

Colonic Polyps



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Colon Polyps



- The term polyp of the colon refers to a protuberance into the lumen from the normally flat colonic mucosa.
- Polyps are usually asymptomatic but may ulcerate and bleed, cause tenesmus if in the rectum, and, when very large, produce intestinal obstruction.

Non-neoplastic polyps



- Hyperplastic
- Mucosal
- Inflammatory
- Submucosal
- Adenomatous
- Serrated –mixed hyperplastic and adenomatous
- Hamartomous

Hyperplastic polyps



- Located in the rectosigmoid
- < 5 mm in size
- Rarely develop into colorectal cancers

Hyperplastic polyposis syndrome



- (HPS) refers to a condition characterized by multiple, large and/or proximal hyperplastic polyps and/or serrated adenomas - mixed hyperplastic / adenomatous polyps.

WHO criteria for HPS



- At least five hyperplastic polyps proximal to the sigmoid colon, of which two are greater than 1 cm in diameter, or
- Any number of hyperplastic polyps occurring proximal to the sigmoid colon in an individual who has a first degree relative with hyperplastic polyposis, or
- Greater than 30 hyperplastic polyps distributed throughout the colon.

Mucosal polyps



- Mucosal polyps are small (usually <5 mm) excrescences of tissue that endoscopically resemble the adjacent flat mucosa and histologically are normal mucosa. They have no clinical significance

Inflammatory pseudo-polyps



- Inflammatory pseudopolyps are irregularly shaped islands of residual intact colonic mucosa that are the result of the mucosal ulceration and regeneration that occurs in inflammatory bowel disease (IBD).
- Typically multiple, often filiform and scattered throughout the colitic region of the colon. They may also be more isolated and semipedunculated in areas of more active recent inflammation, and have mucus adherent to their apices

Submucosal polyps



- Lymphoid aggregates,
- Lipomas,
- Leiomyomas,
- Pneumatosis cystoid intestinalis,
- Hemangiomas,
- Fibromas,
- Carcinoids,
- Metastatic lesions

Endoscopic Ultrasound



- Useful in defining the site of origin and for biopsy of sub-mucosal lesions if the diagnosis is in doubt

Hamartomatous polyps



- Juvenile polyps
- Peutz-Jeghers polyps

Juvenile Polyps



- Juvenile polyps are hamartomatous lesions that consist of a lamina propria and dilated cystic glands rather than increased numbers of epithelial cells

Familial Juvenile Polyposis



- FJP is associated with an increased risk for the development of colorectal cancer, and in some families, gastric cancer, especially where there are both upper and lower gastrointestinal polyps.

Peutz-Jeghers polyps



- The Peutz-Jeghers polyp is a hamartomatous lesion of glandular epithelium supported by smooth muscle cells that is contiguous with the muscularis mucosa

Peutz-Jeghers polyps



- Patients with PJS are at increased risk of both gastrointestinal (gastric, small bowel, colon, pancreas) and nongastrointestinal cancers with a cumulative cancer risk of about 50 percent by age 60.

ADENOMATOUS POLYPS



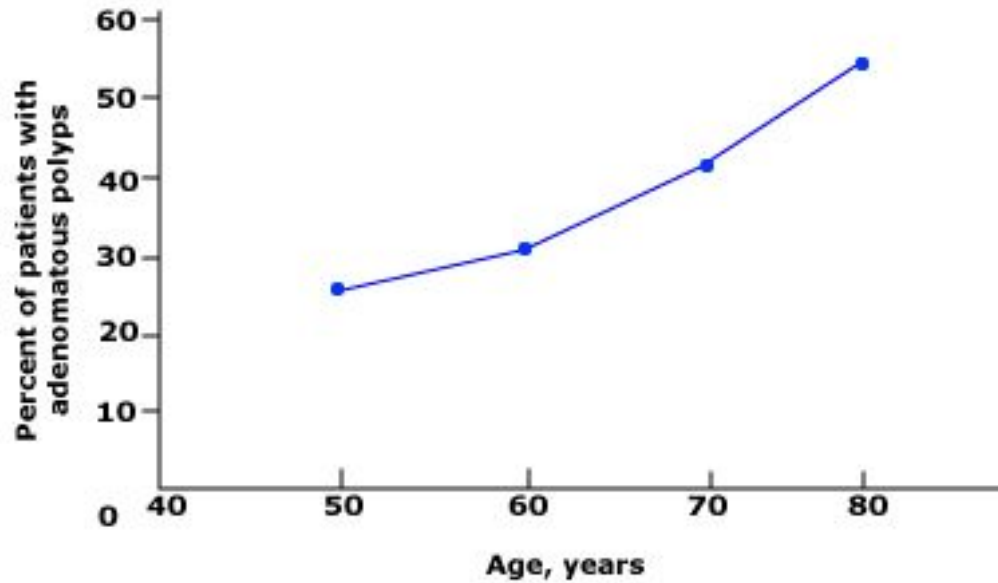
- About two-thirds of all colonic polyps are adenomas.
- Adenomas are by definition dysplastic and thus have malignant potential.
- Nearly all colorectal cancers arise from adenomas, but only a small minority of adenomas progress to cancer (1 in 20 or less).

ADENOMATOUS POLYPS



- The time for development of adenomas to cancer is about seven years.
- Approximately 30 to 40 percent of the United States population over the age of 50 have one or more adenomas
- The cumulative colorectal cancer risk is about 5 percent.

Prevalence of adenomatous colonic polyps increases with age



Synchronous lesion



- An adenoma that is diagnosed at the same time as an index colorectal neoplasm is called a *synchronous lesion*.
- Thirty to 50 percent of colons with one adenoma will contain at least one other synchronous adenoma.

Metachronous lesion



- One that is diagnosed at least six months later is considered *metachronous lesion*

Pathologic classification



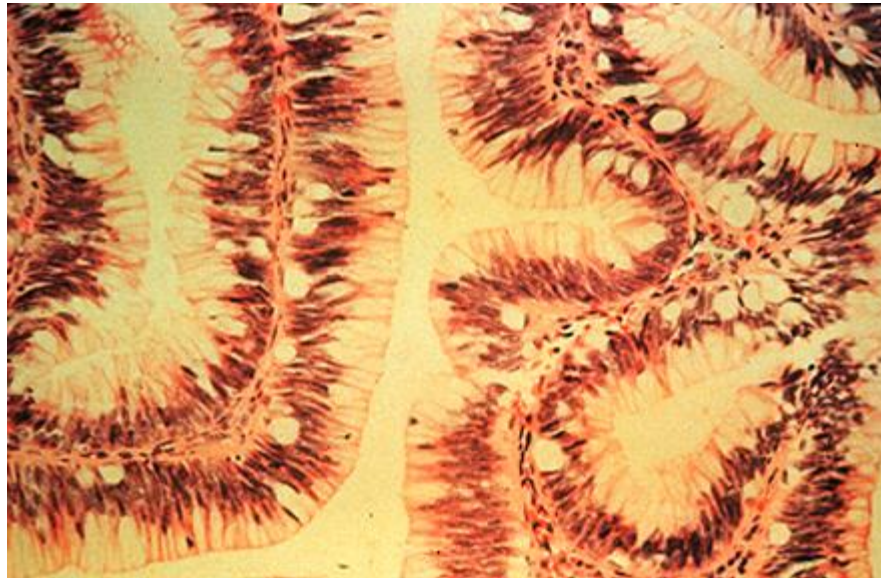
- The histologic features and size of colonic adenomas are the major determinants of their malignant potential.
- The glandular architecture of adenomas is characterized as tubular, villous, or a mixture of the two.

Tubular adenomas



- Tubular adenomas account for more than 80 percent of colonic adenomas.
- They are characterized by a network of branching adenomatous epithelium.
- To be classified as tubular, the adenoma should have a tubular component of at least 75 percent

Colonic adenoma



Villous adenomas



- Villous adenomas account for 5 to 15 percent of adenomas.
- They are characterized by glands that are long and extend straight down from the surface to the center of the polyp.
- To be classified as villous, the adenoma should have a villous component of at least 75 percent.

Tubulovillous adenomas



- Tubulovillous adenomas account for 5 to 15 percent of adenomas.
- Have 26 to 75 percent villous component.

Polyp base



- **Sessile** - base is attached to the colon wall,
- **Pedunculated** if a mucosal stalk is interposed between the polyp and the wall.

- Adenomas are most commonly found within **raised** lesions, up to 27 to 36 percent are **flat** (having a height less than one-half the diameter of the lesion) and up to 1 percent are **depressed**

Dysplasia



- All adenomas are dysplastic.
- A new system that recognizes two grades of dysplasia - ***HIGH*** and ***LOW***.
- Similarly, the older terms "carcinoma in situ" or "intramucosal adenocarcinoma" should both be described as high-grade dysplasia

Invasive malignancy



- Invasive malignancy is defined by a breach of the muscularis mucosa by neoplastic cells.
- Because there are no lymphatic vessels in the lamina propria, they are not associated with metastasis, and can be managed along conventional guidelines in adenoma follow

Clinical presentation and natural history of Adenomas



- Adenomas are generally asymptomatic and are most often detected by colon cancer screening tests.
- Small adenomas do not typically bleed
- Adenomas are found in 17 to 43 percent of patients with a positive FOBT but they are also detected in 32 to 41 percent of asymptomatic men with a negative FOBT .
- Advanced adenomas are more likely to bleed and cause a positive fecal occult blood test.

ADVANCED ADENOMA



- Villous histology,
- Increasing polyp size,
- High-grade dysplasia

Polyp size & advanced features



- The proportion of adenomas showing advanced histologic features (high-grade dysplasia or >25 percent villous histology) increases from
- - 1 % in small adenomas (<5 mm) to
 - 7 to 12 % for medium-sized adenomas (5 to 10 mm)
 - 20 % for large adenomas (>1 cm)

Age & advanced features



- Older age is also associated with high-grade dysplasia within an adenoma, independent of size and histology

Advanced pathologic risk factors



- Adenomatous polyps >1 cm in diameter
- Adenomatous polyps with high-grade dysplasia
- Adenomatous polyps with >25 percent villous histology
- Adenomatous polyps with invasive cancer
- More than 2 adenomatous polyps

Detection and colonoscopic removal of polyps



- Colonoscopy is considered the optimal examination for the detection of adenomatous polyps, particularly in view of the ability to provide therapeutic polypectomy in conjunction with diagnosis

Detection and colonoscopic removal of polyps



- The colonoscopic miss rate determined by two same day endoscopic examinations in 183 patients was
 - 27 percent for adenomas <5 mm,
 - 13 percent for those 6 to 9 mm, and
 - 6 percent for adenomas >1 cm

Prevention



- Guidelines proposed by American College of Gastroenterology (ACG):
- A diet that is low in fat and high in fruits, vegetables, and fiber. There may be advantages with cruciferous vegetables and unprocessed forms of cereal fiber.
- Maintenance of normal body weight through regular exercise and caloric restriction.
- Avoidance of smoking and excessive alcohol use, especially beer.
- Dietary supplementation with 3 g of Calcium Carbonate.

Surveillance



- Patients with small rectal hyperplastic polyps should be considered to have normal colonoscopies, and therefore the interval before the subsequent colonoscopy should be 10 years;

Surveillance



- **Patients with**
 - **only 1 or 2**
 - **small (<1 cm)**
 - **tubular adenomas**
 - **only low-grade dysplasia**

should have their follow-up colonoscopy in 5-10 years.

Surveillance



- Patients with multiple (3-10) adenomas, adenoma > 1 cm, adenoma with villous features, high-grade dysplasia

should have their follow-up colonoscopy in 3 years providing that piecemeal removal has not been performed and the adenoma(s) are removed completely;

Surveillance



- **Patients who have**

- **more than 10 adenomas at 1 examination**

should be examined at a shorter (<3 y) interval, established by clinical judgment, and the clinician should consider the possibility of an underlying familial syndrome

Surveillance



- **Patients with**
 - **sessile adenomas**
 - **that are removed piecemeal**

should be considered for follow-up evaluation at short intervals (2-6 mo) to verify complete removal;

Hereditary nonpolyposis colorectal cancer



- Colonoscopy every one to two years beginning at age 20 to 25, or 10 years earlier than the youngest age of colon cancer diagnosis in the family (whichever comes first).

Familial Adenomatous Polyposis



- Colonoscopy every 12 months starting at around age 10 to 12 and continuing until age 35 to 40 if negative.

