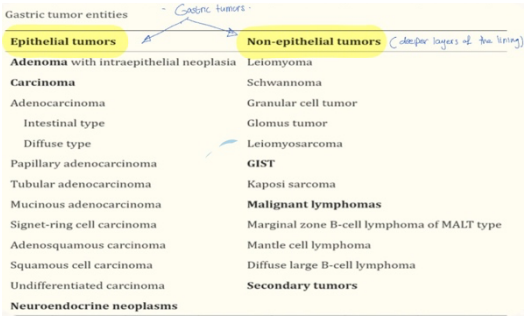
Lecture 3: Neoplasm of the Stomach



🔷 **General Note:**

- Gastric adenocarcinoma **>90%** of malignant lesions of stomach
- The symptoms range from **asymptomatic** to **bleeding**, **obstruction**, or **perforation**.
- To identify these lesions, you would need:
  - **Endoscopy** 🔍
  - **Histopathological examination** of the lesion and the surrounding mucosa.

🔴 **Gastric Polyps:**

- Found in **6%** of asymptomatic patients who undergo endoscopy (**found incidentally**).
- Types:
  1. **Fundic** (most common)
  2. **Hyperplastic** (~17%)
  3. **Adenomas** (~0.69%)
  4. **Inflammatory** (~0.1%)
- 2% are diagnosed as **"malignant polyps"**.
- 🔸 Note: **Hyperregenerative epithelium** can result in **development of hyperplastic polyps**.
  - ➤ We need to **examine the <u>whole</u> abdomen**

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1. Fundic polyps: FGP

- **Most common type.**
- Associated with:
  - Long-term **PPI therapy** (4x risk)
  - Gastrinoma (↑ gastrin levels)
  - **FAP (familial adenomatous polyposis)** and polyposis syndromes (MUTH-associated polyposis / gastric adenocarcinoma
  - proximal polyposis of stomach
- **Genetic factors :**
  - **<u>sporadic</u> FGP and those linked to <u>PPI</u> are at low risk**
  - **Who associated with <u>polyposis syndrome</u> → >70% have APC mutations that are linked to malignancy**
- Screening → **colonoscopy** is recommended in pt who have 1- >20FGP 2- <40 onset 3- duodenal adenomas 4- polyps outside the gastric corpus →suspect FAP.

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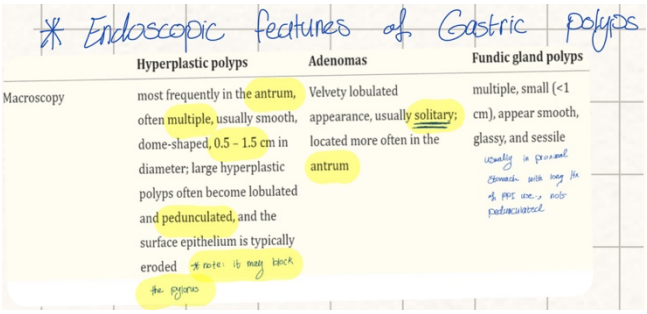
2. Hyperplastic polyps:

- Caused by **chronic inflammatory stimuli** (e.g., H. pylori) / Adjacent to **gastric ulcers** or **gastroesophageal or gastrointestinal anastomosis**.
- 🔷 Diagnosis:
  1. **Endoscopy**
  2. **Biopsy is required**
  3. **Larger polyps (>1cm)** and **pedunculated ones** have a **higher risk of malignancy**
  4. **Tx →** >0.5 cm should be **resected** via **endoscopic or histopathological examination**
  5. **H.pylori Should be eradicated**

🔵 **Gastric Adenoma:**

- Most frequent **neoplastic lesion** of the stomach.
- Most commonly found in the **distal stomach** (antrum) → unlike **FGP which is proximal.**
- Risk of malignancy = **8–59%** are assodciated with **gastric ca** so the whole abdomen should be examined
- Management → **Endoscopic resection** should be done **ASAP** with regular follow-up.



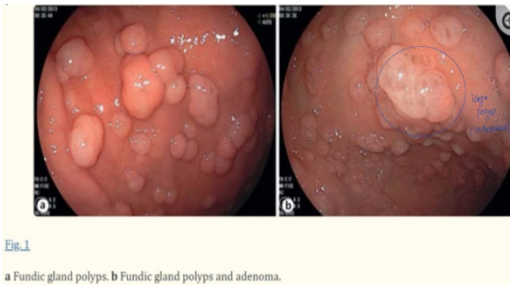
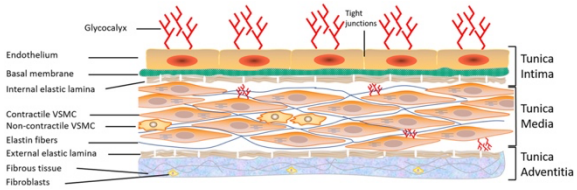


Fig. 1
a Fundic gland polyps. b Fundic gland polyps and adenoma.

🟣 **GIST (Gastrointestinal Stromal Tumor)**



General Characteristics:

- GIST = **mesenchymal tumor** (not epithelial)
- Typically present →Most common **subepithelial neoplasm** of the stomach.
- **GIST is the most prevelent entity**
- Other mesenchymal tumors (less frequent + significant) = **leiomyoma**, **leiomyosarcoma**, **schwannoma**

🔶 **epidemiology:**

- **2.2%** of **Malignant cancer** tumors with **non gender prefrences**
- **Peak age: 60s–80s**
- Distribution:
  - Stomach (60–70%)
  - midgut (20–30%)
  - Esophagus and lower GIT (10%)

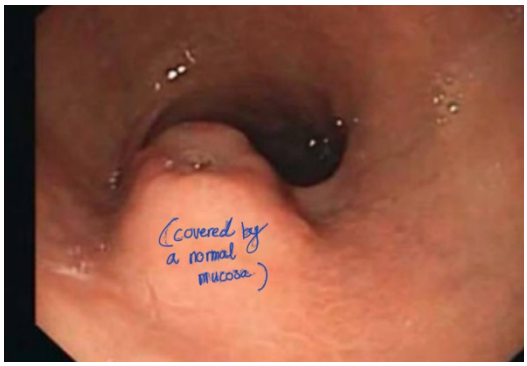
🧬 **Histological & Genetic Features:**

- **Histology**: Spindle cell, epithelioid, or rarely pleomorphic
- **They arise from cells of cajal(pacemaker)**
- **Genetics**:
  - KIT mutations
  - PDGFRA receptor tyrosine kinase
  - Less commonly: SDH-mutations, BRAF, NF1

👅 **Diagnosis:**

- Based on: (together)
  - Conventional pathology
  - Immunohistochemistry stain (IHC)
- IHC markers:
  - ✅ CD117 (c-KIT) → 95%
  - ✅ DOG-1 → useful in dx
- ⚠️ Useful in diagnosing when KIT-negative GIST

⚕ **Clinical Considerations:**



- GIST spreads **locally** and does **not involve lymph nodes**
- **Chance of recurrence** or **resection decision** depends on:
  - Tumor **size / site**
  - **Mitotic number**

- If <1 cm and asymptomatic → can **leave it and observe**

⚠️ **Complications:**

1. **Obstruction**
2. **Bleeding**
3. **Perforation**

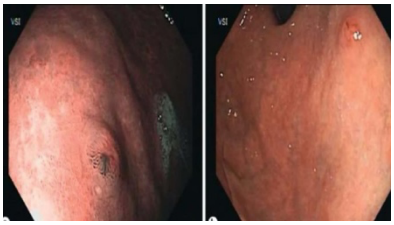
NET: Neuroendocrine Tumors

🔷 **1. Incidence:**

- NETs are **on the rise**, with **gastric NETs** accounting for **6–23%** of all GI NETs.

🔷 **2. Causes of increased incidence:**

- Unclear whether it's due to:
  - True increase in cases
  - Or ↑ (esophagogastroduodenoscopy)



🔷 **3. Clinical course:**

- Most are **asymptomatic and benign**
- Some can become **aggressive** and resemble **gastric cancer**

🔷 **4. Malignant potential?**

- All have **malignant potential**
- In the stomach →3 **distinct type** of neuroendocrine neoplasm Differentiated by **stage and histology**

Features of gastric NETs according to [20]

Feature	Type 1	Type 2	Type 3
Proportion among gastric neuroendocrine neoplasms	70 – 80%	5 – 6%	14 – 25%
Macroscopic aspect	often small (<1 – 2 cm), 78% polypoid, 65% multiple	often small (<1 – 2 cm), polypoid and multiple	unique, large (>2 cm), polypoid, ulcerated
Pathological differentiation	often NET G1	NET G1 –G2	NEC G3
Proportion of metastases	2 – 5%	10 – 30%	50 – 100%
Associated conditions	chronic atrophic gastritis	gastrinoma/MEN – 1	none

🔷 **5.secondary neoplasia of the stomach** :

- Prevalance → gastric **mets** = rare (1.3-1.7%) of cancer pt
- Common origins → **breast cancer** / **melanoma** / **lung cancer**

Lymphoma:

🔴 **1. Definition:**

- Can arise from the **gastric wall** or **adjacent lymph nodes**

🔴 **2. Prevalence:**

- GI lymphoma = **4–18%** in the western world
- **~25%** in the **Middle East**
- **Stomach** is the most common in the West
- **Midgut** is most common in the **Middle East**

🔴 **3. Age of onset:**

- Typically in the **5th decade**
- No gender predominance

🔴 **4. Risk Factors:**

- **H. pylori** (Leading cause) → 90% in **MALT lymphoma**
- **Immunosuppression** (e.g., **HIV**) → ↑ risk (~23%)

🔴 **5. Immunohistochemistry:**

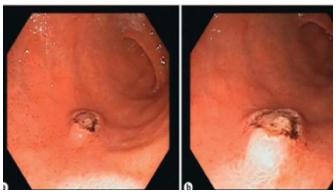
- **Positive** for **B-cell markers** (CD19 / CD20 / CD22)
- **Negative** for **CD5 / 10 / 38 / IgD**

🔶 **Types:**

- **High-grade** = majority → **high grade b cells**
- **Low-grade** = **B-cell MALT** (the **only low-grade one**)

🔵 **MALT Lymphoma:**

MALT lymphoma



- **Symptoms**:
  - Abdominal pain
  - Nausea / vomiting
  - Signs of bleeding
  - Palpable mass if large
- **Treatment**:
  - **Early stage** → Regresses after **H. pylori therapy**
  - **Advanced stage** → **Radiotherapy**
- High-grade lymphomas (Mantle cell / Diffuse B-cell / Burkitt lymphoma) → All treated with **chemotherapy**

🧬 **Genetic risk:**

- t(11;18), t(q21;q21)
  → Associated with **treatment failure**
  → And **transformation into diffuse large B-cell lymphoma**
- **Surgery** only for complications:
  - **Bleeding**
  - **Perforation**

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Topic	High-Yield Surgical Exam Points
Gastric Adenocarcinoma	• >90% of malignant gastric lesions • Can present with **bleeding**, **obstruction**, or **perforation** – important complications surgeons focus on
Gastric Polyps	• **Fundic Gland Polyps** → PPI use, FAP → screen for FAP if: 1) >20 polyps 2) <40 age 3) duodenal adenoma 4) polyps outside fundus
Gastric Adenoma	• Associated with **malignancy** (8–59%) → full abdominal exam required • Must be **resected ASAP** with follow-up
GIST	• **Most common subepithelial neoplasm** • From **Cajal cells** (pacemaker cells) • Spreads **locally**, **no lymph node involvement** (unique among gastric tumors!) • Important complications: **bleeding**, **obstruction**, **perforation** • Diagnosis: **CD117 (KIT)**, **DOG-1**
NET (Neuroendocrine Tumors)	• All have **malignant potential** • Can be **asymptomatic or aggressive** like gastric ca
Secondary Neoplasms	• **Rare** (1.3–1.7%) • MC origins: **breast**, **melanoma**, **lung**
Lymphoma (especially MALT)	• MC in stomach (West), **midgut in Middle East** • **H. pylori → 90% of MALT** • Treated with **antibiotics (early stage)** • Surgery **only for**: **bleeding** or **perforation**