Gastric Tumours

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Objectives

- Types
  - Incidence
  - Risk factors (& prevention)
  - Pathology: Gross, microscopic, spread, staging, comp.
  - Cl. Picture: Symptoms, signs
  - Diagnosis: DD, investigations
  - Treatment
  - Prognosis
- Less common types
- Benign neoplasms (polyps)
- Summary
GASTRIC TUMOURS

Types:

- Malignant:
  - Adenoca.: 90-95% of malignant gastric neoplasms.
  - Others:
    - lymphoma 1-5%,
    - leiom./GIST 2%,
    - carcinoid 1%,
    - sq. cell ca. 1%

- Benign:
  - Polyps
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Incidence:

- The 3\textsuperscript{rd} most common cause of cancer-related death in the world.
- Highest in: Japan, China, Russia, Chile, Finland.
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Risk Factors:
- Gender, age, genetics
- Diet, smoking
- H. pylori,
- Atrophic gastritis: Pernicious anemia, Achlorhydria,
- Peptic ulcer,
- Lye ingestion,
- Adenomatous polyp.
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Prevention:

- According to WHO recommendations:
  - Fresh vegetables and fruits
  - Vitamin C
  - Aspirin
  - H. pylori eradication
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Gross Pathology:

Sites:

- Approximately 40% of cancers develop in the lower part,
- 40% in the middle part,
- 15% in the upper part ( ),
- about 10% involve > 1 part
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Morphology:

Early Gastric Cancer:
Confined to mucosa and or submucosa, ± LNs

Type o
- Type o-I : Protruded
- Type o-II : Superficial (a,b,c)
- Type o-III: Excavated

Mostly well differentiated, good prognosis (90% 5y)
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Morphology:

Advanced Gastric Cancer:

Bormann’s classification:

Type I : Polypoid
Type II : Ulcerative
Type III : Ulcerative infiltrative
Type IV : Diffuse infiltrative (Scirrhous carcinoma, linitis plastica)
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Morphology (cont.):

**Advanced Gastric Cancer:**

**Japanese Classification:**

- Type I: polypoid tumour, sharply demarcated.
- Type II: ulcerated, sharply demarcated.
- Type III: ulcerated, infiltrating.
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Microscopic Pathology:
Lauren’s Classification:

- Histologic:

<table>
<thead>
<tr>
<th>Intestinal (54%)</th>
<th>Diffuse (32%)</th>
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<tbody>
<tr>
<td>well diff. (glandular element)</td>
<td>poorly diff. (signet ring)</td>
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<tr>
<td>environmental</td>
<td>Familial, Bl. Group A</td>
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<td>More in older pt., men</td>
<td>more in younger pt., women</td>
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<tr>
<td>Hematogenous spread</td>
<td>Lymphatic &amp; local spread</td>
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- H. pylori infection initiates a sequence (**Correa’s cascade**): chronic non-atrophic gastritis → atrophic gastritis → intestinal metaplasia → dysplasia.

- Undeterminate (15%).
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Spread:
- **Direct:** gastric wall, adjacent organs
- **Peritoneal (transcoelomic) spread:** Krukenberg’s tumour, peritoneal nodules, ascites, Sister Mary Joseph’s nodule, Blumer’s shelf
- **Lymphatic spread:** regional LNs, Virchow’s (Troisier’s sign)
- **Blood spread:** liver metastasis

Complications:
- Obstruction, bleeding, perforation
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**Staging:**

**TNM:**

**Tumour:**
- T1: limited to mucosa/subm.
- T2: sup. invasion in musc.
- T3: deep invasion of musc.
- T4: reaching serosa

**LN:**
- N0, N1, N2, N3

**Distant metastases:**
- M0, M1
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Cl. Presentation:
- Early: usually asymptomatic
- Vague epigastric pain, dyspepsia
- Fullness, decreased appetite
- Nausea/vomiting
- Unexplained wt. loss, anaemia, asthenia
- Dysphagia,
- Hematemesis/melena, unexplained anaemia
- Metastasis
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Cl. Presentation (cont.):

Ph. Ex.:

- Epigastric mass,
- Sister Joseph’s nodule,
- Ascites,
- Virchow’s LNs (Troisier’s sign),
- Blumer shelf (PR).
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Diff. Diag.:
• Other causes of dyspepsia
• Benign gastric ulcer
• Other gastric tumours
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Investigations:

Lab:
- Tumour markers:
  - CEA (↑ in 45-50%), CA19-9 (↑ in 20%).
- FOB
- CBC: Anaemia is common

Radiology:
- Barium meal examination (not commonly used)
- CXR, CT (abdomen, pelvis), Upper GI endoscopy:
- Diag. Laparoscopy.

Laparoscopic evaluation of metastasis.
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Endoscopy:

- Biopsy, U/S (endo.)
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**Treatment:**
- Endoscopic mucosal resection (EMR).
- Gastrectomy:
  - Distal lesions: Subtotal gastrectomy (85% + omentum), Roux-en-Y GJ.
  - Total gastrectomy + splenectomy / pancreatectomy.
  - Esophago-gastrectomy for lesions at the cardia.
- Resection of LNs (D2).
- Periop. Chemoth./radioth.
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Palliation:
Relief of obstructive symptoms:
- Stenting,
- bypass,
- chemoradiation
Prognosis:
The 5 y survival improved partially in Western countries
5-y survival ≤ 60%

Prognostic factors:
• Grade of differentiation.
• Stage of disease.
• General condition of the patient
Gastric lymphoma (5%)

- Most common primary GI lymphoma (increasing).
- B-cell derived. Arising from MALT (MALTOMA).
- Presentation: Pain, wt. loss, bleeding (perf., obst. are uncommon).
- CT is most diagnostic, BM aspirate.
- Endoscopy: diffuse mucosal thickening, sup. ulceration.
- Gastrectomy is the best ttt (better prognosis than adenoca.)
- Chemotherapy for systemic disease.
- *H. pylori associated lymphoma may regress or disappear after H. pylori eradication.*
Gastro-intestinal Stromal Tumour (GIST)

- Most of these cases were previously diagnosed as leiomyoma/leiomyosarcoma.
- Arises from intercalated cells of Cajal.
- The stomach is the commonest organ affected.
- Small tumours are usually benign, larger ones are malignant.
Gastro-intestinal Stromal Tumour (GIST)

- Bleeding is the commonest presentation (ulceration).
- Larger tumours present with dysphagia, wt. loss, anemia, palpable mass.
- Characteristic appearance on endoscopy (Cervix appearance), biopsy.
- CT: diagnostic.
- Resection is the best therapy.
- Chemotherapy (Imatinib) is effective.
Gastric Carcinoid

- Arise from APUD cells of the GI endocrine system.
- 50% arise in the appendix, and most of the remainder arise in the SI.
- Unlike app. carcinoid, they usually spread locally and hematogenously (liver).
- Secrete serotonin, and cause carcinoid syndrome (flushing, hypotension, asthma, diarrhea).
- Urinary 5-HIAA is a diagnostic marker.
- Treated by resection along with LNs.
Gastric Polyps

Most common: *hypertrophic polyps*
- Single or multiple, anywhere, < 1.5 cm, never turn malignant.

Most dangerous: *Adenomatous polyps*
- Rare, usually single, large, asymptomatic.
- May turn malignant.
- Treated by endoscopic excision.
Summary:

- Adenoca. 95% of gastric malig., more common in certain areas due to environmental factors.
- More common distally, but prox. tumours on the rise.
- Can be classified into sup. (M/Sm), or deep; intest. Or diffuse (Lauren’s class.)
- Presents with vague, dyspeptic, obst., sympt., mass or metastases.
- Diag. by endos., biopsy, or radiol.
- Ttt: endosc. resection, surg. (radical/palliative), chemorad., stent (obst.)
- H.pylori erad., healthy diet, vit. C, & aspirin can have a protective effect.
Summary (cont.):

- Gastric lymphoma arises from MALT cells, can be part of systemic dis., or can be due to H. pylori.
- GIST tumours arise from cells of Cajal, and can be B. or M.
- Gastric carcinoids arise from endoc. cells, secrete serotonin, can cause carcinoid synd., detected by 5-HIAA.
- Benign polyps may arise due to different reasons; commonest are hypertrophic polys, adenom. polyps can turn malig.
THANK YOU