Colonic Polyps and Polyposis Syndromes

Gastrointestinal polyp

A discrete mass of tissue
that protrudes into
the lumen of the bowel

Neoplastic Polyps

Benign (Adenoma)

- Tubular adenoma
- Tubulovillous adenoma
- Villous adenoma

Malignant (Carcinoma)

- Noninvasive carcinoma
  - Carcinoma in situ
  - Intramucosal carcinoma
- Invasive carcinoma (through muscularis mucosae)

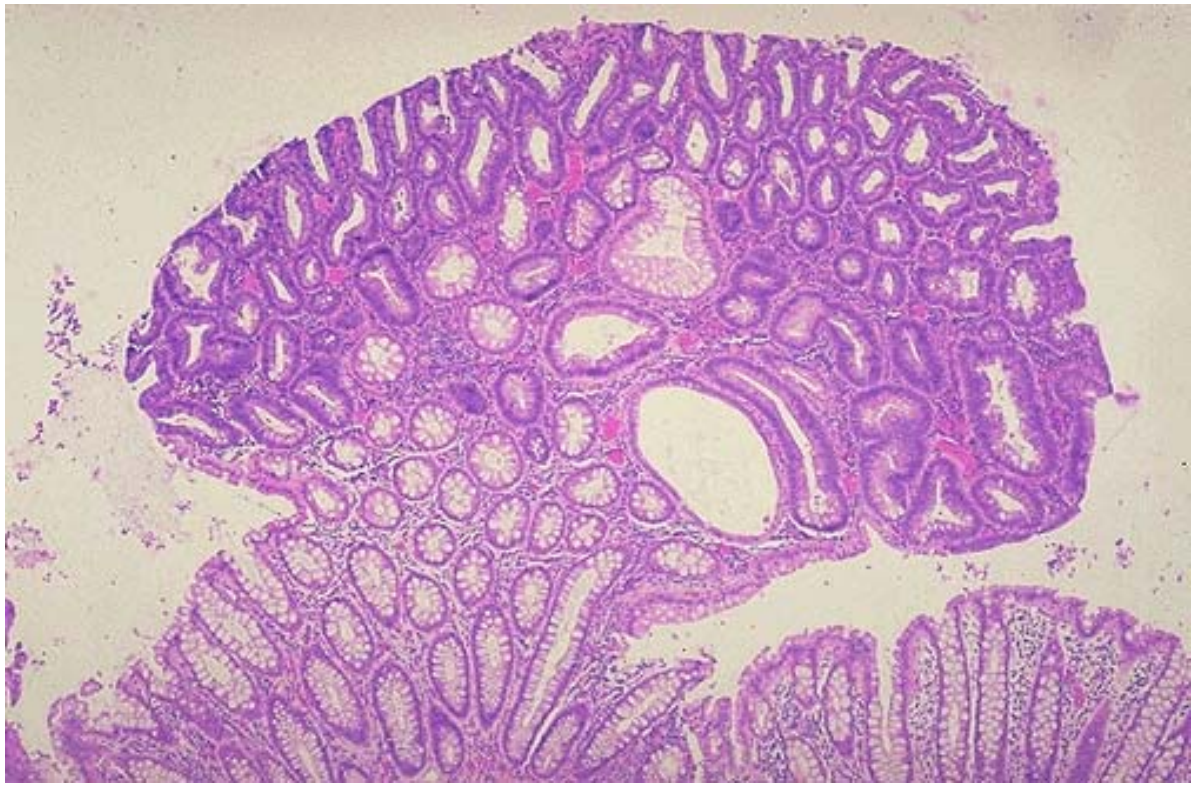
Non-Neoplastic Polyps

- Hyperplastic polyp (including serrated polyps)
- Mucosal polyp (normal mucosa in a polypoid configuration)
- Juvenile polyp (retention polyp)
- Peutz-Jeghers polyp
- Inflammatory polyp

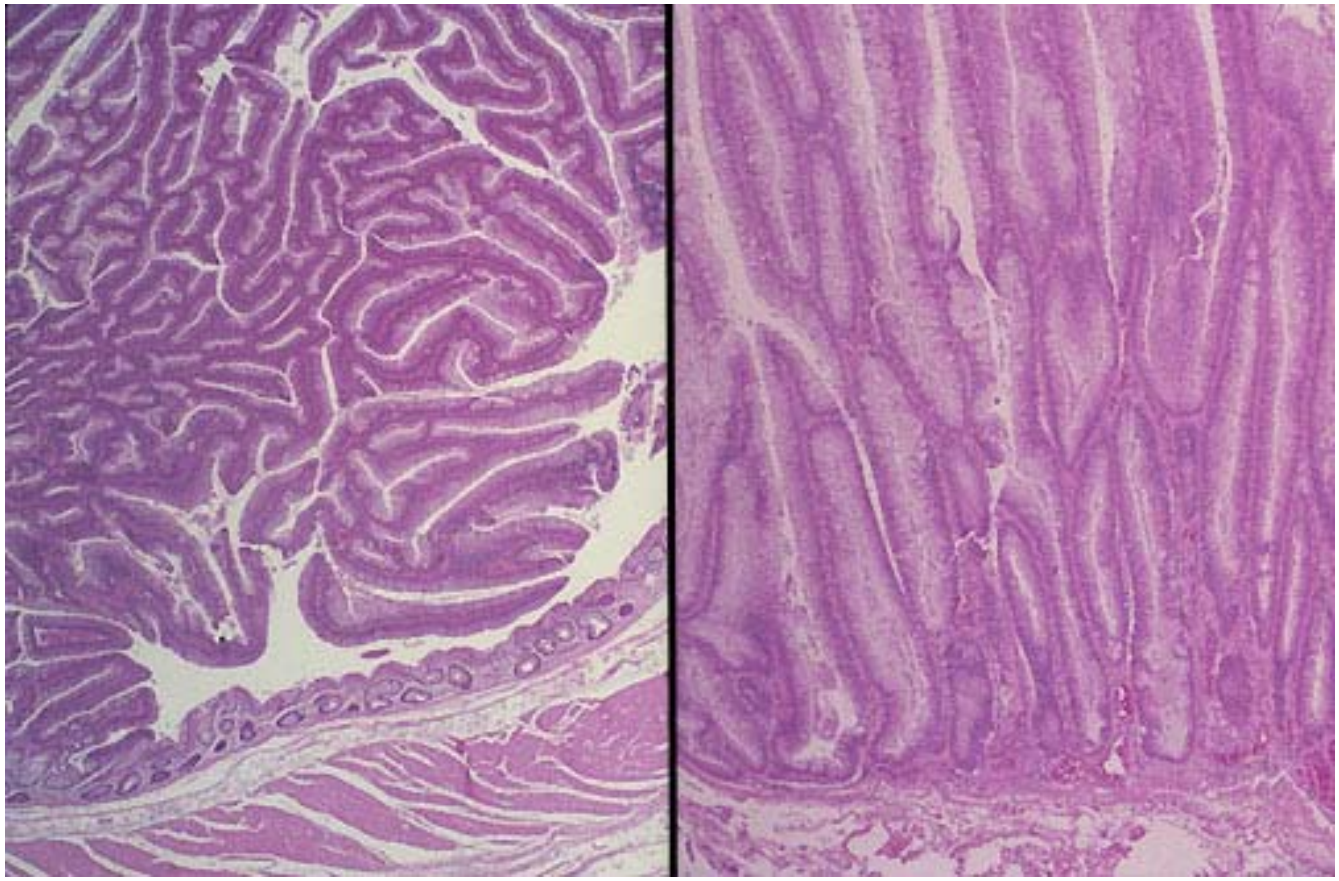
Submucosal Lesions

- Colitis cystica profunda
- Pneumatosis cystoides coli
- Lymphoid polyps (benign and malignant)
- Lipoma
- Carcinoid
- Metastatic neoplasms
- Other rare lesions

Tubular adenomas consist of branched, crowded glands arranged in a complex cerebriform pattern.



Villous adenomas consist of glands that are long, finger-like fronds typically projecting from the polyp stroma to the surface without much branching



Histologic Types of Adenomas and Their Features

TYPE OF ADENOMA	SIZE OF ADENOMA* (%)			DEGREE OF DYSPLASIA[†] (%)		
	<1 cm	***1-2 cm***	***>2 cm***	***Mild***	***Moderate***	***Severe***
Tubular	77	20	4	88	8	4
Tubulovillous	25	47	29	58	26	16
Villous	14	26	60	41	38	21

Serrated Adenomas

- Share features of both adenomatous and hyperplastic polyps.
- Characterized by colonic crypts with a saw-tooth, serrated configuration
- Resembling that of hyperplastic polyps
- Because of nuclear atypia, they are considered adenomas

Carcinoma in situ

- Characterized by intracryptal cell proliferation that leaves intact the basement membrane

Intramucosal carcinoma

- If a focus of neoplastic cells grows beyond the basement membrane and into the lamina propria of the mucosa
- Both carcinoma in situ and intramucosal carcinoma are noninvasive lesions without metastatic potential
- Because lymphatics are not present in the colonic mucosa above the level of the muscularis mucosae
- Both carcinoma in situ and intramucosal carcinoma be reported as “noninvasive carcinoma”

Malignant polyp

An adenoma in which a focus of carcinoma has invaded beyond the muscularis mucosae into the submucosa

- *Synchronous lesion* : An adenoma or carcinoma that is diagnosed at the same time as an index colorectal neoplasm
- *Metachronous* : Diagnosed at least six months later

Treatment

- Non Malignant Polyp:
- Total excision of a polyp is the only method of providing a thorough and accurate histologic diagnosis.
- Complete endoscopic resection
- For larger polyps, this can require piecemeal excision
- If a polyp cannot be completely excised after two or three endoscopic sessions, surgical therapy is recommended

Favorable and Unfavorable Features for Adverse Outcomes in Patients with Malignant Polyps

Feature	FAVORABLE	UNFAVORABLE
Degree of differentiation	Well or moderate	Poor
Invasion of veins or lymphatics	Absent	Present
Polypectomy margin	Clear or >2-mm margin	Involved
Invasion of submucosa of bowel wall	Absent	Present

- If none of these unfavorable risk factors is found, the patient is considered to have been cured by the endoscopic polypectomy
- Otherwise, surgical resection usually should be performed

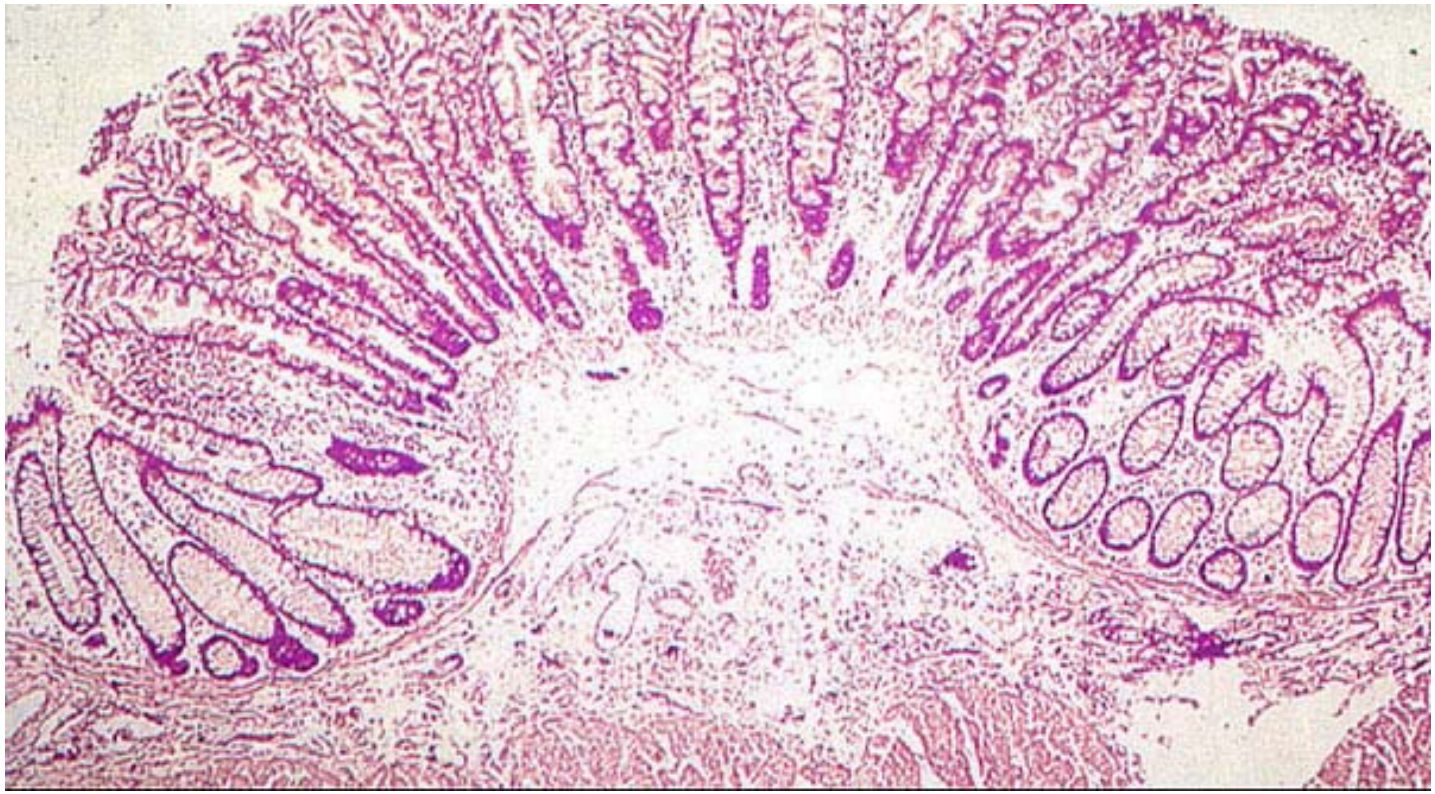
Surveillance Recommendations after Colonoscopic Polypectomy

Hyperplastic Polyps

- The most common non-neoplastic polyp in the colon
- Hyperplastic polyps usually are small; their average size is less than 5 mm and they seldom are larger than 10 mm

Histologic Features

- Microscopically, the colonic crypts are elongated and the epithelial cells assume a characteristic papillary configuration
- Elongated epithelial cells with nuclei that retain their basal orientation and demonstrate no atypia. The surface of the crypts assumes a serrated appearance.



Treatment

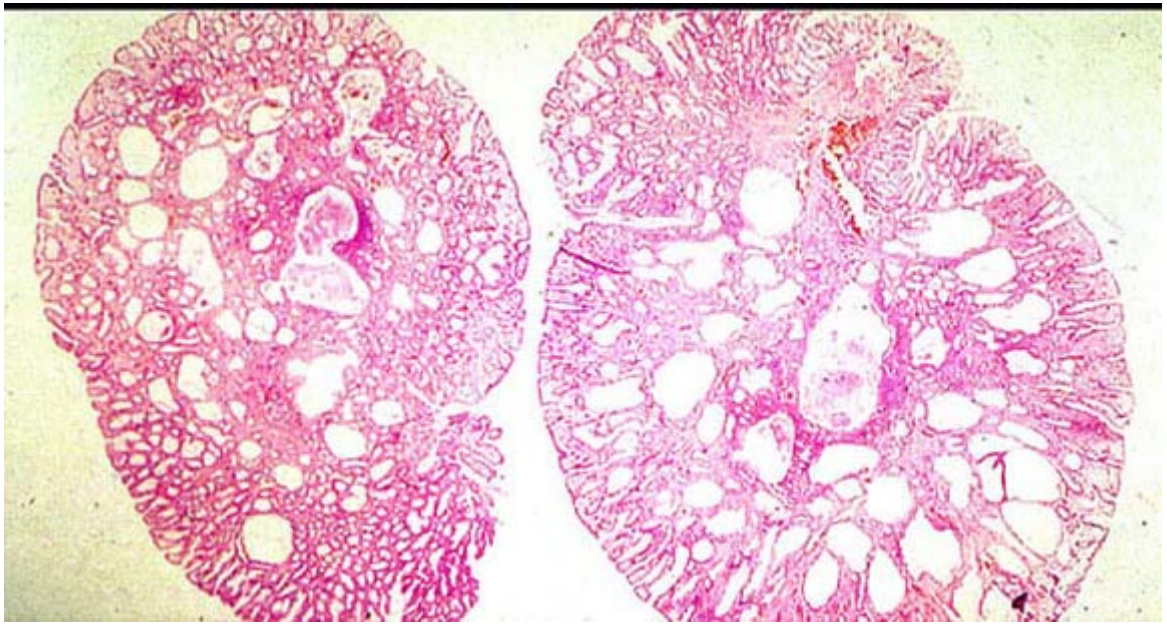
- Hyperplastic polyps remain small, usually are sessile, and seldom, if ever, cause symptoms
- In as much as they are not likely to give rise to cancer, little is gained by removing them, but because they cannot be distinguished from neoplastic or serrated polyps simply by gross examination, they usually are removed.

Juvenile Polyps

- The appearance of distended, mucus-filled glands, inflammatory cells, and edematous lamina propria has prompted some observers to call these lesions *retention polyps*

- Most common from ages one to seven years
- Juvenile polyps more often are single than multiple
- Usually are pedunculated, and tend to range in size from 3 mm to 2 cm.
- Because of the high likelihood of bleeding and prolapse, removal of juvenile polyps is suggested.

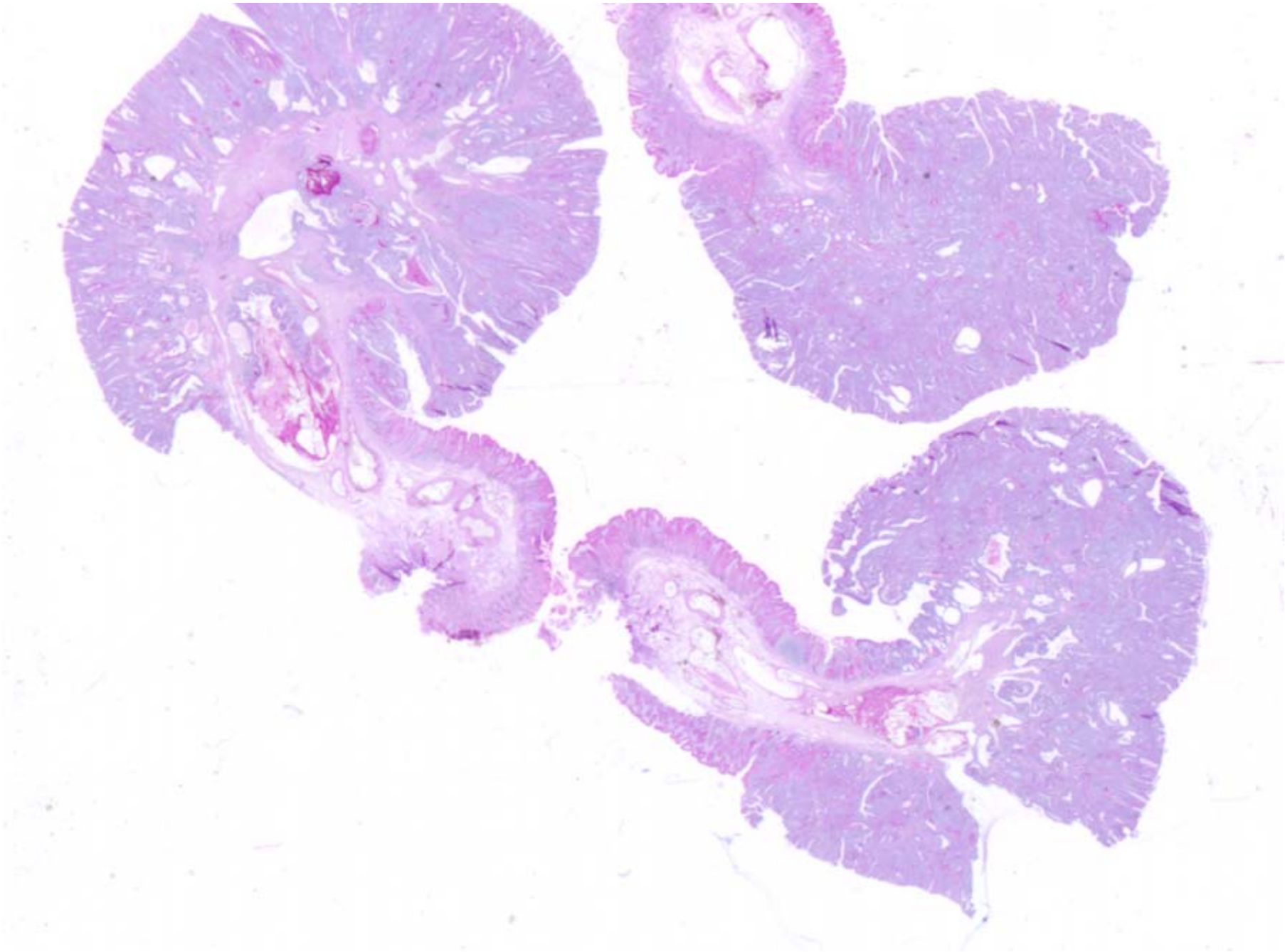
- Juvenile polyps have essentially no malignant potential when single and they tend not to recur.



Peutz-Jeghers Polyps

- Hamartomatous lesion characterized by glandular epithelium supported by an arborizing framework of well-developed smooth muscle that is contiguous with the muscularis mucosae

- These polyps almost always are multiple, and their distinctive appearance, in association with the extraintestinal manifestations, makes Peutz-Jeghers syndrome easily identifiable.



Classification of Gastrointestinal Polyposis Syndromes

Inherited Polyposis Syndromes		Noninherited Polyposis Syndromes
Adenomatous polyposis syndromes	Hamartomatous polyposis syndromes	Cronkhite-Canada syndrome
Familial adenomatous polyposis	Peutz-Jeghers syndrome	Hyperplastic polyposis syndrome
Variants of familial adenomatous polyposis Gardner's syndrome	Juvenile polyposis	Lymphomatous polyposis
Turcot's syndrome	PTEN hamartoma tumor syndromes Cowden's disease	Nodular lymphoid hyperplasia
Attenuated adenomatous polyposis coli	Bannayan-Ruvalcaba-Riley syndrome	
Familial tooth agenesis syndrome	Rare hamartomatous polyposis syndromes Hereditary mixed polyposis syndrome	
Bloom's syndrome	Intestinal ganglioneuromatosis and neurofibromatosis	
MUTYH polyposis (MYH polyposis)	Devon family syndrome	
	Basal cell nevus syndrome	

Classic FAP Colonic adenomas

- Thousands

- EXTRAINTESTINAL ABNORMALITIES

  Duodenal, periampullary adenomas
  Gastric fundic gland polyps
  Jejunal and ileal adenomas
  Ileal lymphoid polyps
  Mandibular osteomas
  Dental abnormalities

GENE MUTATION *APC* (usually truncated protein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