Lecture 10: Colonic Polyps

🔷 **What are they?**

- They are **mass lesions** protruding from the **mucosa into the lumen**.

🔷 **How do they appear?**

Due to defects in:

1. **Cell proliferation**
2. **Differentiation**
3. **Apoptosis** of **normal mucosa**

🔻 **Classifications:**

1. Non-neoplastic polyps:

A. **Hyperplastic** ➤ Most common (~90%)
B. **Hamartomas** →e.g., Peutz-Jeghers and juvenile polyps
C. **Inflammatory** (e.g., in UC)→Also called **pseudopolyps**

2. Neoplastic polyps → One of three types of **adenoma**:

Tubular	**Tubulovillous**	**Villous**
When villous component is **0–25%** Found in **80–86%**	Villous component is **25–75%** Found in **8–16%**	Villous component **(75%)** Found in **3–16%**

➡️ **Note**:

- **Villous** is the one with the **highest risk of malignancy**
  (Villous > Tubulovillous > Tubular)

🔴 **Adenomas:**

- Make up **2/3 of colon polyps**
- More common in **men**
- Mostly located in **left colon (87-89%)**
- Most are **<1 cm**
- **Distribution** is similar to **carcinoma**

⚠️ **Notes:**

- You would need **5 years** for a healthy colon to progress into **invasive carcinoma**
- **Polyp removal** reduces the **risk of cancer** Due to **colonoscopy and polypectomy**

❗ **Malignant potential of adenoma depends on:**

1. **Size**
2. **Histological type**
3. **Degree of dysplasia**

(⬆️ the dysplasia, ⬆️ the risk)

Table 9.2 Relation between type of adenoma and size of adenoma/degree of dysplasia

	Size of adenoma (%) [6]			Degree of dysplasia (%) [7]		
Type of adenoma	<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

It's determined according to the **degree of atypical cells**
➤ Classified into:

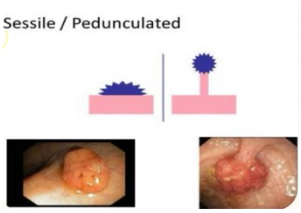
- **Low**, **moderate**, and **high grade**

🟥 High-grade dysplasia is **very similar to carcinoma**, **except** its **limited to epithelium**

✅ **Final note**:
The larger the polyp, the more the dysplasia.

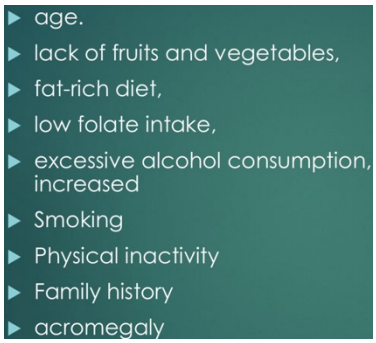
🔷 **Anatomical Classification of Polyps:**

- **Sessile**: Higher risk for malignancy
- **Pedunculated**: Lower risk



🔴 **Risk Factors:**

Same as **colorectal cancer**



⚠️ **High-Risk malignancy:**

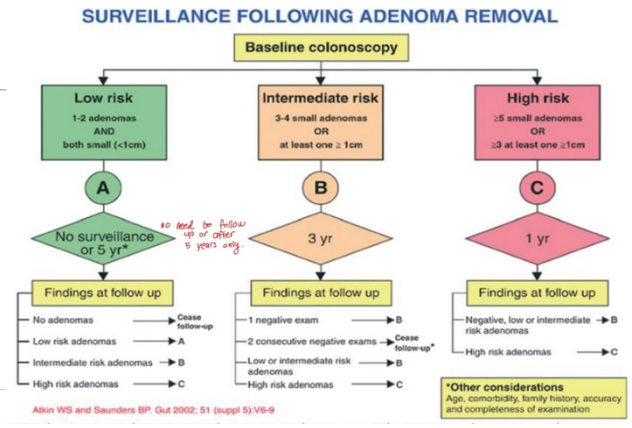
- **Type and Size** of polyp > 1 cm (30%) / 2cm villous (50%) / **villious adenoma > tubular**
- **Number** of polyps
- **Proximal location** has more villous types
- **Histology**: Villous > Tubulovillous > Tubular

Note: Annual conversion of adenoma to carcinoma:

- ~0.25%/year
- In 5 years: ~2.5%
- In 10 years : 8%

- In 20 years: ~24%

🔁 **Surveillance Following Adenoma:**



🔶 **FAP (Familial Adenomatous Polyposis):**

- **Autosomal dominant**
- Mutation in **APC gene**, on **chromosome 5**
- Hundreds of polyps in colon & duodenum Involved in 90% of cases
- Could also be found in stomach

Clinical Findings:

- **2nd and 3rd** decade onset
- Risk of malignancy = 100% if untreated

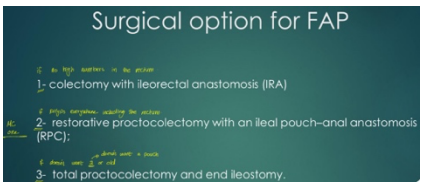
Diagnosis:

1. **≥100 polyps on colonoscopy**
2. **+ APC mutation** in 80% of pt
3. **20% have new APC mutations**

Clinical Surveillance:

1. at **age 13–15 do** Flexible sigmoidoscopy every year if **no polyps** skip to 20 to do colonoscopy
2. if **symptomatic** → do flex sig. or colonoscopy
3. Genetic testing if available if no → use **CHRPE screening** since 50% have it
4. If no adenoma at age 30 → unlikely to be FAP (exclude)

🩺 **Surgery (Prophylactic):**



- Since carcinoma could happen **after 10 to 20y of dx**
- **Proctocolectomy** (removal of entre colon + rectum)
- **+ IPAA** (Ileal Pouch Anal Anastomosis) → allow pt to pass stool NL → BEST OPTION
- **Sulindac** or **Celecoxib (NSAIDs and COX-2 inhibitors)** → **help shrinkage of polyp but doesn't remove it**
- **Duodenal polyps require upper endoscopy every 2y after 30**

- FAP has **extracolonic manifestations** too

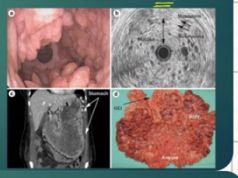
TABLE 26-1. Extracolonic features of FAP

System	Feature	Frequency (%
Upper gastrointestinal tract	Upper gastrointestinal adenomas	95
	Upper gastrointestinal carcinoma	5
	Fundic gland polyps	40
Connective tissue	Osteomas (especially jaw)	80
	Desmoids	15
Dental	Unerupted and supernumerary teeth	17
Cutaneous	Epidermoid cysts	50
Endocrine	Adrenocortical adenomas[4]	5
	Papillary thyroid carcinoma[5]	1
Hepatobiliary	Biliary tract carcinoma	<1
	Hepatoblastoma	<1
Central nervous system	CHRPE	75
	Tumors (especially medulloblastoma)	<1

Juvenile polyposis:

Juvenile Polyposis

- Juvenile polyps: hamartomas that lack smooth muscle histologically, having poor anchorage to bowel wall. Eventually amputate and disappear
- Around the age of 4, blood around stool.
- Multiple polyps in rectum , colon and stomach In 50%.
- Rare
- 50-200 polyps
- Risk of cancer 30-50%
- Autosomal dominant
- Treatment: polypectomy / colectomy



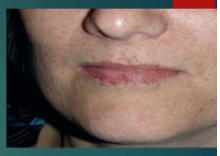
- This is a bright red, glistening pedunculated sphere ('cherry tumour')
- Present in infants and children and can stay into adult life.
- Patient present with bleeding, pain and prolapse during defaecation.
- polyp has no tendency to malignant change It has a unique histological structure with large mucus-filled spaces covered by a smooth surface of thin rectal cuboidal epithelium
- Treatment is excision

Advantages and disadvantages of screening modalities for asymptomatic individuals

	ADVANTAGES	DISADVANTAGES
Fecal occult blood testing (FOBT)	Ease of use and noninvasive Low cost Good sensitivity with repeat testing	May not detect most polyps Low specificity Colonoscopy required for positive result Poor compliance with serial testing Three successive stools required
Fecal immunohistochemical test (FIT)	Ease of use and noninvasive Low cost More sensitive and specific than FOBT Only one stool sample required	May not detect most polyps Colonoscopy required for positive result
Multitarget stool DNA	Ease of use and noninvasive More sensitive than FIT	May not detect most polyps Colonoscopy required for positive result Less specific than FIT
Sigmoidoscopy	Examines colon most at risk Very sensitive for polyp detection in left colon Does not require full bowel preparation (enemas only)	Invasive Uncomfortable Slight risk of perforation or bleeding May miss proximal lesions Colonoscopy required if polyp identified
Colonoscopy	Examines entire colon Highly sensitive and specific Therapeutic	Most invasive Uncomfortable and requires sedative Requires bowel preparation Risk of perforation or bleeding Costly
Double-contrast barium enema	Examines entire colon Good sensitivity for polyps >1 cm Examines entire colon	Requires bowel preparation Less sensitivity for polyps <1 cm May miss lesions in the sigmoid colon Colonoscopy required for positive result
Computed tomography colonography (virtual colonoscopy)	Noninvasive Sensitivity may be as good as colonoscopy	Requires bowel preparation Insensitive for small polyps Minimal experience and data Colonoscopy required for positive result

Peutz jaghers syndrome:

Peutz–Jeghers syndrome



- an autosomal dominant condition
- characterised by:
  - mucocutaneous pigmentation
  - gastrointestinal hamartomatous polyps.

Peutz followed the family for 87 years and the member of the family developed bowel obstructions and cancers

- increased incidence of stomach/ ovary/ Breast/ cervix / testicle / lungs
- causes intussusception or Bleeding