

GASTRIC CARCINOMA

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Gastric malignancies

- | | |
|----------------------|----------|
| 1 Gastric carcinoma. | 90 - 95% |
| 2 Lymphoma. | 4% |
| 3 Carcinoids | 3% |
| 4 mesenchymal tumors | 2% |
- gastro intestinal stromal tumor (GIST)
 - leiomyosarcoma
 - schwannoma

Etiology & pathogenesis

Environmental factors

Infection by H.pylori

All about junk preserved food & lack of fresh fruits & vegetables.

- DIET

Nitrites derived from nitrates.(water and preserved food)

Benzopyrene(carcinogen)

Vitamin C, A, E works as antioxidants

- Low socioeconomic status.
- Alcohol and cigarette smoking no conclusive evidence.

HOST FACTORS

- Chronic gastritis
Hypochlorhydria favours colonisation of H.pylori
Intestinal metaplasia –precursor lesion.
(now a days decrease incidence due to decrease prevalence of H.pylori)
- Partial gastrectomy.
Favors reflux of bilious, alkaline intestinal fluid.
- Gastric adenoma.
- Barrett esophagus. Increased risk of gastroesophageal junction tumor.

GENETIC FACTORS

Slightly increased risk with blood group A.

Family history of gastric carcinoma.

Hereditary nonpolyposis colon cancer syndrome.

Familial gastric carcinoma syndrome

E-cadherin mutation.

CHAIN OF EVENTS

- H.pylori infection.
- Chronic gastritis
- Chronic atrophic gastritis.
- Intestinal metaplasia.
- Dysplasia.
- Adenocarcinoma.

MOLECULAR MECHANISM

Multiple genetic alteration.

Mutations in TP53 (in both type gastric carcinoma)

Microsatellite instability in several genes.

Loss of function mutation of tumor suppressor gene CDH1 (encodes for E-cadherin)

loss of E-cadherin is a key step in the development of diffuse gastric carcinoma.

BRCA2 mutations- diffuse gastric carcinoma

MORPHOLOGY

- Localization.

| | |
|---------------------|-----------|
| Pylorus and antrum. | 50% - 60% |
| Cardia | 25% |
| Other areas | 15% - 25% |
| Lesser curvature | 40% |
| Greater curvature | 12% |

Favored location is lesser curvature of antropyloric region.

CLASSIFICATION

BASED ON

- 1 Depth of invasion.
- 2 Macroscopic growth pattern.
- 3 Histologic subtype.

1 Depth of invasion:

- Greatest impact on clinical outcome.

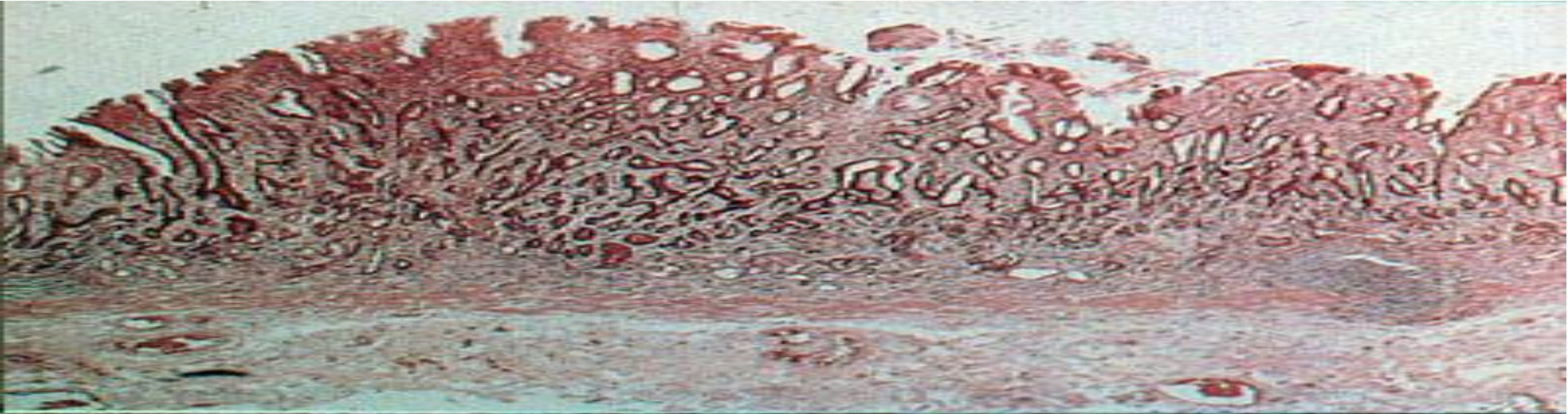
1 Early gastric carcinoma.

Lesion confined to mucosa and submucosa with or without perigastric lymphnode metastasis.

endoscopic mucosal resection (EMR) for early gastric cancer

It has better prognosis.

Early gastric carcinoma



Advanced gastric carcinoma.

Neoplasm extended below submucosa into muscularis - perhaps spread more widely.

All cancer begin as early lesions which precede development of advanced lesion.

2. Macroscopic growth pattern:

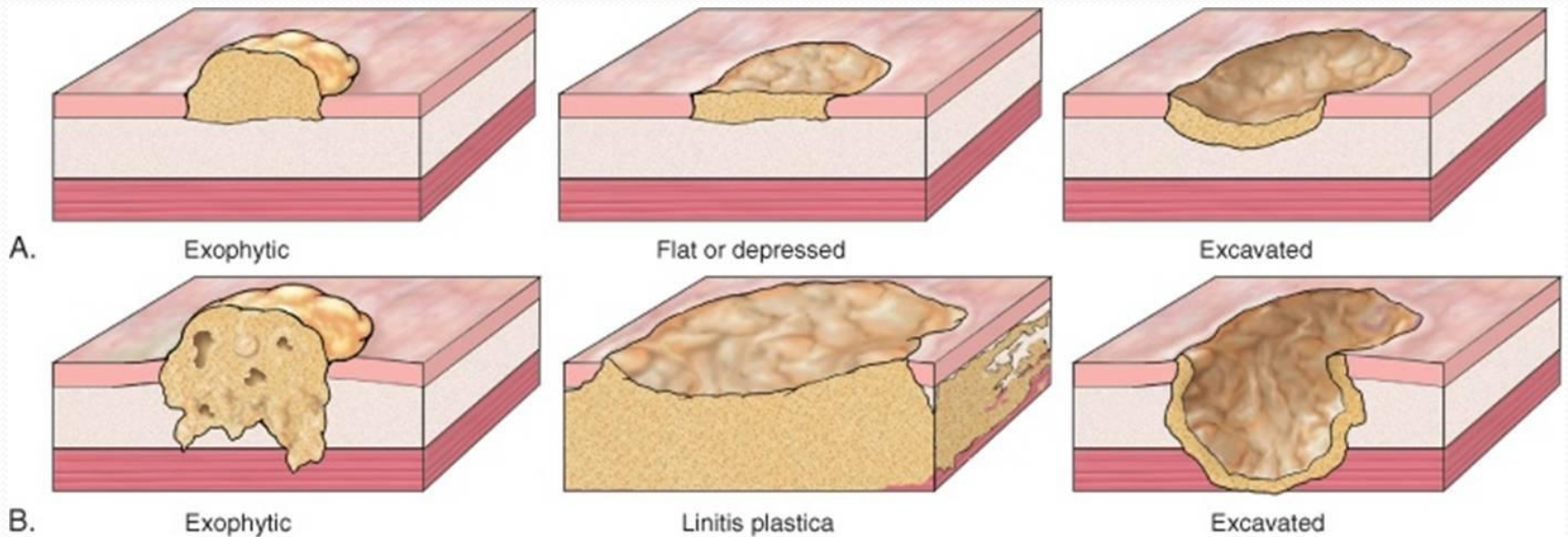
Evident at both early and advanced stages.

Exophytic-protrusion of tumor mass in lumen.

Flat or depressed-no tumor mass is visibly obvious.

Excavated shallow or deep ulcer.

Different macroscopic types (early & advanced)



3 Histologic subtype:

- Adenocarcinoma.
 - Papillary adenocarcinoma.
 - Tubular adenocarcinoma.
 - Mucinous adenocarcinoma.
- Signet ring carcinoma.
- Undifferentiated carcinoma.
- Adenosquamous carcinoma.

- lymphoepithelioma-like carcinoma
- hepatoid carcinoma with or without α -fetoprotein (AFP) production
- choriocarcinoma
- sarcomatoid carcinoma
- , parietal cell or oncocytic carcinoma,
- micropapillary carcinoma,
- mucoepidermoid carcinoma,
- chief cell carcinoma,
- Paneth cell carcinoma
- (Important due to different prognosis & therapy)

Laurens classification.

- 1 Intestinal variants
- 2 Diffuse variants.

1. Intestinal variants:

Expansile growth pattern.

More common pattern.

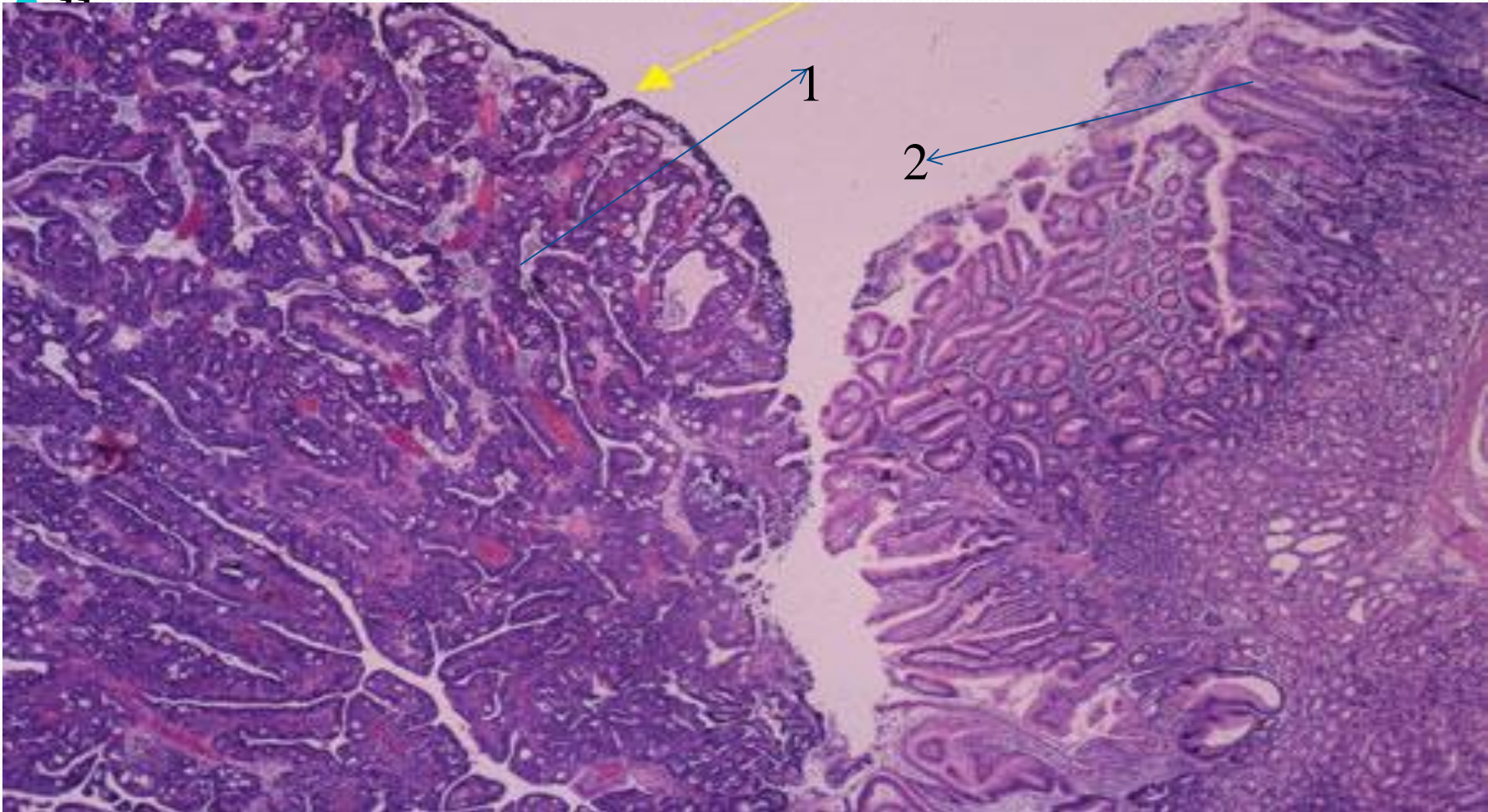
Forms bulky tumors

Glandular structures

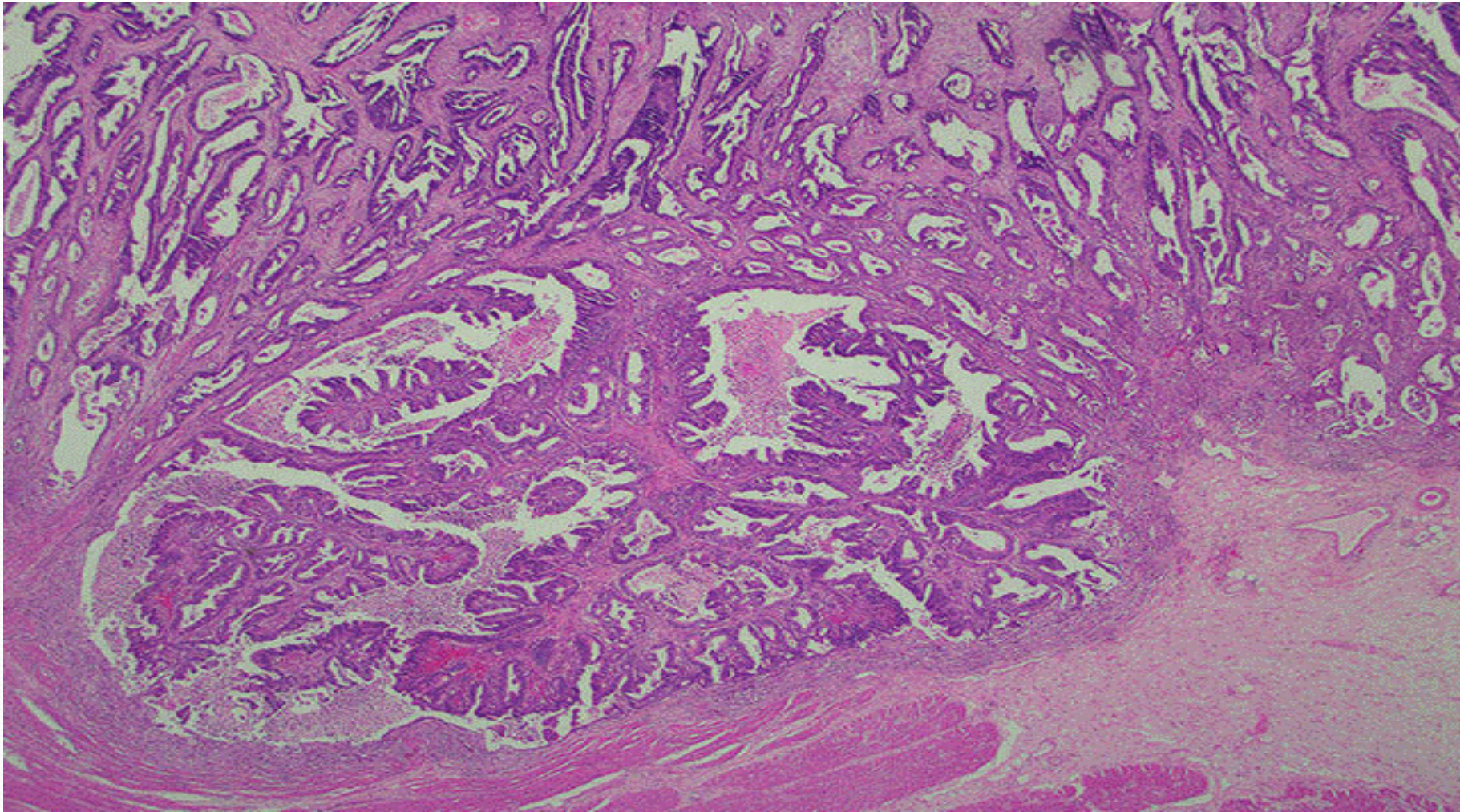
exophytic mass or ulcerated tumor

Cells contain apical mucin or mucin in the glandular lumina

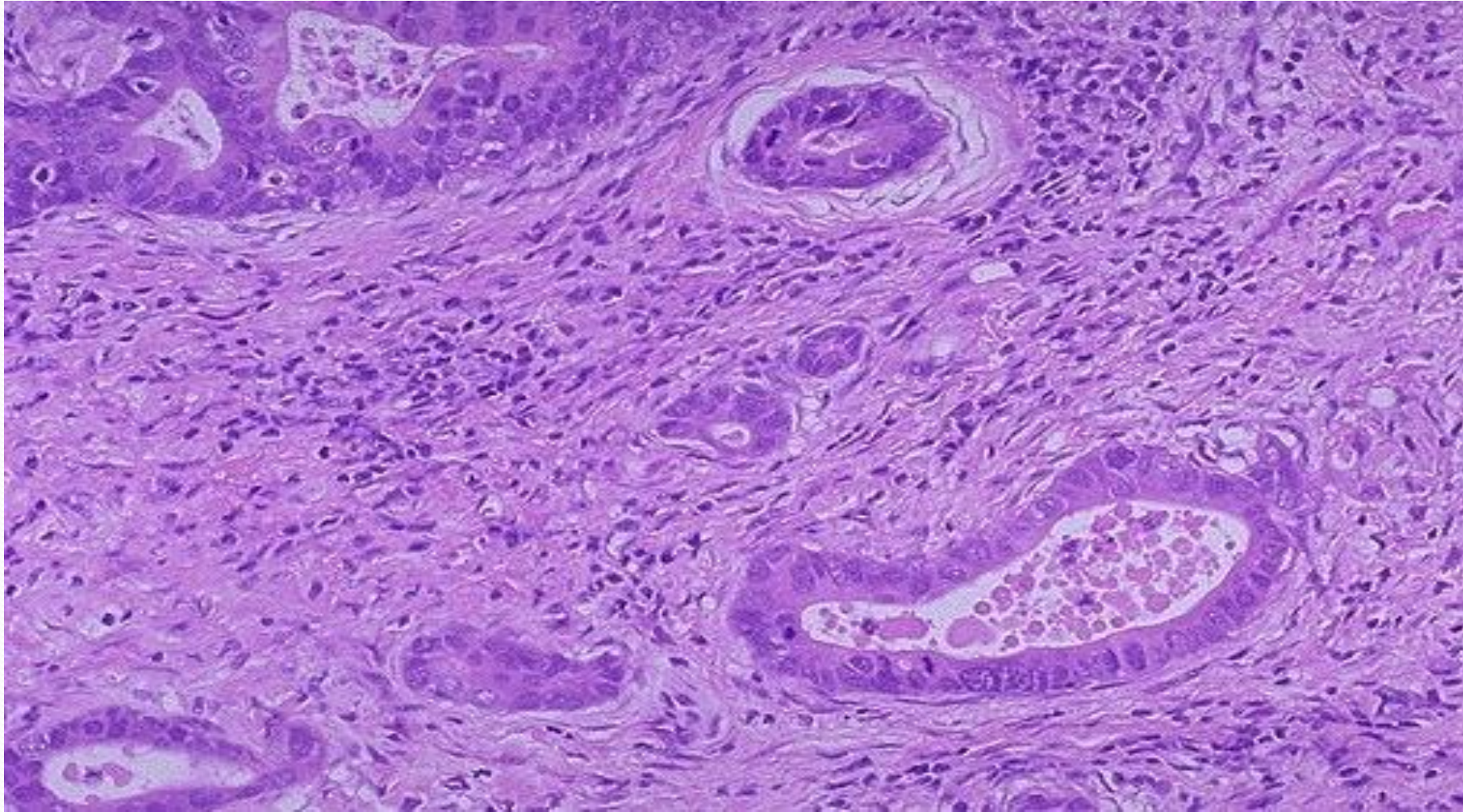
INTESTINAL TYPE - ADENOCARCINOMA



INTESTINAL TYPE - ADENOCARCINOMA



HIGH POWER - ADENOCARCINOMA



2. In diffuse variant:

Composed of gastric type mucous cells.

Infiltrative growth pattern.

Signet ring cells (intracellular mucin
pushing nucleus aside)

Discohesive cells (E- cadherin loss)

No glandular structures

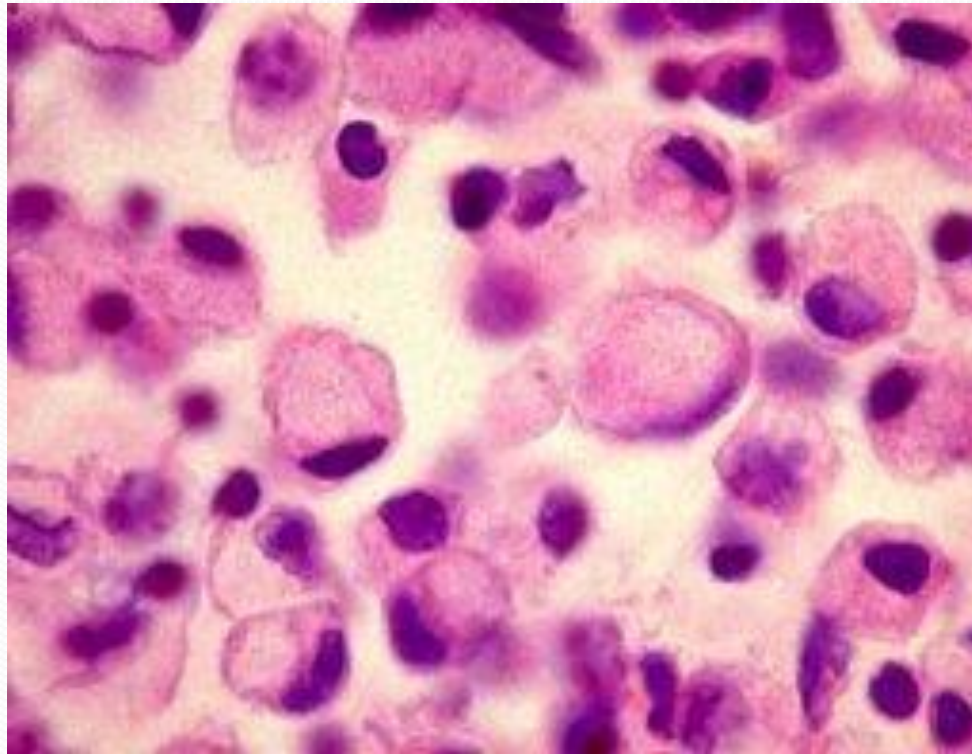
Cells are single or in small clusters.



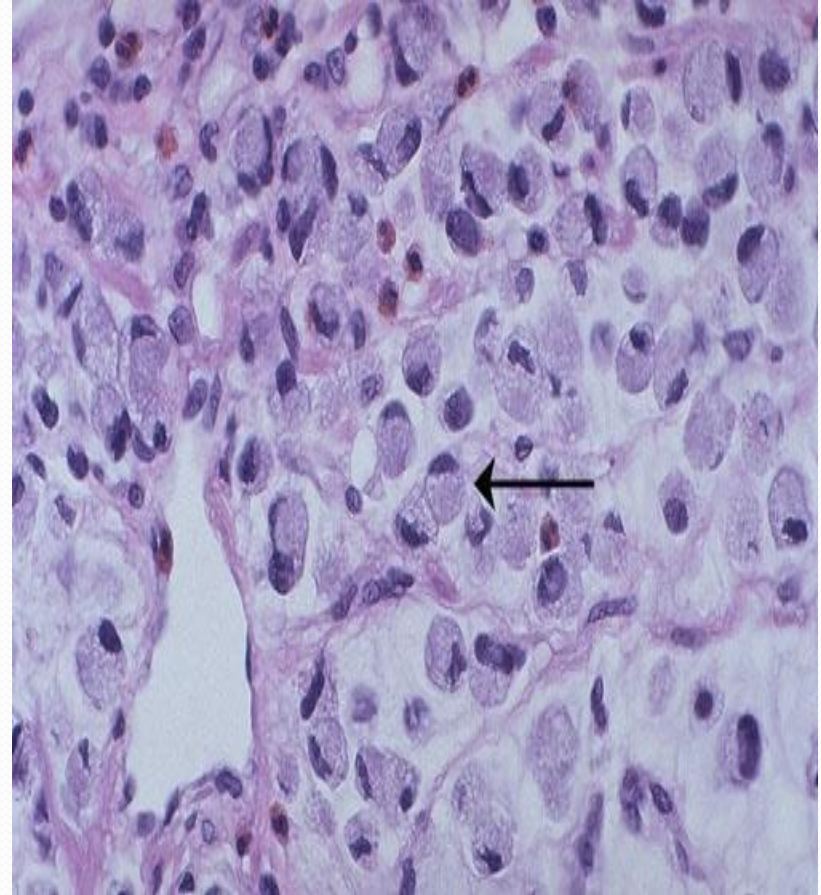
Mucin lakes may be present (both type)

Mass may not be found but thickening of the wall.

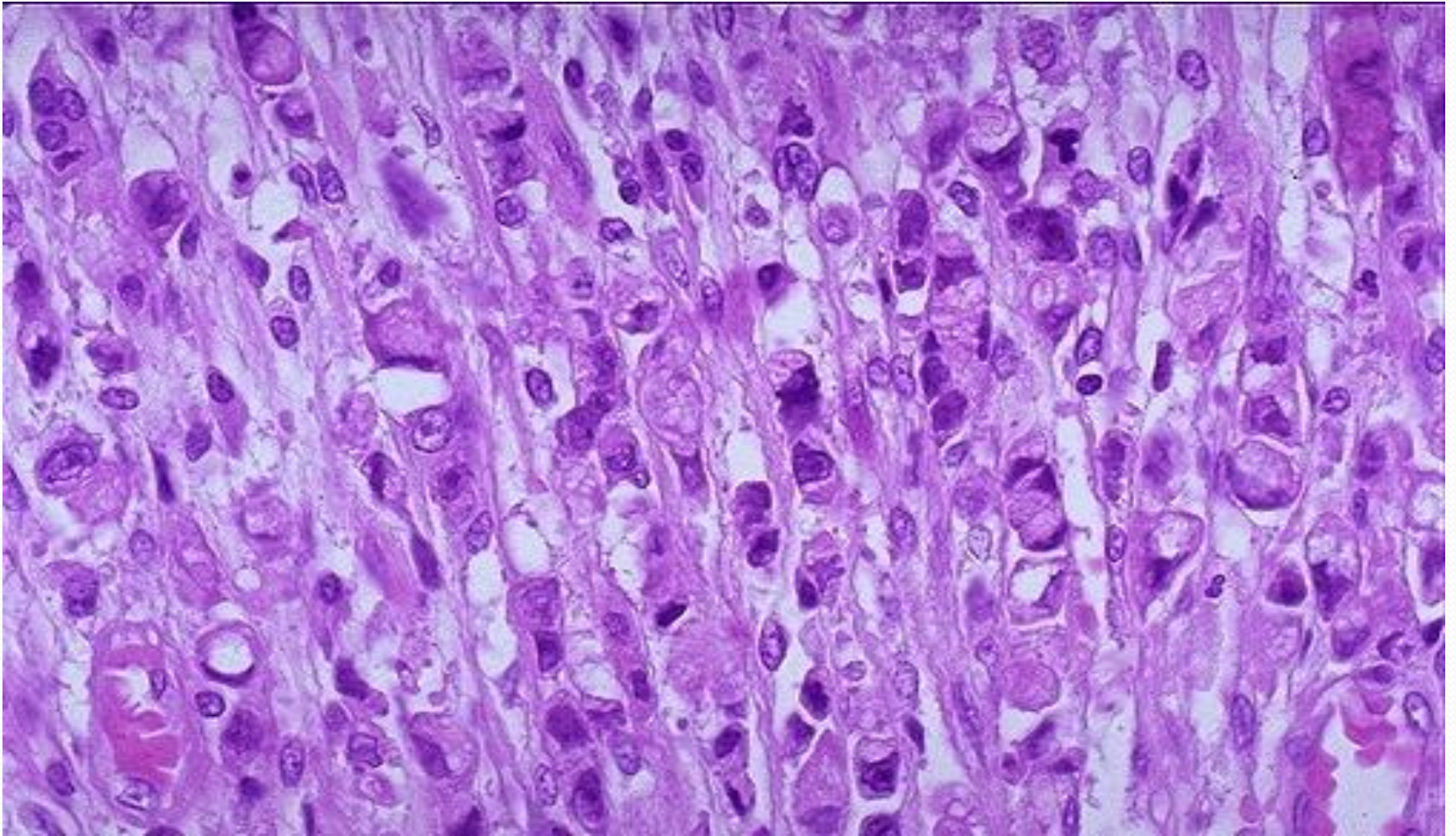
When large areas are involved, diffuse thickening of wall imparts leather bottle stomach known as linitis plastica.



signet ring cell



signet ring cell



Comparison of two histologic variants :

Histologic classification (Lauren' s)

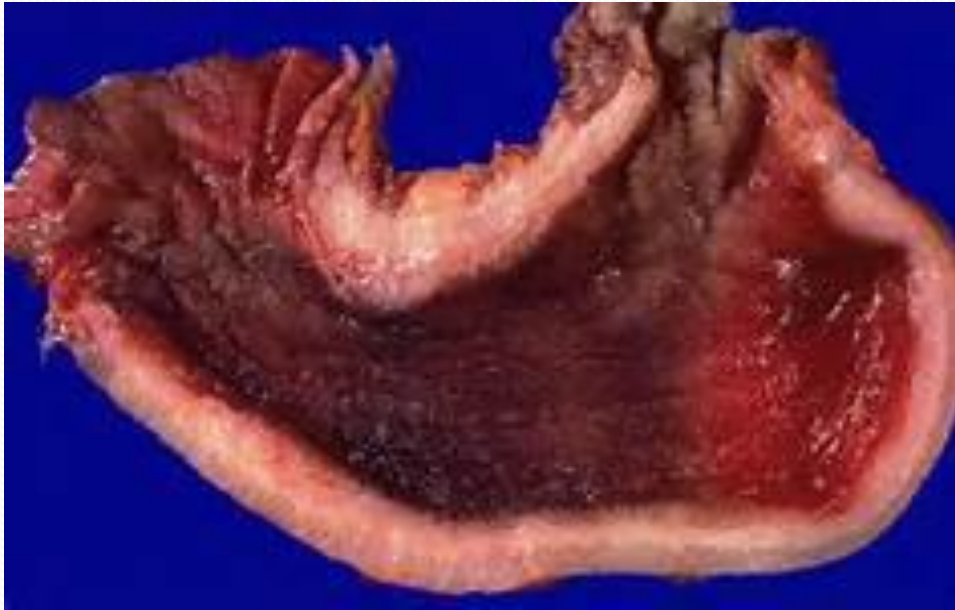
Intestinal

- In setting of chronic gastritis
- Neoplastic glands resemble intestinal epithelium (colon)
- Associated with H. pylori
- Intestinal metaplasia is precursor lesion
- More common in high-risk populations

Diffuse


- No gland formation
- Single cells, sheets, clusters
- Signet ring cells
- No intestinal metaplasia
- E-cadherin implicated
- More common in familial types with young female predominance
- Linitis plastica appearance

linitis plastica



METASTASIS:

- Regional and more distant lymphnodes.
- Supraclavicular nodes as 1st clinical manifestation of occult tumor.
- Periumbilical region to form subcutaneous nodule called sister mary josef nodule.
- Local invasion to duodenum, pancreas and retroperitoneum.
- Wide spread peritoneal seeding and metastasis to liver and lungs.

- 
- Visceral metastasis to both ovaries
Krukenberg tumor.
 - Transcelomic spread in pouch of douglas
causing palpable Blumer shelf at per
rectum examination.

Clinical course:

- Persistent abdominal pain.
- Gastric distention and vomiting.
- Loss of weight.
- Loss of appetite.
- Anemia, weakness, malaise.
- Sometime hematemesis.

DIOGNOSIS

- Barium meal study.
- Gastroscopy (Endoscopy)
- Computerised tomography.
- Endoscopic biopsy.
- Scalene node biopsy.

PROGNOSIS

- Depends on,
 - 1 Depth of invasion.
 - 2 Extend of nodal and distant metastasis at time of diagnosis.

Histologic type – no independent prognostic significance.

5 yrs survival of surgically treated EGC is 90% - 95% . AGC is less then 10%.

QUESTIONS

Etiopathogenesis of gastric carcinoma.

Classification of gastric carcinoma.

Early gastric carcinoma.

Advanced gastric carcinoma.

Difference between benign and malignant ulcer.

SHORT QUESTIONS

Mention role of diet in gastric carcinoma.

Enumerate host factors responsible for gastric carcinoma.

Most favoured location of gastric carcinoma.

Prognosis of gastric carcinoma.

Histologic subtypes of gastric carcinoma.

What do you mean by linitis plastica.

Thank You