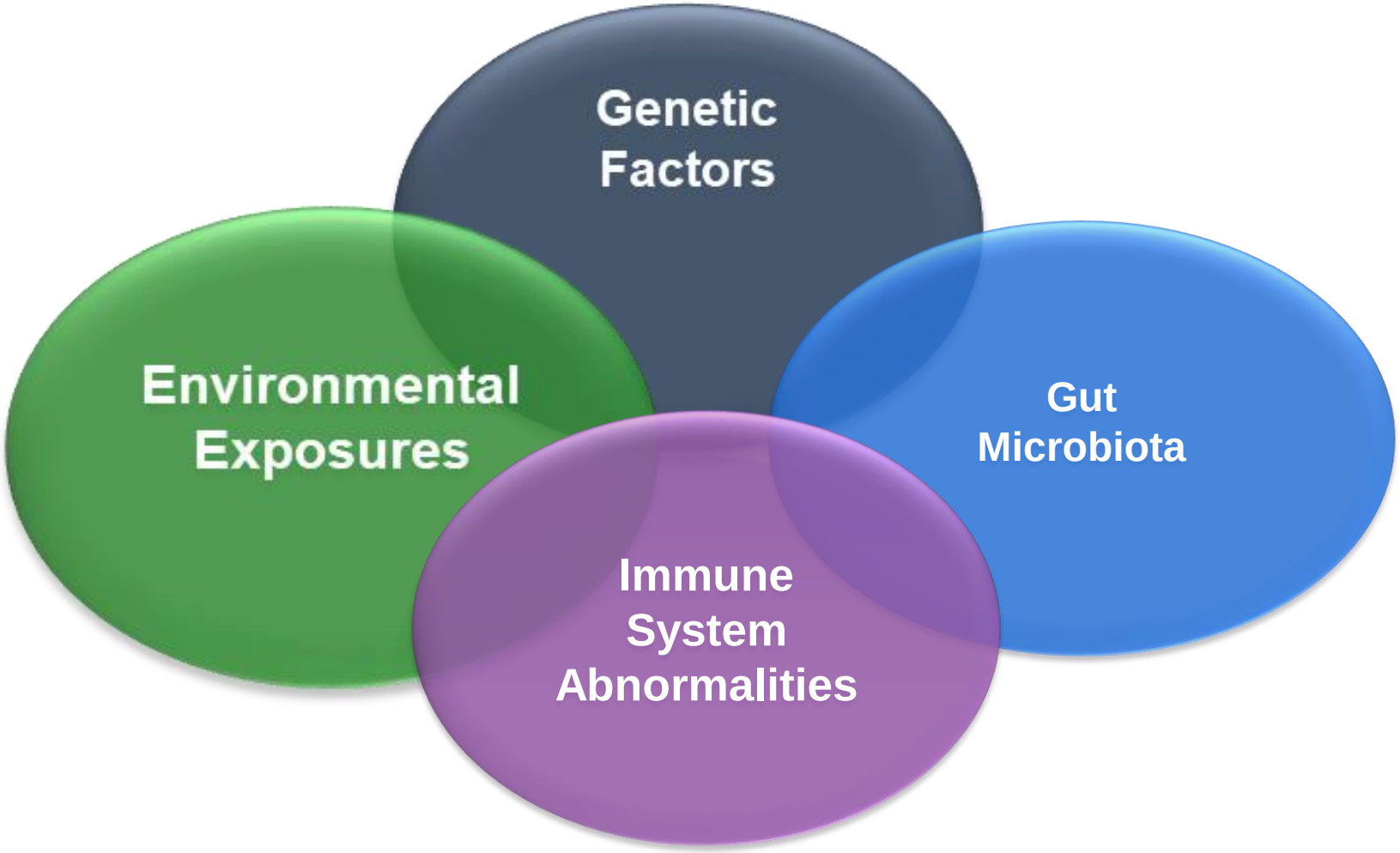
Mouth to anus **Large intestine**

Prevalence of IBD is rising

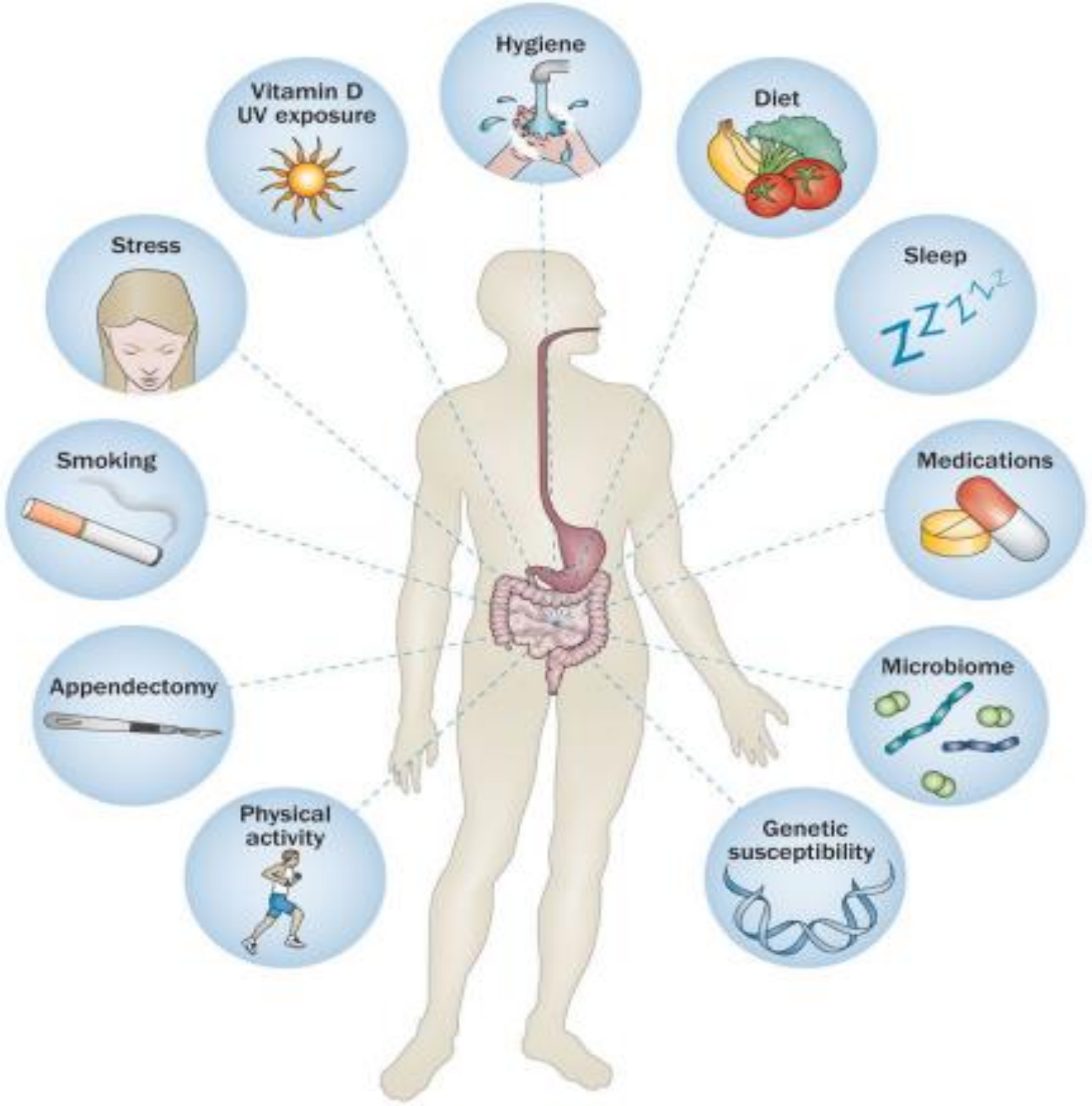


- CDC estimates over 3 million Americans with IBD
- Equally affects men and women
- Peak age of onset is 20-40 years

What are the causes of IBD?



Potential risk factors for IBD

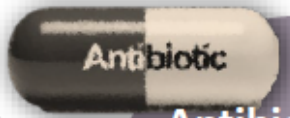


Nature Reviews | Gastroenterology & Hepatology

Risk & Protective Factors Associated with Development of IBD

Mebendazole[1]

Mebendazole exposure <5y associated with increased risk of adult-onset UC (HR 1.32 [95% CI 1.12 - 1.55])



Antibiotic Exposure[3]

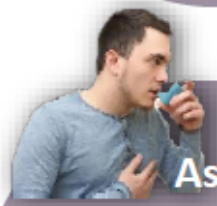
Antibiotic use, particularly in 1-2 years before diagnosis, associated with increased risk of older-onset IBD (IRR 1.87, 95%CI 1.79-1.94)

Abuse as a Child[5]

Women who suffered moderate-to-severe child abuse had an increased risk of developing CD (HR 1.84 [95% CI 1.17-2.90])

KEY

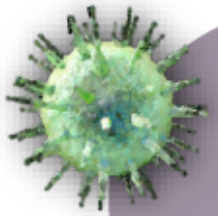
- Possible Risk Factor
- Possible Protective Factor



Asthma & Allergic Rhinitis[2]

Relative Risk of Asthma ((1.63, 95% CI, 1.51-1.75) and Allergic Rhinitis (2.11, 95% CI 1.98-2.24) increased prior to IBD diagnosis

Development of IBD

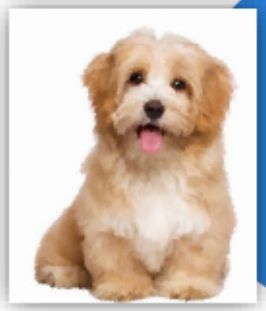


EBV[4]

EBV infection is enriched in CD patients prior to diagnosis in 3 independent cohorts

Being in a Large Family[6]

Large family size (>3) in the first year of life protective against dev. of CD (HR=0.36; 95% CI 0.18-0.72) in GEM



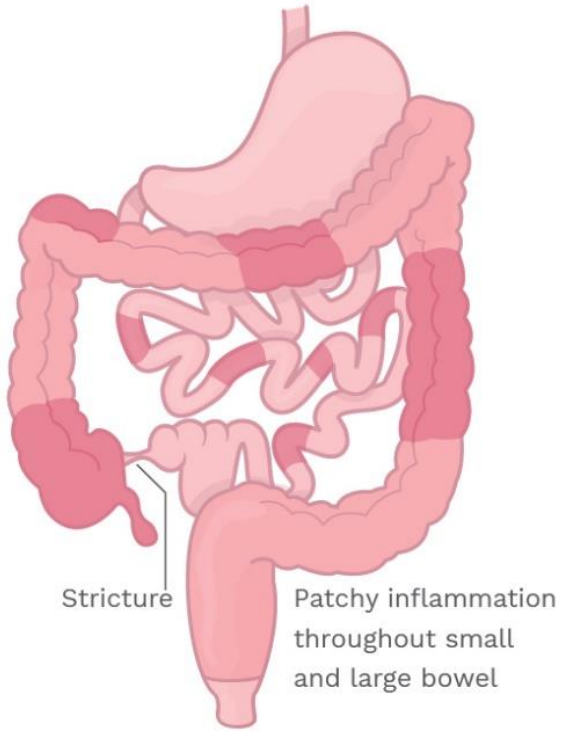
Living with a Dog[6]

Living with a dog protective against dev. of CD (Aged 2-4: Hazard Ratio (HR)=0.63; 95% CI 0.18-0.72) in GEM

1. Agrawal, M, *et al*. Presented at DDW. May 2022. Sa1599. 2. Alenezy, N, *et al*. Presented at DDW. May 2022. 404. 3. Faye, A, *et al*. Presented at DDW. May 2022. 400. 4. Nandy, A, *et al*. Presented at DDW. May 2022. 463. 5. Anyane-Yeboa, A, *et al*. Presented at DDW. May 2022. Sa1558. 6. Xue, M, *et al*. Presented at DDW. May 2022. 793.

Symptoms of IBD depends on disease location, severity and complications

Signs and Symptoms
Chronic diarrhea
Frequent bowel movements
Rectal bleeding
Abdominal pain
Anemia
Decreased Appetite
Fatigue
Malnutrition



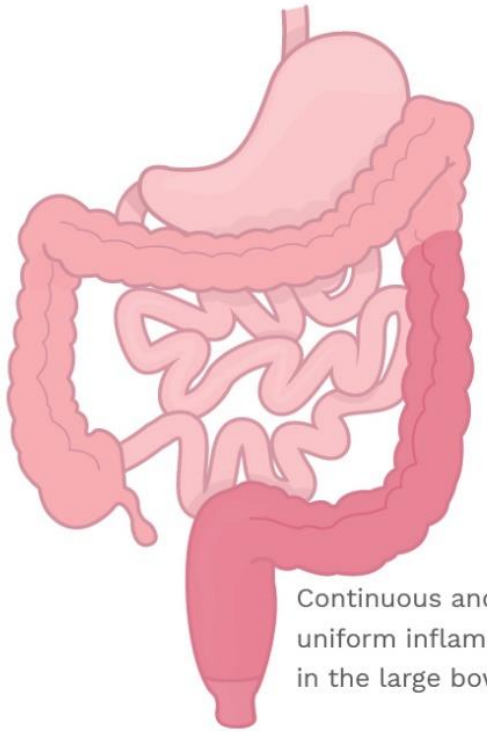
Crohn's Disease

Age of onset: 15–35 years and 55–70 years

Symptoms: Depends on location of disease. May include abdominal pain, diarrhea, weight loss and fatigue.

Bloody stool: Variable

Malnutrition: Common



Ulcerative Colitis

Age of onset: 15–35 years and 55–70 years

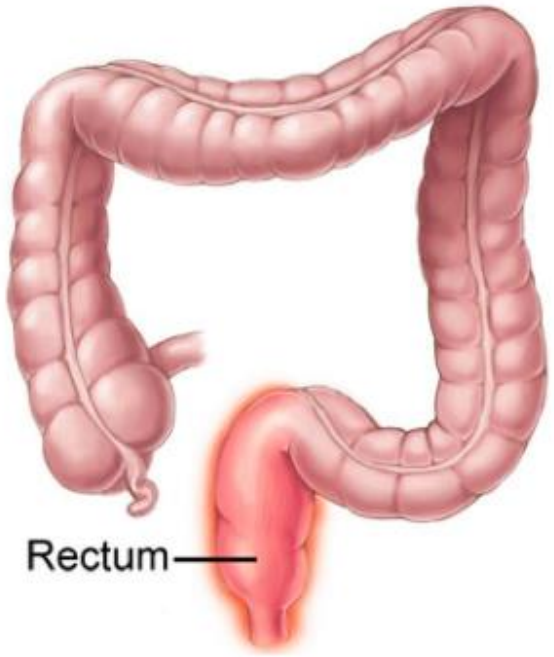
Symptoms: May include stool urgency, fatigue, increased bowel movements, mucous in stool, nocturnal bowel movements and abdominal pain.

Bloody stool: Common

Malnutrition: Less common

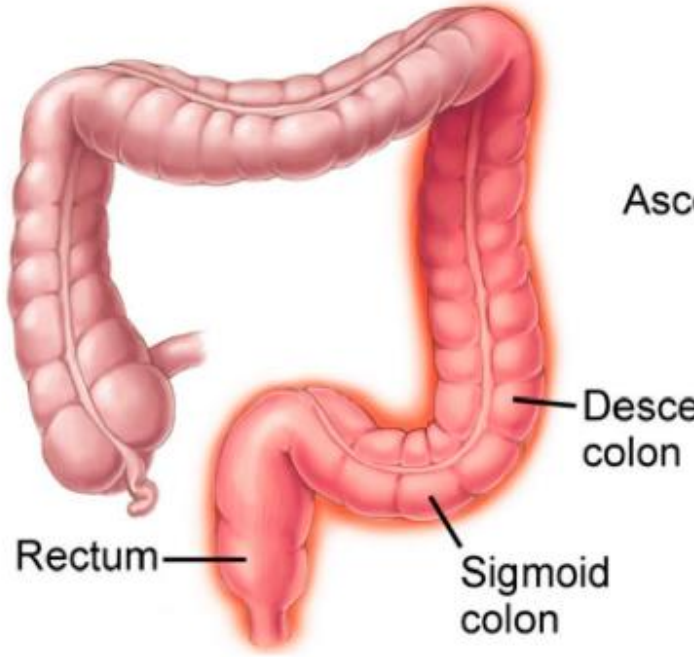
Clinical presentation: Ulcerative colitis

Proctitis



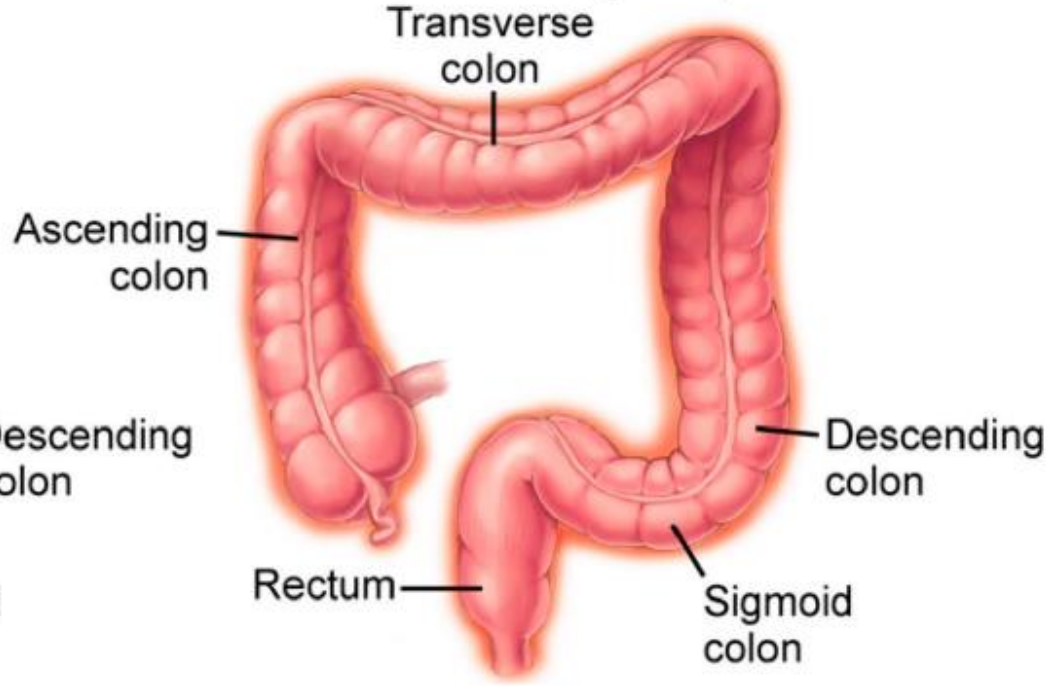
Rectal bleeding, tenesmus, urgency

Left-sided Colitis



Rectal bleeding, tenesmus, urgency + diarrhea, abdominal cramping

Extensive (Pan) Colitis

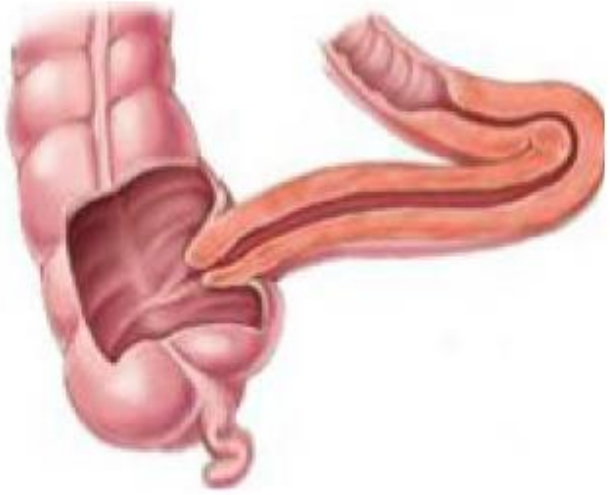


Rectal bleeding, tenesmus, urgency, diarrhea, abdominal cramping, constitutional symptoms (fever, fatigue)

Ungaro et al. *Lancet* 2017

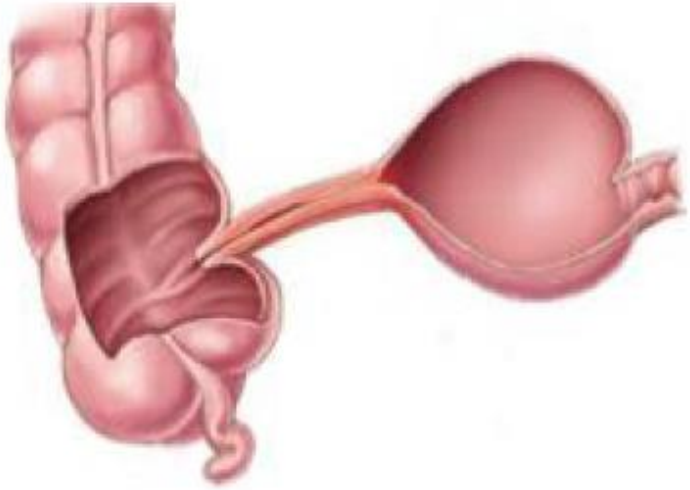
Clinical presentation: Crohn's disease

Inflammation



Diarrhea, abdominal pain, weight loss, low-grade fever, fatigue

Strictures



Postprandial pain, bloating, nausea and vomiting

Fistula and Abscess

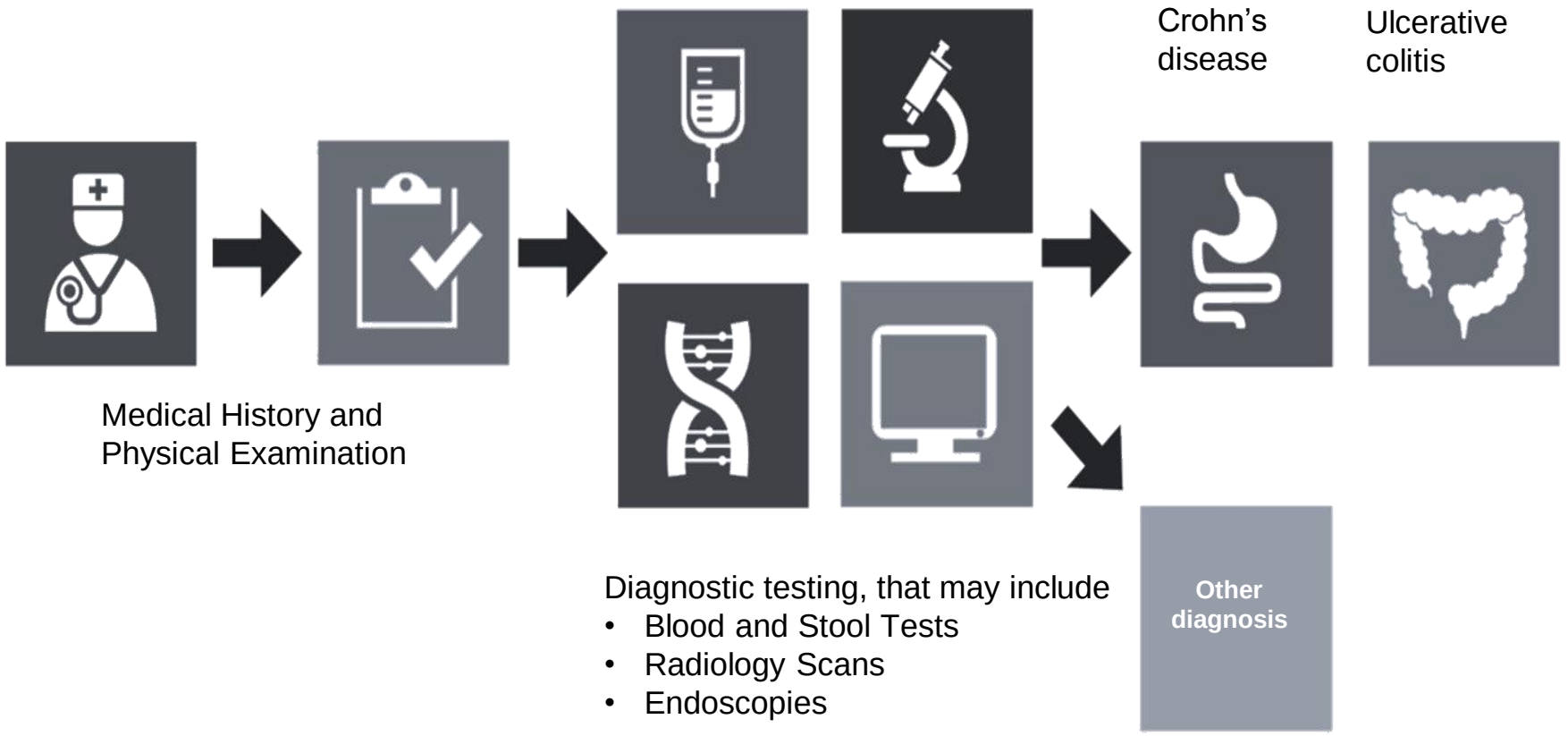
Symptoms depend on location of fistula:

- Entero-urinary: fecaluria, UTIs
- Recto-vaginal: dyspareunia
- Entero-enteric: diarrhea, pain

Ulcerative colitis versus Crohn's disease

Features	UC	CD
Presentation	Abdominal pain, chronic or nocturnal diarrhea, bloody diarrhea, tenesmus	Abdominal pain, chronic or nocturnal diarrhea, nausea, vomiting, weight loss
Location	Colon only	Entire GI tract involvement possible
Distribution pattern	Continuous, rectal origin	Discontinuous with skip lesions
Rectal bleeding	Very common	Uncommon
Perianal disease	Very uncommon	Common
Depth of inflammation	Mucosal	Transmural
Fistulas/strictures	Very uncommon	Common
Extra-intestinal manifestations	Common	Common
Smoking	Negative association	Exacerbation of disease activity

Diagnosis

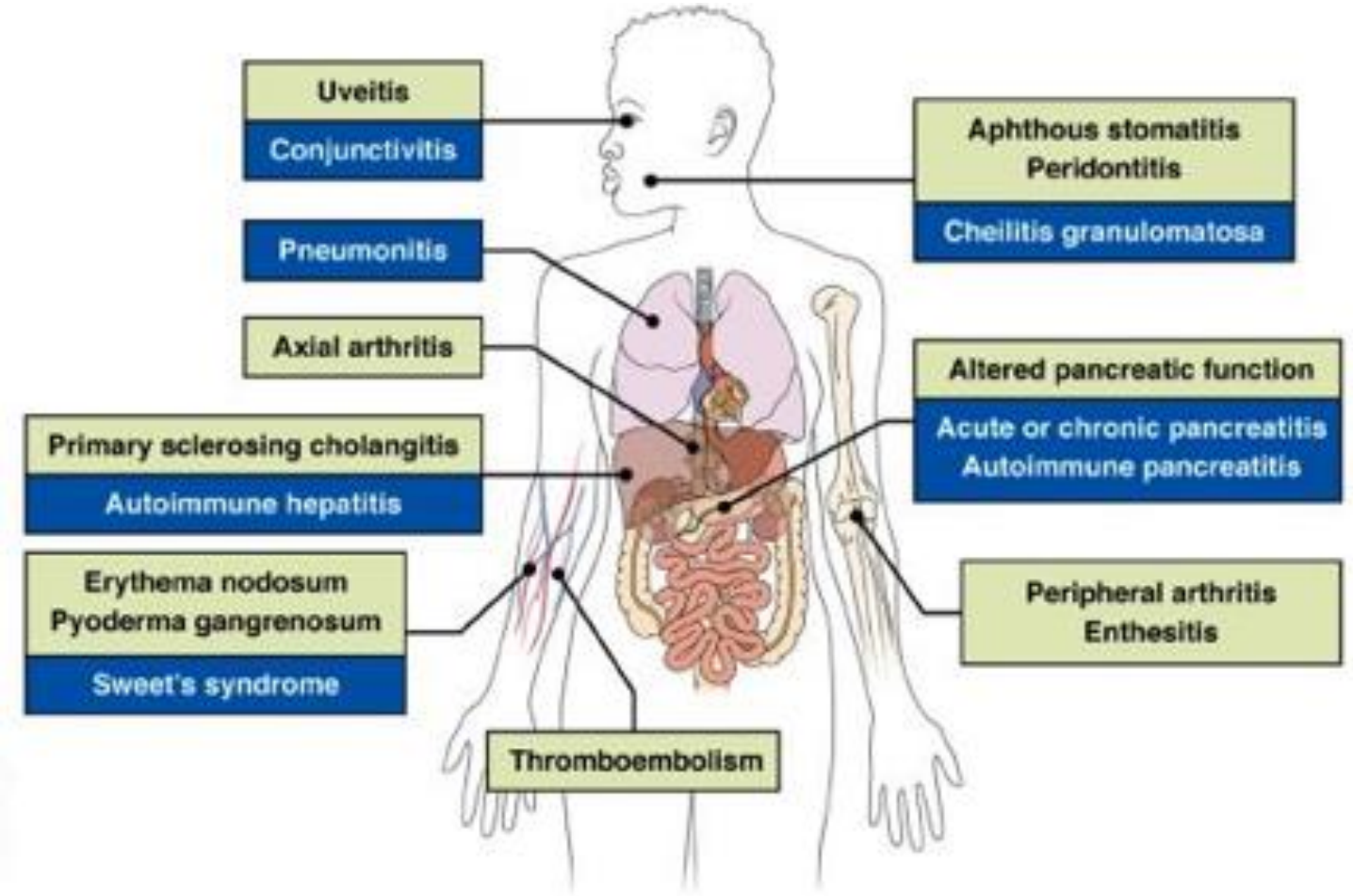

Crohn's disease
Ulcerative colitis
Medical History and Physical Examination
Diagnostic testing, that may include
• Blood and Stool Tests
• Radiology Scans
• Endoscopies
Other diagnosis

Differential diagnosis

Infectious colitis: bacterial, viral, fungal (histoplasmosis), mycobacterial
Ischemic colitis
Segmental colitis associated with diverticulitis (SCAD)
Radiation induced colitis or proctitis
Medication induced colitis (NSAIDs)
Sexually transmitted diseases: chlamydia, gonorrhoeae, HSV, syphilis
Celiac disease
Microscopic colitis
Lactose or other food intolerances
Irritable bowel syndrome

Physical exam

- Perianal exam (fissure, fistula, large (“elephant ear”) skintags
- Extraintestinal manifestations affect 25-45% of patients with IBD
  - Disease course may parallel or be independent of IBD activity in the gut
  - Most common in the skin and joints



Musculoskeletal EIMs

- Peripheral arthritis is more common
- Axial arthritis/spondyloarthropathy can be seen in up to 50% of CD --- symptomatic in 8%
- No reliable lab test
- MRE may be useful!

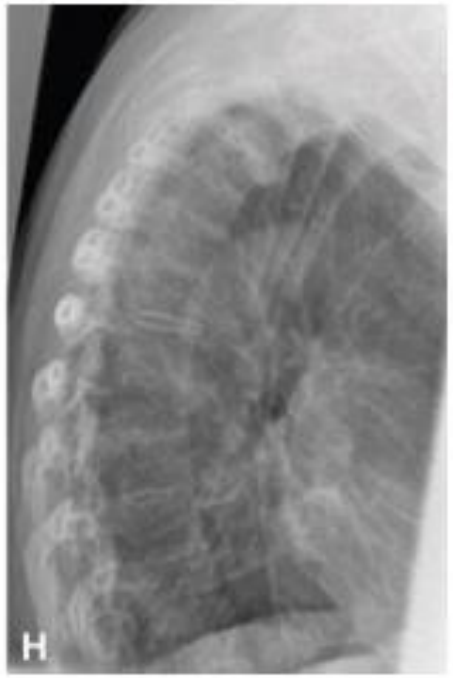


TABLE 2. Classification of Peripheral Arthropathy Associated with IBD

Type 1 (Pauciarticular)	Type 2 (Polyarticular)
Prevalence in UC, 35%	Prevalence in UC, 24%
Prevalence in CD, 29%	Prevalence in CD, 20%
Less than 5 joints	Five or more joints
Mainly large joints	Mainly small joints
Knee > ankle > wrist > elbow > MCP > hip > shoulder	MCP > knees > PIP > wrist > ankle > elbow > shoulder
Asymmetric involvement	It can be symmetric or asymmetric, may be erosive
Parallels intestinal disease activity	Clinical course independent of IBD activity
Self-limited episodes that last <10 wk	Persistent inflammation for months or even years
High frequency of other EIM (erythema nodosum and uveitis)	Associated only with uveitis
Associated with HLA-B27, B35, and DR103	Associated with HLA-B44

Vavricka et al., Inflamm Bowel Dis. 2015

Extraintestinal manifestations

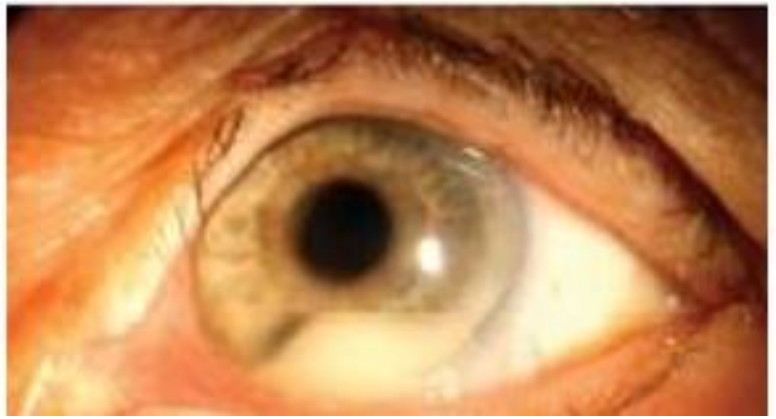
Oral and Skin lesions

- Aphtous ulcers in the mouth
- Erythema nodosum
- Pyoderma gangrenosum
- Sweet syndrome (acute febrile neutrophilic dermatosis)
- Metastatic Crohn's disease

Vavricka et al., Inflamm Bowel Dis. 2015.

Ocular EIMs

- 2%-7% of patients experience ocular EIMs
- Episcleritis most common
- Scleritis, <1% very serious as it can lead to blindness
- Uveitis, unclear association w/disease activity

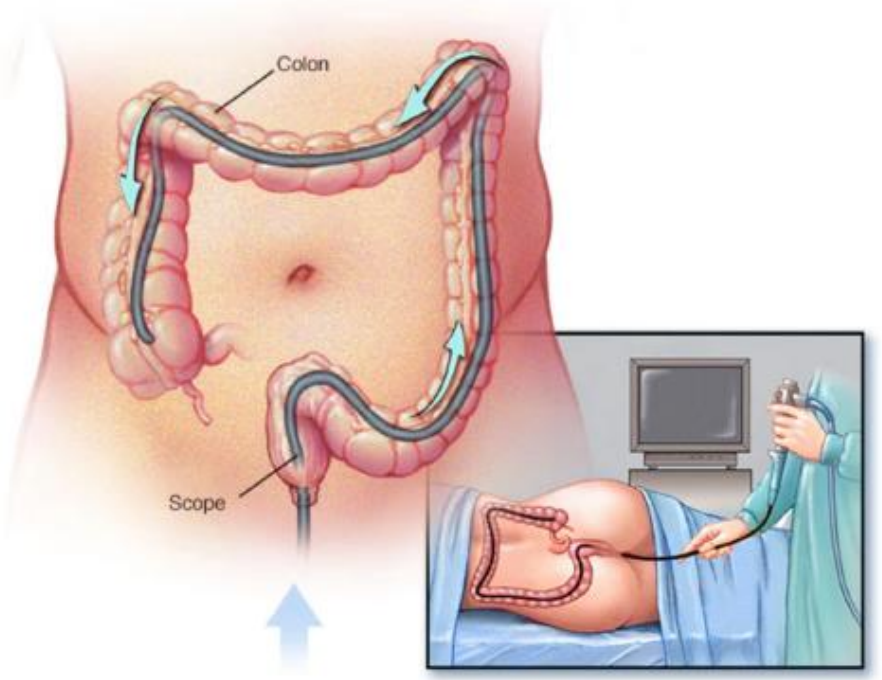


Laboratory tests in the diagnosis of IBD

- CBC, CMP, CRP, ESR, TTG IgA
  - Do *not* use ESR or CRP to screen for IBD
  - Do *not* use serologic tests to diagnose IBD
- Stool studies
- Fecal calprotectin
  - Fecal calprotectin ≤40 µg/g excludes IBD in patients with IBS symptoms

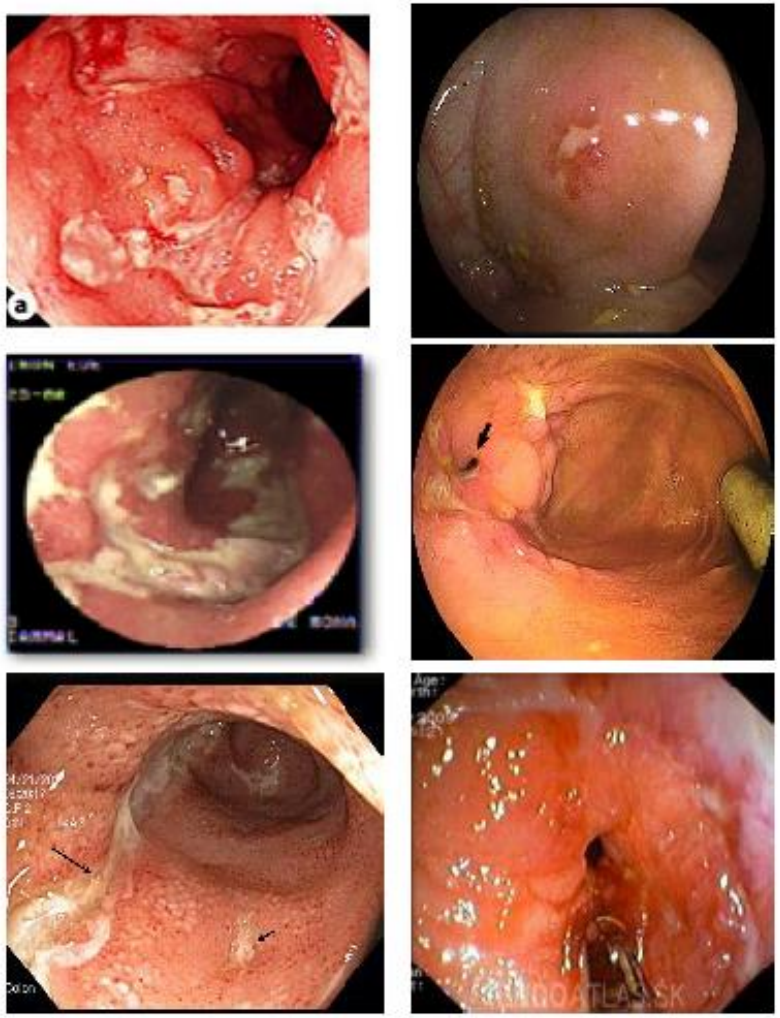
IBD diagnosis: Colonoscopy

- Gold standard for diagnosis and for differentiating UC from CD
- Enables objective assessment of disease
- Several scoring systems used in IBD
  - Mayo Endoscopic Score
  - Simple Endoscopic Score for Crohn's Disease (SES-CD)
  - Crohn's Disease Endoscopic Index of Severity (CDEIS)
  - Ulcerative Colitis Endoscopic Index of Severity (UCEIS)



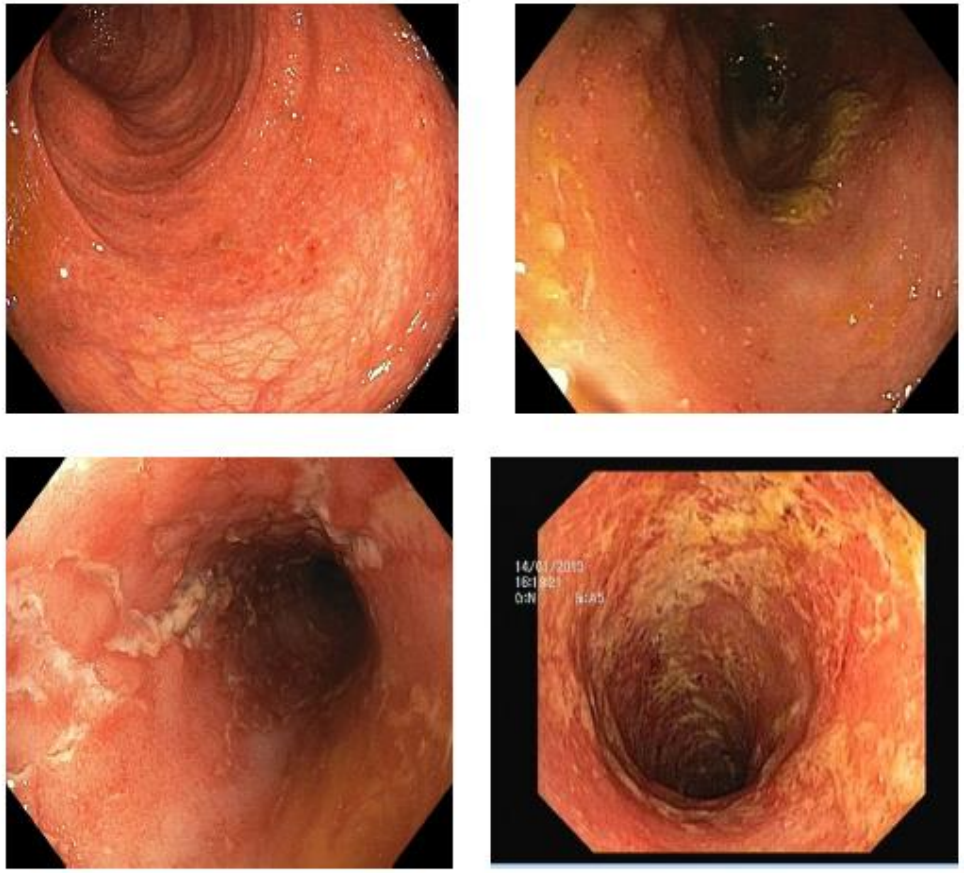
Crohn's disease Colonoscopy

Features on Colonoscopy
Cobblestoning
Serpiginous ulcerations
Apthoid ulcerations
Segmental involvement
Healthy mucosa intercalated with diseased mucosa
Stenosis
Fistulas
Spared rectum
Pseudopolyps

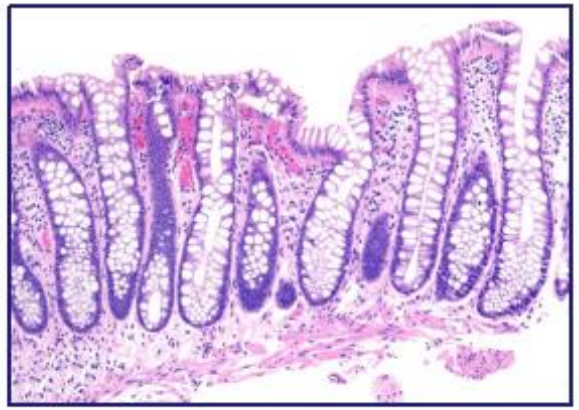


Ulcerative Colitis Colonoscopy

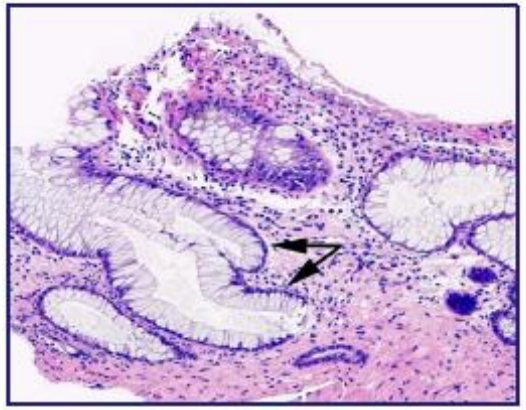
Features on Colonoscopy
Ulcerations
Erythema
Spontaneous bleeding
Rectal involvement
Edema
Friability
Erosions
Pseudopolyps



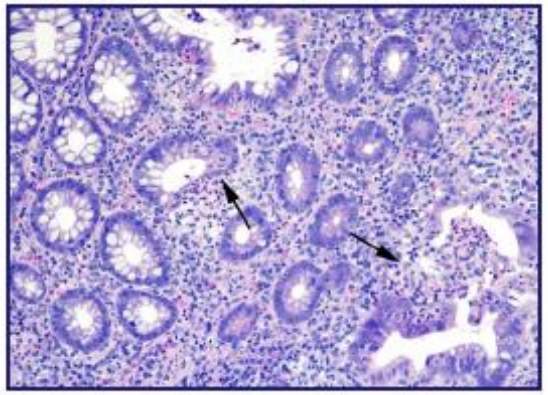
Diagnosis of IBD: Histology



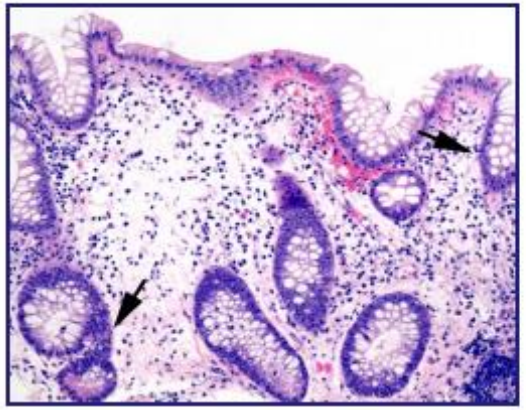
Normal Colon



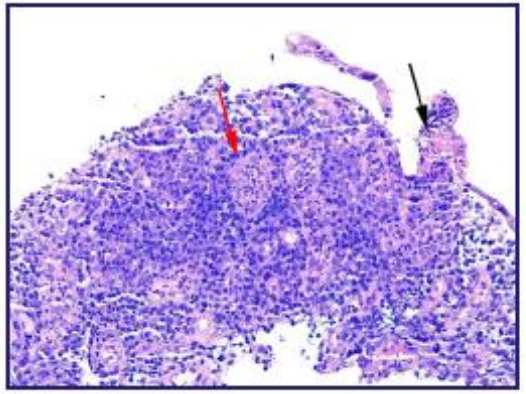
Inactive chronic colitis with crypt branching and dilation (arrows)



Moderately active chronic colitis with neutrophilic and lymphoplasmacytic infiltrate with cryptitis/crypt abscesses (arrows)



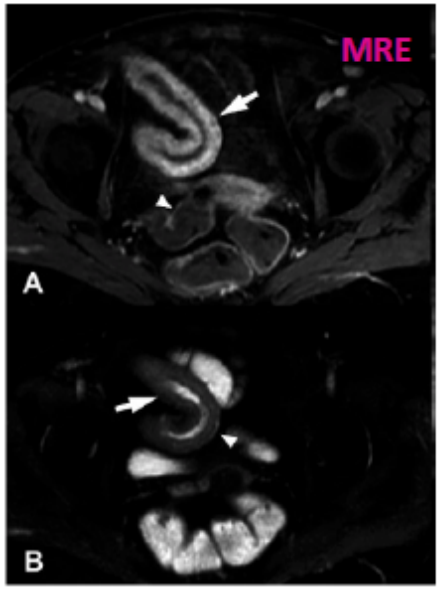
Mildly active chronic colitis with neutrophilic infiltrate in lamina propria and epithelium (arrows)



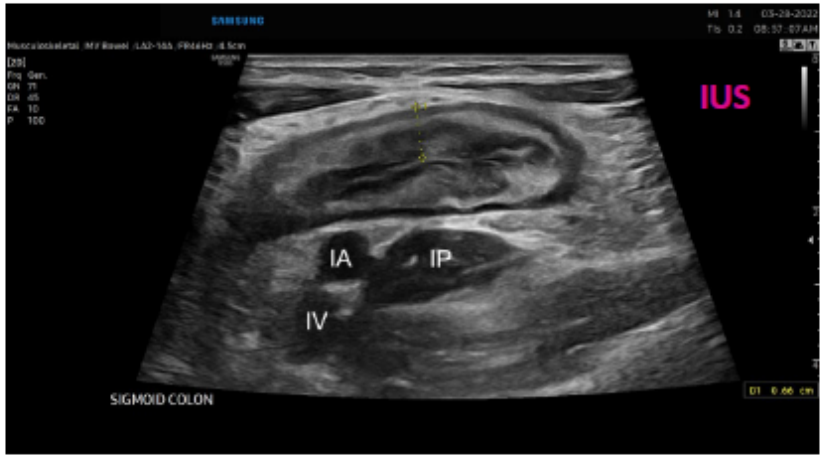
Severely active chronic colitis with loss of crypts and thin epithelium (black arrow) and dense lymphoplasmacytic and neutrophilic infiltrate

Diagnosis of IBD: Cross-sectional imaging

- Cross-sectional imaging techniques such as magnetic resonance enterography (MRE) and intestinal ultrasound (IUS) are useful adjuncts to diagnosis and assess disease activity
  - Complete visualization of the small bowel, evaluation for extraintestinal disease
  - Choice of imaging technique (if any) depends on presenting symptoms and clinical suspicion small bowel disease



A – Moderate bowel wall thickening and hyperenhancement
B – Increased signal intensity within the wall due to edema



Inflamed sigmoid colon

Rimola et al. *Gut* 2022

Management of IBD

Treatment Goals

Induce Remission

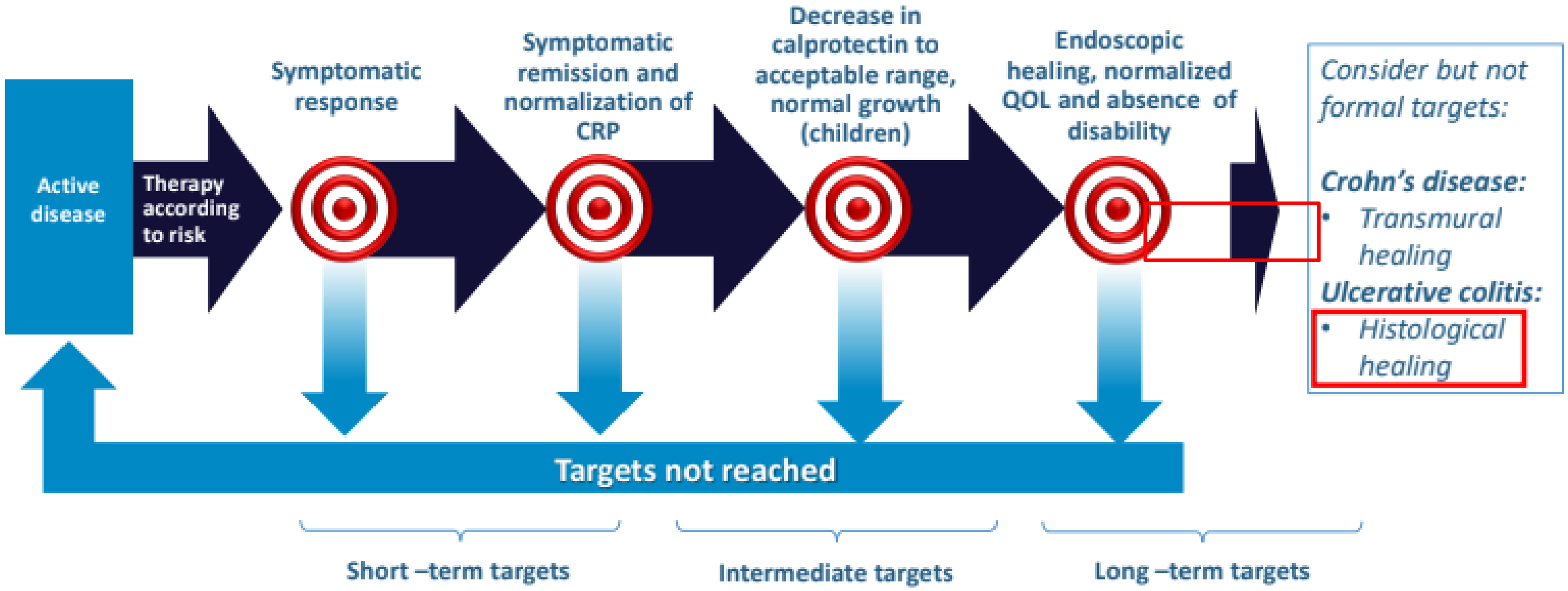
Maintenance of Remission

Disease Monitoring and Prevention

Improve Quality of Life

STRIDE 2 Consensus of Treatment Targets in IBD

Selecting Therapeutic TaRgets in Inflammatory Bowel Disease Endpoints



Turner. Gastroenterology. 2021

Current and emerging therapies for IBD

- 5-ASAs
- Steroids
- Thiopurines/MTX
- Anti-TNFs
- Anti-integrins
- Anti-IL12/23 inhibitors
- Jak-inhibitors
- S1P receptor modulator

Immune suppression and modulation

- Antibiotics
- Probiotics
- Exclusion diets
- Exclusive enteral nutrition (EEN)
- Partial enteral nutrition (PEN)
- Fecal microbiota transplantation

Microbiome modulation

- Resection of medically refractory disease
- Therapy of fibrostenosing complications
- Treatment of penetrating complications
- Viewed as late-stage option

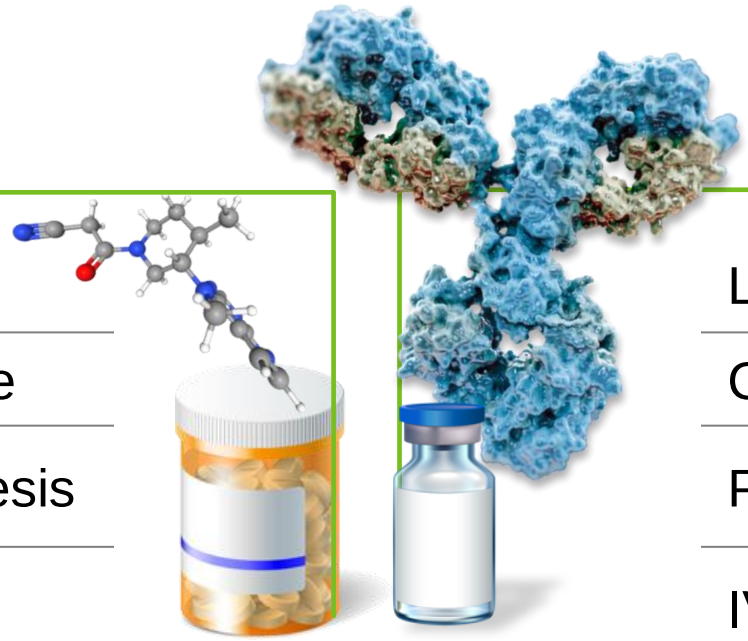
Surgery

MTX=methotrexate

Prescription Medications

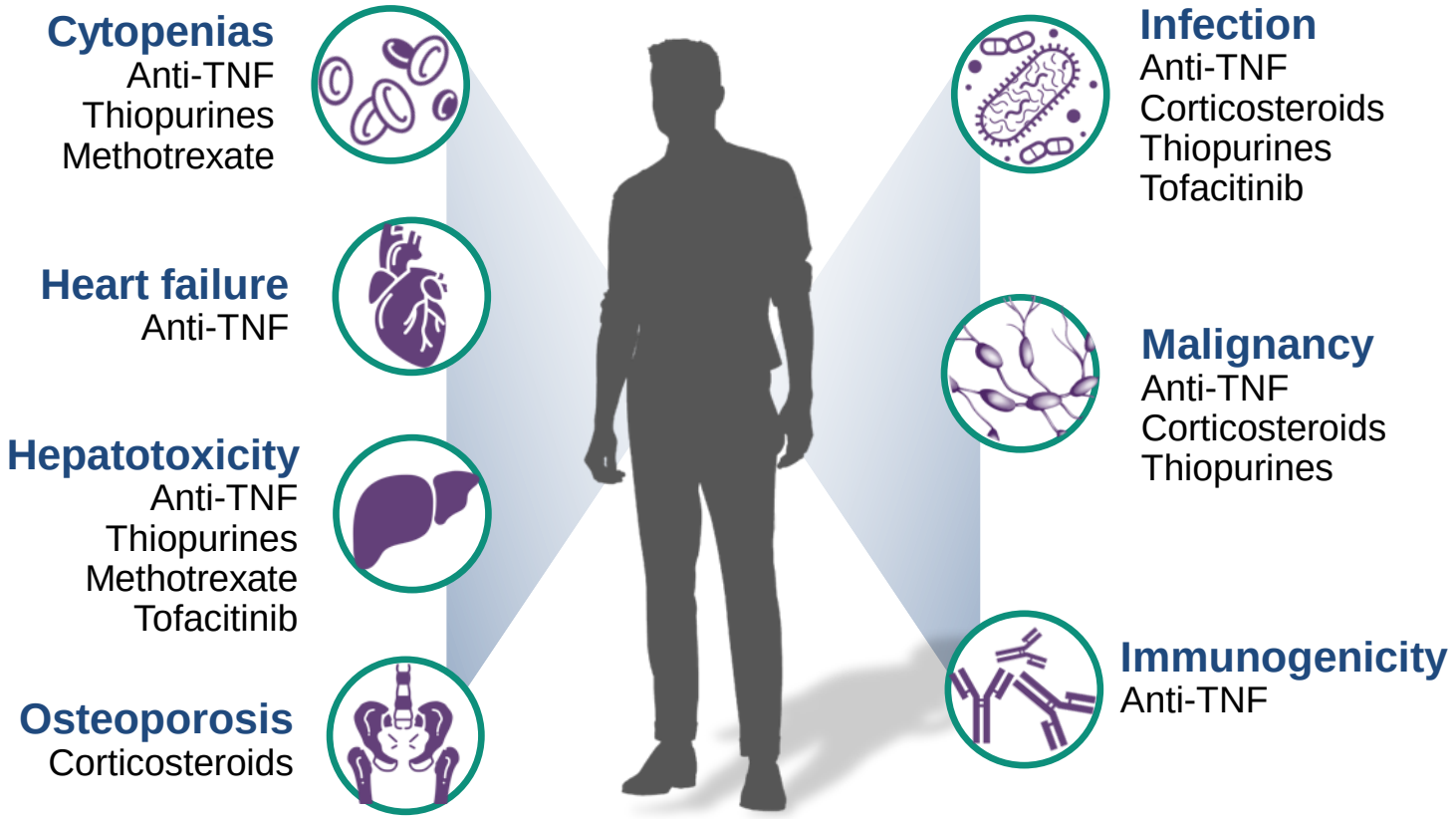
- Antibiotics
- Aminosalicylates
- Corticosteroids
- Immunomodulators
- Biologics (includes Biosimilars)
- JAK Inhibitors/S1P modulators

Small Molecules versus Biologics



Small molecules	Biologics
Small (single molecule)	Large (mixture)
Simple, well-defined structure	Complex heterogeneous structure
Produced by chemical synthesis	Produced in a living cell culture
Oral	IV to SC
Non-immunogenic	Immunogenic

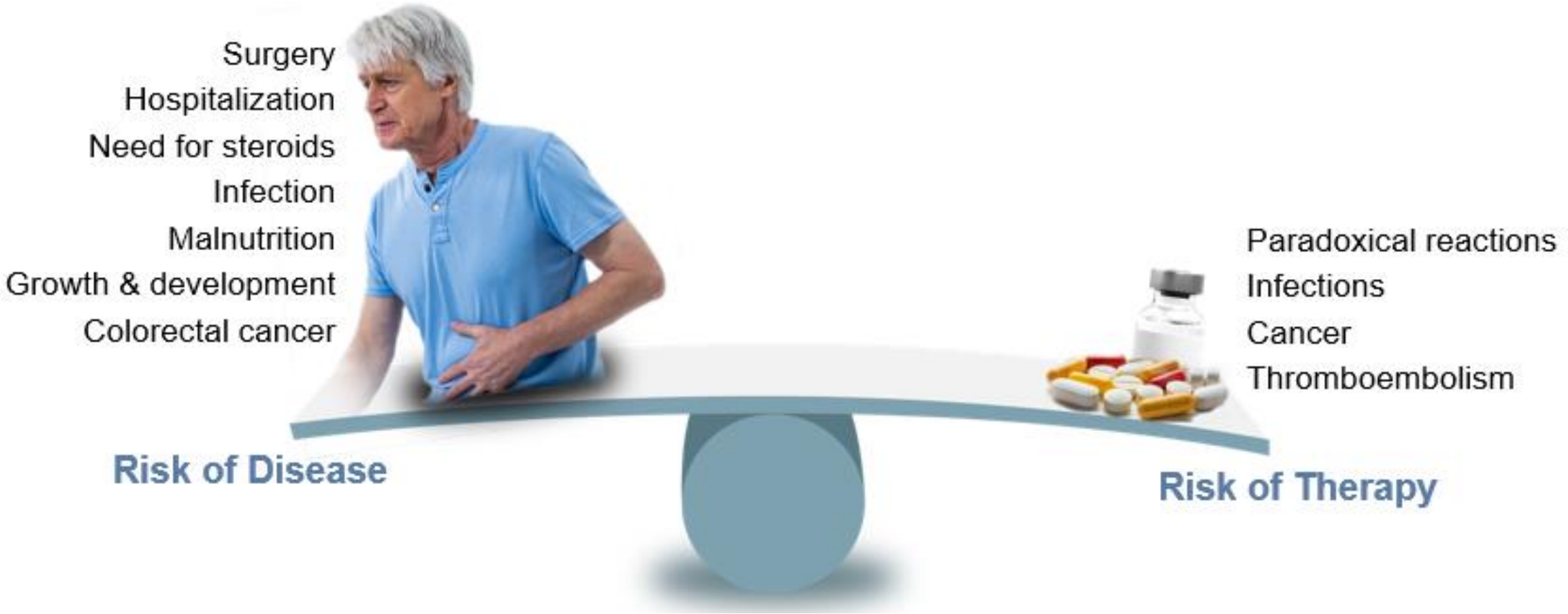
Key Safety Considerations With IBD Therapies



Note: Prescribing information from the following products contain a boxed warning: Anti-TNF agents (serious infections and malignancy), tofacitinib (serious infections and malignancy), methotrexate (bone marrow, lung, and kidney toxicities); and thiopurines (malignancy).

1. Lichtenstein GR et al. *Am J Gastroenterol.* 2009;104:465-483; **2.** Lichtenstein GR, et al. *Am J Gastroenterol*. 2012;107:409-1422; **3.** Yadav S et al. *Mayo Clin Proc*. 2015;90(6):738-746.

Choosing therapy for IBD: a balancing act



Guiding Concepts When Choosing Therapy

Matching treatment with disease activity, severity, risk for poor outcome

- Intensive regimen for induction and de-intensify for maintenance
- More intensive therapy for severe disease
- Mild inflammatory CD can be monitored off therapy

Timing is important

- Treat-to-target approach to meet short, intermediate, long-term targets
- Patients with short disease duration may respond better
- Early introduction of a biologic rather than waiting for failing steroids

Safety

- Choosing an organ specific drug when possible
- Age and gender specific drug-associated risk, comorbidities (cardiovascular risk factors)

MOA

- Choosing a drug with shared therapeutic target to cover coexisting IMIDs or extraintestinal manifestations
- Considering specific drug-related risks relevant to our patient

IMID = immunomodulatory imide drugs.

Agrawal Gastroenterology 2021;161:47–65

Surgery

- Surgery and medication can combine for better quality of life
- Primary goals of surgery:
  - Alleviate symptoms and disease complications
  - Conserve as much bowel as possible
  - Improve quality of life

Crohn's Disease:
https://www.crohnscolitisfoundation.org/what-is-crohns-disease/treatment/surgery

Ulcerative Colitis:
https://www.crohnscolitisfoundation.org/what-is-ulcerative-colitis/surgery

Complementary Medicine

What is complementary medicine?

A non-mainstream practice that is used together with conventional medicine[1]

Benefits:

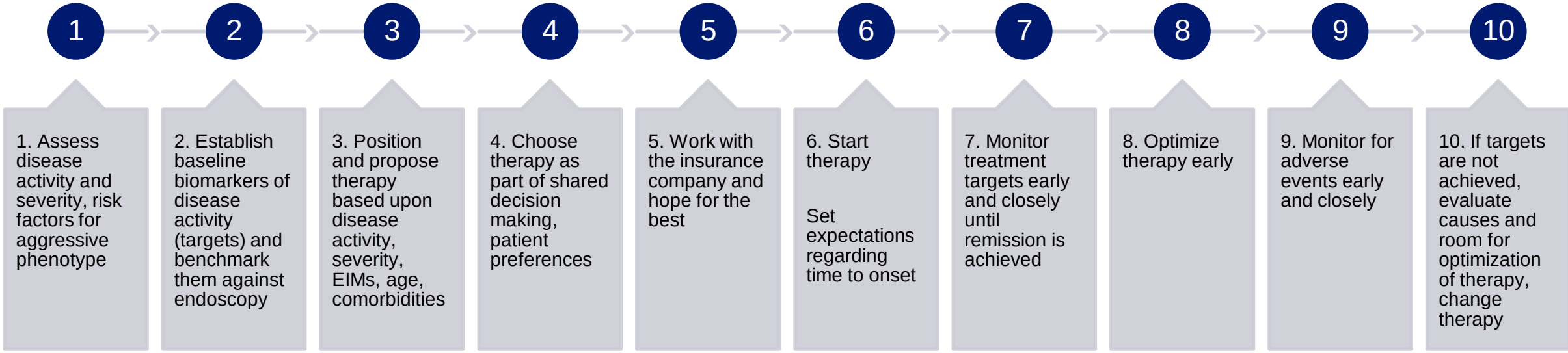
- To ease pain
- To help control symptoms
- To contribute to a better quality of life
- To improve mood and general attitude toward health and well-being

Common therapies that require more research:

- Mind-body
- Probiotics
- Vitamins & Minerals
- Medical Cannabis

1. https://www.nccih.nih.gov/health/complementary-alternative-or-integrative-health-whats-in-a-name

My treatment approach of IBD



Thank you!

Break

Understanding Obesity
Dr. Ashley Gilmore

Inherited Colorectal Syndromes

Michelle Juan MSN, RN, CGRN

INHERITED COLORECTAL SYNDROMES

Michelle Juan, MSN, RN, CGRN

IUHP DaLD Nurse Navigator: Advanced Colonoscopy & Inherited Colorectal Syndromes

OBJECTIVES

- Review and discuss types of inherited colorectal syndromes
- Testing typically performed to determine diagnosis
- Risk factors for patients with syndromes
- Care coordination and treatment for these patients

IMPORTANCE OF COLORECTAL CANCER

- In the US, CRC is the 2nd most common cause of death for men and women combined
- ACS projects over 52,500 deaths in 2023
- Over 153,000 new cases for 2023 in the US
- About 5%-10% of people who develop CRC have an inherited gene (at least the ones we know)

INHERITED COLORECTAL CANCER SYNDROMES

- Lifetime risk of CRC can approach 70-100%
- High-risk for other cancers besides gastrointestinal
- Polyposis-types
- Non-polyposis-types

Kanth et al AJG 2017

TYPES OF INHERITED SYNDROMES

- Lynch
  - (hereditary non-polyposis colon cancer or HNPCC)
- FAP (familial adenomatous polyposis)
  - Attenuated FAP
  - Gardner syndrome
  - Turcot Syndrome
- MUTYH-associated polyposis (MAP)
- Peutz-Jeghers syndrome (PJS)
- Juvenile polyposis syndrome (JPS)
- PTEN hamartoma tumor syndrome
  - Cowden syndrome
- CHEK2
- Li-Fraumeni

LYNCH SYNDROME

- Inherited genetic mutation that increases the risk of developing colon cancer (and others)
- Dr. Warthin in 1895 to Dr. Henry Lynch in the 1960s

LYNCH

Dominant hereditary pattern—50% chance of passing to child

Gene: MLH1, MSH2, MSH6, PMS2 & EPCAM

- Mismatch repair gene (MMR) –cannot fix any errors and results in no way to get rid of damaged cells

Most common inherited CRC syndrome

- Approximately 3% of CRC

Lynch vs. HNPCC

- Used interchangeably today but technically different*

FAP

- Familial Adenomatous Polyposis (FAP) is an inherited genetic mutation that increases the risk of colon cancer (and others)
- APC gene defect
- Autosomal dominant—50% chance of passing on to offspring
- Can occur spontaneous (not inherited)
- Characterized by 100s to 1000s or polyps--”carpet like”
- Prone to duodenal adenomas

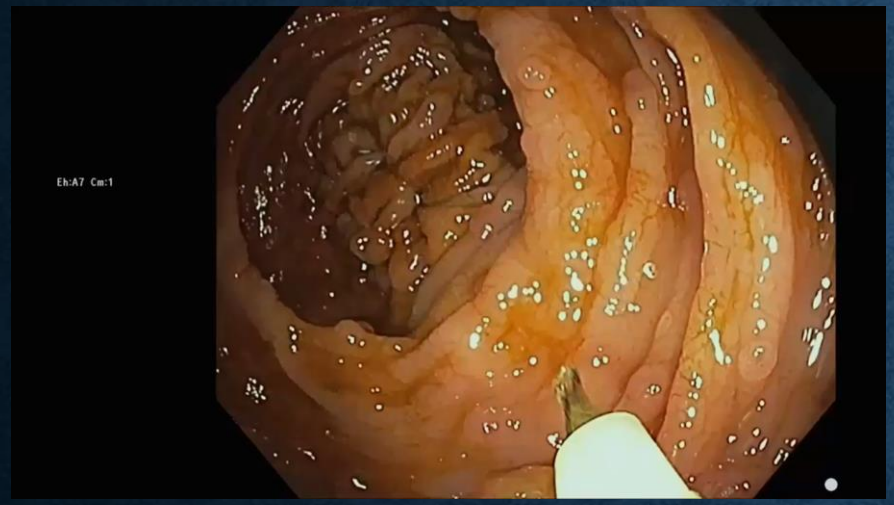
FAP

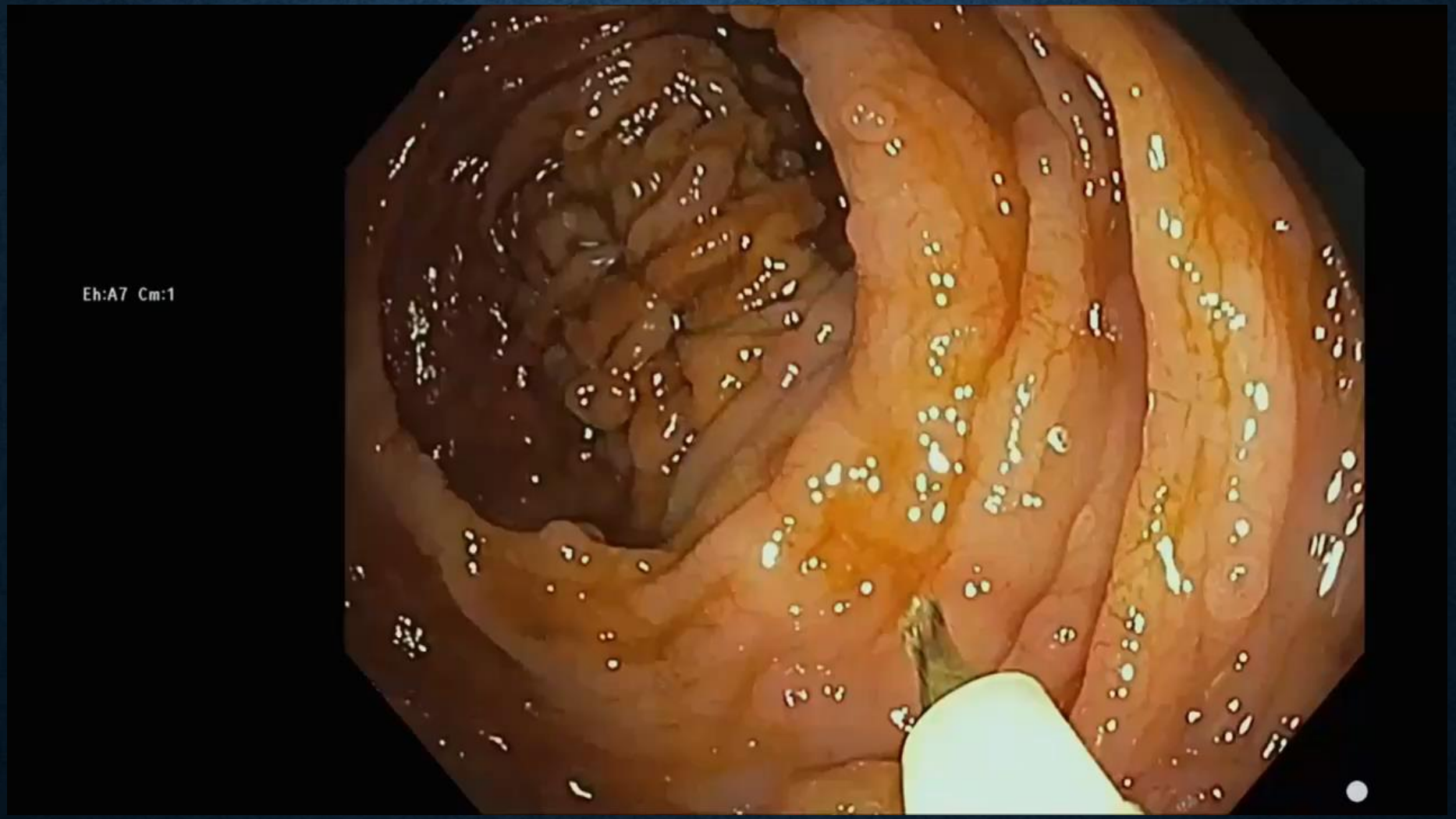
Colonoscopy starts earlier—in teens

Most have surgery

Greater than 90% guarantee of colon cancer

FAP

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FAP SUB-TYPES

Attenuated FAP (AFAP)

- Fewer polyps (less than 100 but can be more)
- Colon cancer occurs later
- First described in 1990

Gardner Syndrome

- Desmoid tumors—additional growths outside the colon
- Epidermoid cysts, extra teeth, fibromas, lipomas
- Benign but can be dangerous

Turcot Syndrome*

- Brain tumors, spinal tumors, skin cancer
- *Can be seen in Lynch syndrome

MUTYH (MAP)

- MUTYH associated polyposis (MAP)
- MUTYH gene—only linked since around 2002
- Autosomal recessive
  - Need to have mutated gene from each parent for child to be affected (25% chance)
  - Other children can be carriers or not affected

MAP

Polyposis can be adenoma, serrated or hyperplastic

Polyp burden varies

Screening begin in 20's

OTHER RARE SYNDROMES

PJS

Peutz-Jeghers

STK11 mutation

Characterized by hamartomatous and adenoma polyps

Autosomal dominant

Melanocytic macules on lips and perioral is an outward sign

Early onset

PTEN

PTEN mutation

Autosomal dominant

Hamartoma tumors

Can have adenomas, hyperplastic, serrated polyps

Cowden syndrome

Bannayan-Riley-Ruvalcaba syndrome

Scoping starts in 30s or earlier

JPS

Juvenile polyposis syndrome

SMAD4 mutation/BMPR1A variant

Autosomal dominant

Hamartoma polyposis

Gastric polyposis

AVMs, HHT, digital clubbing

Early onset

OTHER RARE SYNDROMES

CHEK 2

- CHEK 2 gene
- Autosomal dominant
- Increased breast cancer risk
- Can be linked to Li-Fraumeni

Li-Fraumeni

- TP53 gene
- Autosomal dominant
- Increased risk of multiple cancers
- Early onset

GENETIC TESTING

- Clinical testing
- Family history
- Genetic testing
  - Blood
  - Saliva
- Combination of all

GENETIC TESTING CONSIDERATIONS

- When do you test?
- Genetic counselor role
- Cost of genetic testing
- Genetic Information Nondiscrimination Act (GINA)

WHEN DO YOU TEST?

Varies	• Syndrome • Clinical history • Family history
Colorectal Cancer Panel	• Usually includes 20 genes

ROLE OF GENETIC COUNSELOR

Completes extensive family history

Help make informed decision

- When to test
- Who to test
- Testing of family

Family planning

Discuss all risks

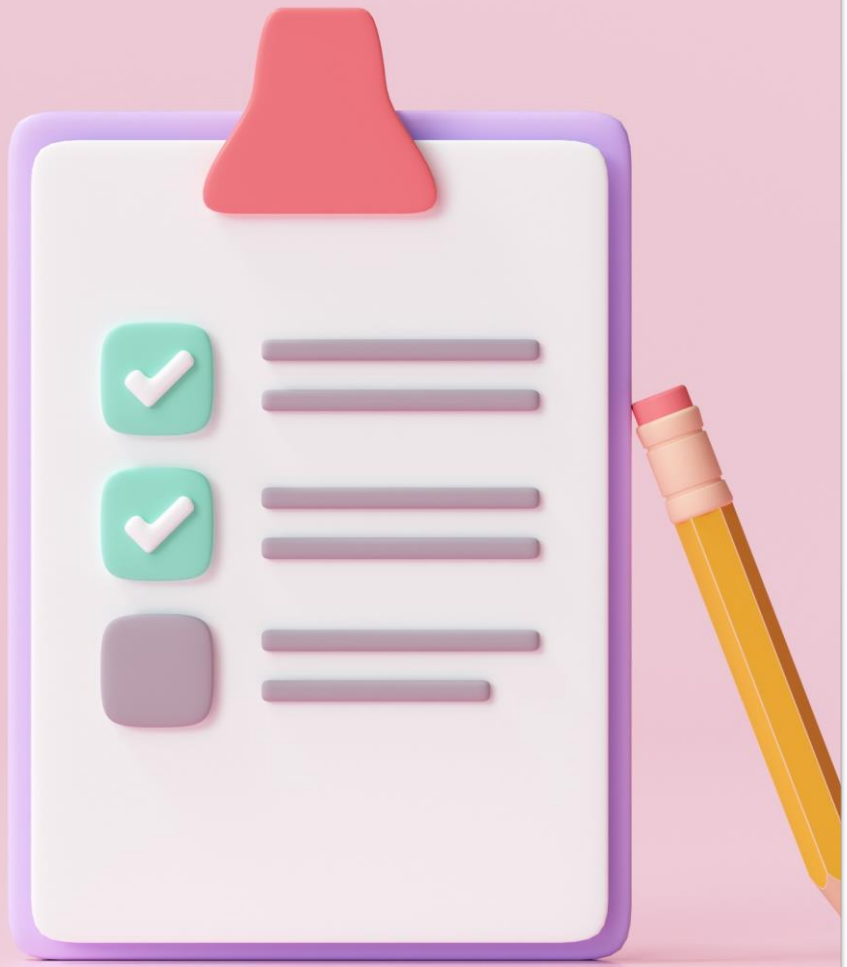
- Colorectal and other cancer risks associated

Recommendations for screenings and timing

Help navigate insurance and upfront costs

GINA

- Genetic Information Nondiscrimination Act (GINA)
- Protects against discrimination from employers (greater than 15 or more)
- Prohibits the use of genetic information in making employment decisions
- Confidentiality
  - There are exceptions (FMLA, court order, public health agency due to life threating condition)
- Prohibits employers from requesting the genetic information
  - There are exceptions (such FMLA, required by law/DNA purposes for identification
  - Obtained from public sources—websites etc.



TREATMENT/SURVEILLANCE

- Varies based on syndrome
- Can include upper endoscopies/ERCP
- Extraintestinal screenings/prevention
- Potentially surgery
- Potentially chemoprevention agents

LYNCH SURVEILLANCE

- Screening colonoscopy starts between 20-25yrs of age
  - Typically repeated every 1-2 years depending on polyps
  - MSH6 and PMS2 could start screening in 30’s as long as no family history of CRC
- Screening EGD
  - Typically start in 30s—but could start sooner
  - Must consider family history, ethnicity, H Pylori, Barrett’s
  - Repeat based on results-typically every 2-4 years

LYNCH SURVEILLANCE

Small Bowel cancer

- Most in the TI or duodenum which can be seen during scoping

GYN considerations

- Endometrial cancer most common-affects at least 1 in 50% of known Lynch families
- Endometrial biopsy at least in 30s
- Seek OBGYN/GYN with Lynch knowledge for family planning
- Hysterectomy should be considered once family completed—ideally by 45 yrs.

Dermatology

- Muir-Torre Syndrome variant –sebaceous tumors
- Other skins lesions

Urinary cancer

- Annual urinalysis starting at age 30 for those with family history or MSH2 variant

Pancreatic cancer

- Family history of pancreatic cancer and variants MLH1, MSH2 or MSH6 around 50s

FAP TREATMENT/SURVEILLANCE

- Early onset of polyps
  - Start developing adenomas by mean age 16yrs.
  - Nearly 100% chance of getting colon cancer if not treated
- Familial –although up to 1/3 can occur spontaneously
  - Early genetic testing for children
- Screening colonoscopy start around age 10yrs.
- Other screenings
  - EGD/ERCP for gastric and duodenal adenomas
  - Thyroid ultrasound

Maratt & Stoffel, Management of Hereditary CRC, Springer 2020

FAP TREATMENT/SURVEILLANCE

- Surgery
  - Ileorectal anastomosis-small bowel attached to rectum
  - Proctocolectomy- pouchoscopy made to anus
  - Proctocolectomy with ileostomy creation (external stoma)
- Chemoprevention
  - Sulindac-reduction of polyp formation
- Socioeconomic
- Psychological

AFAP TREATMENT/SURVEILLANCE

- Attenuated FAP
  - APC variant
  - Less polyps than FAP
- Similar screening to FAP
  - Screening starts later in teens to 20yrs and every 1-2 years depending on polyp burden
- Similar treatment/surveillance to FAP
  - Sulindac if high polyp burden
  - Surgery if adenoma burden cannot be endoscopically managed
  - Monitor same extracolonic type cancers as FAP

MAP TREATMENT/SURVEILLANCE

- MUTYH-associated polyposis
- Screening colonoscopy starts between 20-30yrs
  - Repeat every 1-2 years depending on polyp burden
- Upper endoscopy depends on polyp burden
  - Duodenal polyps
- Surgery
- Extracolonic cancer
  - Similar to FAP/AFAP--less likely though
  - Breast cancer link for females

HAMARTOMATOUS SYNDROMES TREATMENT/SURVEILLANCE

PJS

- Colonoscopy and EGD by age 10
  - (+)polyps=every 2-3 years
  - (-)polyps=again at 18yrs
- Extracolonic cancer screenings: testicular, cervical/ovarian/breast, pancreas

PTEN

- Colonoscopy and EGD in 30's
  - Repeat every 3-5 years or based on findings
- Extracolonic cancer screenings: THYROID*, dermatology, breast, renal, endometrial

JPS

- Colonoscopy and EGD around 12yrs
  - (+)polyps=every 1-3 years
  - (-)polyps=again at 18yrs
- Extracolonic screenings: HHT and AVMs, severe form JPD infancy*

SUMMARY

Inherited Colorectal Syndromes

- At a greater risk of developing at GI cancers
- Need early and frequent surveillance

Care Management is complex and longitudinal

- Genetic syndromes cannot be cured
- Family planning considerations
- Financial aspect to screenings
- Emotional aspect to screenings and willingness to make self a priority

Navigation of patients involves more than GI

- Multidisciplinary collaboration

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THANK YOU!

QUESTIONS

Closing/Surveys

Thank you for attending!