Surveying the Colon; Polyps and Advances in Polypectomy
Educational Objectives

• Identify classifications of polyps
• Describe several types of polyps
• Verbalize rationale for polypectomy
• Identify risk factors for colon cancer
• Describe polypectomy technology
A Review of the Colon

- Ascending Colon
- Transverse Colon
- Descending Colon
- Sigmoid Colon
- Cecum
- Ileocecal Valve
- Rectum
Clinical Background

The layers of the intestinal wall:

1. Mucosa
2. Submucosa
3. Muscularis
4. Serosa
Clinical Background

Polyp

- Anything that protrudes above the surface of the mucosal lining in the intestinal tract
Descriptive Characteristics of Polyps

- Diminutive – very small 1 – 8 mm (verify size)
- Pedunculated – mushroom shaped with stalk
- Flat – lies flat on the intestinal mucosa
- Sessile – large polyp that is irregular in shape
- Single or multiple
Types of Polyps
Two Major Types

- Neoplastic
  - Tubular Adenoma
  - Villous Adenoma
  - Tubulovillous Adenoma

- Non-neoplastic
  - Hyperplastic
  - Hamartomas
  - Inflammatory “pseudopolyps”
Neoplastic polyp

- Identified histologically
  - Tubular adenoma
  - Villous adenoma
  - Tubulovillous adenoma
Tubular Adenoma

Tubular Adenomas

- Benign neoplasms composed of overgrowth of an epithelial tissue resembling a tubular gland
- Most common type of polyp that makes up 75 - 85% of the polyps found on colonoscopy
- They appear smooth
- Malignancy rate is 5-10%
Villous Adenoma

• Malignancy rate is high 30 – 40%
• Typically appear as solitary, sessile and large
• May bleed easily
• Have a lobular / cauliflower appearance
• Often found in the right/ascending colon
• Incidence greater in age 60+
Tubulovillous Adenomas

- A combination of both tubular and villous tissue
- May be pedunculated or sessile
- Surface can be smooth or appear granular
- Typically appear as solitary, sessile and large
- 5 - 15% of the polyps found on colonoscopy
- Malignancy rate 15%-20%
Neoplastic Polyps

Disease State
– Familial Adenomatous Polyposis (FAP)
Neoplastic Polyps

Any questions about neoplastic polyps?
Non-neoplastic Polyps

- Hyperplastic
- Hamartomas
  - Juvenile
  - Peutz-Jeghers
- Inflammatory
Non-neoplastic Polyps

Hyperplastic Polyps

- Usually less than 5 mm in size – diminutive polyps
- Commonly found in the rectosigmoid area
- Develop as a result of a failure of the mature cells to shed normally
- Biopsy to rule out adenoma or use NBI or chromoendoscopy

Hyperplastic polyp in rectum, seen upon retroflexion of the scope
Non-neoplastic Polyps

Hamartomas

- A growth that arises from normal tissue
- Self-limiting and benign
- Occurs in many parts of the body; not limited to the colon
- Hereditary
- Diseases
  - Juvenile Polyposis
  - Peutz Jeghers Syndrome
Non-neoplastic Polyps

Hamartomatous Polyps
– Juvenile Polyps
Non-neoplastic Polyps

Hamartomatous Polyps
- Peutz-Jehgers Syndrome
Non-neoplastic Polyps

- Inflammatory polyps/pseudopolyps

*Inflamed hyperplastic polyp*
Non-neoplastic polyps

Any questions about Non-neoplastic polyps?
Colorectal Cancer

- Colorectal Cancer most common GI malignancy & the second most common cancer in the western world
- 56,000 deaths/year
- Incidence is decreasing
- Cancer is diagnosed when neoplastic cells cross into the muscularis mucosa
- Normal epithelium to carcinoma may take 10 years, but as little as 2 to 3 years
Colorectal Cancer

Stages of cancer development
Colorectal Cancer

- Predisposing factors
  - Genetics
  - Increased age
    - over age 50
  - Obesity
  - IBD
  - Diet
  - Smoking > 20 yrs

- Signs and symptoms
  - Anemia
  - Occult blood loss
  - Change in bowel habits
  - Obstruction and pain
  - Palpable tumor
Colorectal Cancer

Ulcerated, bleeding polyp indicative of colon cancer
Diagnosis

Flat tubular adenoma made more easily visible via chromoendoscopy
Diagnosis

Sessile villous adenoma seen with Narrow Band Imaging (NBI) which enhances vascular patterns
Diagnosis

- FOBT – Fecal Occult Blood Test
- Sigmoidoscopy
- Virtual Colonoscopy
- Standard Colonoscopy
Diagnosis

Compare Virtual and Standard Colonoscopy

Figure 2. 10-mm Tubulovillous Adenoma in an Asymptomatic 61-year-old Man Undergoing VC Screening

Pickhardt. DDW Syllabus. 2005, May
Polypectomy Techniques

- Polyp Removal
  - Cold Polypectomy
  - Hot Polypectomy
  - Submucosal Injection Polypectomy
- Polyp Retrieval
- Bleed Management
Polyp Removal

Cold Biopsy Polypectomy
Polyp Removal

Cold Snare Polypectomy
Polyp Removal

Hot Biopsy Polypectomy
Polyp Removal

Hot Snare Polypectomy
Polyp Resection Techniques

*en bloc* resection with standard diathermic snare
Polyp Resection Techniques

_Piecemeal_ polypectomy with standard diathermic snare

- Mucosa
- Submucosa
- Muscularis
Submucosal Injection Polypectomy

- Sessile or flat polyps
- Preferable to inject proximally
  - Multiple injections given around the edges
  - Can also be injected into the center
- Desired elevation requires at least 3-4cc fluid
- Observe “non-lifting” sign
Submucosal Injection Polypectomy

**Fluids used**

- Saline *with or without epinephrine*
- Some add methylene blue
- Sodium hyaluronate
- Methylcellulose
- Dextrose 50

} prolongs bleb, but *may* pose other issues
- *require larger bore needle*
- *cost more than other media*
- *limited availability*
- *cause potential complications*
Submucosal Injection

Polypectomy

Fluid injection increases the thickness of the submucosal layer and can make the polypectomy easier and safer.
Submucosal Injection
Polypectomy

Bleb

Margin
Polyp Retrieval
Bleed Management
Summary

• Colorectal cancer awareness has improved screening colonoscopy numbers
• Advances in device technology, and polypectomy techniques
  • benefit your patients
  • provide safeguards
• Keeping up with the latest technology and guidelines will ensure safety and success
Thank You!