What can I find in the stomach?

National Basic Endoscopy Course - BSGIE

Dr VAN SEVEREN Chloé – CHU of Liège (Ulg)

1st session: 23-24 oct 2026

Plan

1) Peptic ulcer disease
2) Atrophic or metaplastic gastritis
3) Neoplasia

1) Peptic ulcer disease

A) Causes

- Main causes
  - Helicobacter Pylori
  - NSAID
- Prevalence: Helicobacter pylori 42-70% (↓) > NSAID 36% (↑)

Christophe Burucoa et al. Prise en charge des infections à *Helicobacter pylori* en 2026. HGOD 2026
Vakil N. Peptic Ulcer Disease: A Review. JAMA. 2024
Mikael Guedj. MIKBOOK 4è édition. 2019

A) CAUSES

- Main causes





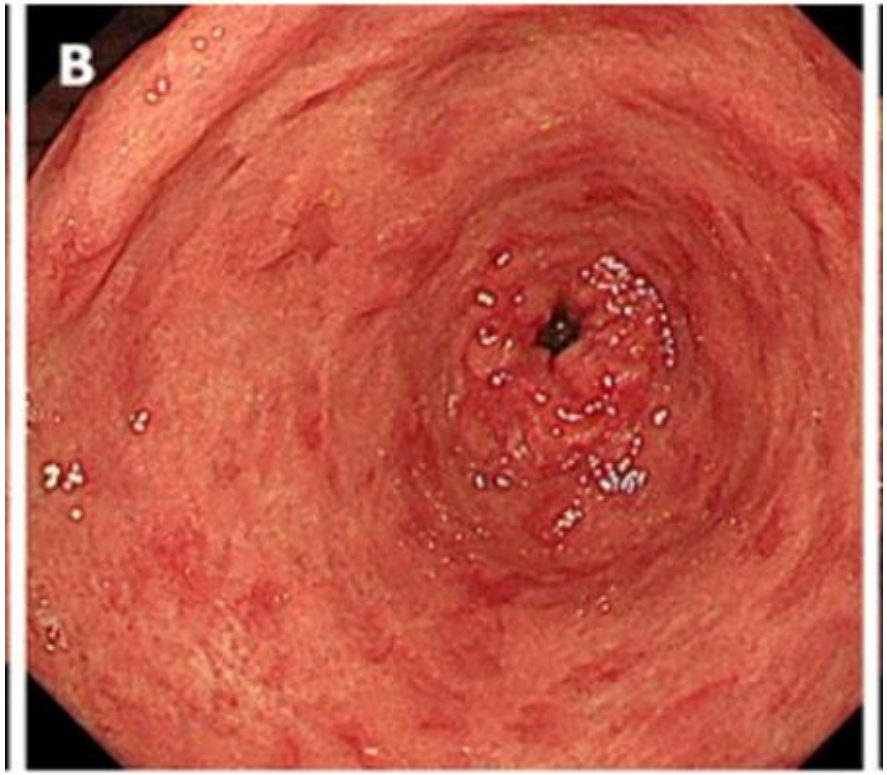
A) CAUSES

- Main causes



A) CAUSES

- Helicobacter Pylori

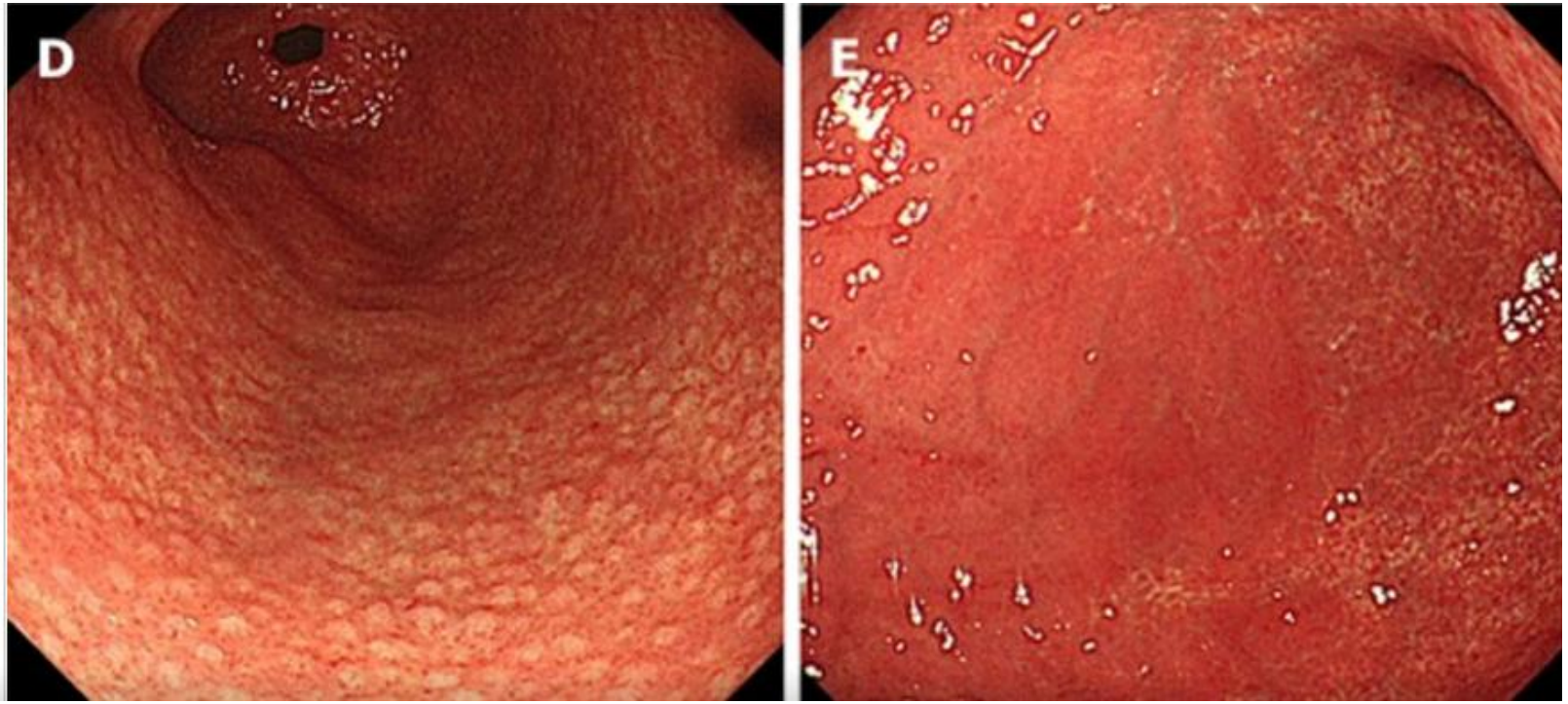


Patchy redness

Garcés-Durán R et al. Endoscopic diagnosis of H. pylori infection. Gastroenterol Hepatol. 2023.

A) CAUSES

- Helicobacter Pylori

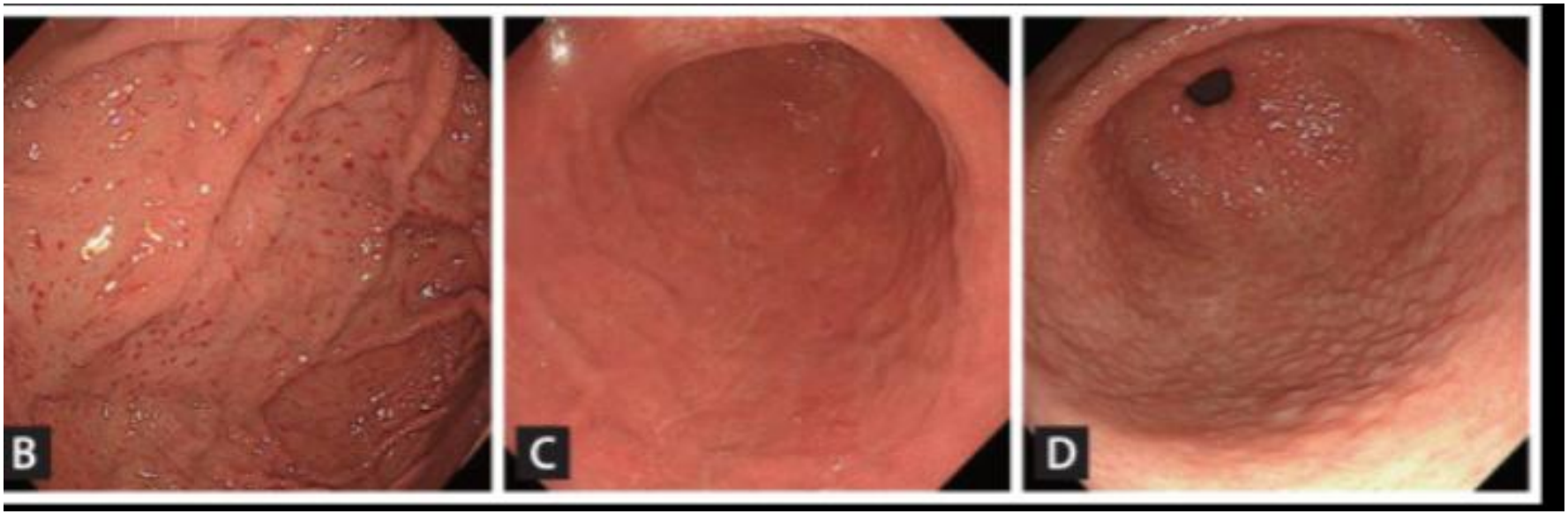


Nodularity – diffuse redness

Garcés-Durán R et al. Endoscopic diagnosis of H. pylori infection. Gastroenterol Hepatol. 2023.

A) CAUSES

- Helicobacter Pylori



Spotty redness, diffuse redness, nodularity

Seo JY et al. Predicting Helicobacter pylori infection from endoscopic features. Korean J Intern Med. 2024

A) CAUSES

- Helicobacter Pylori – tip
  - RAC (**Regular arrangement of collecting venules)** = endoscopic marker for exclusion of H. pylori infection (NPV ↑).
  - ! Not a single indicator for the diagnostic of H. pylori infection!
  - ideal location for detection : lower part of the lesser curvature



WL – lesser curvature

Yu F et al. Regular arrangement of collecting venules (RAC) as an endoscopic marker for exclusion of Helicobacter pylori (H. pylori) infection: A systematic review and meta-analysis. Int J Clin Pract. 2021.
Garcés-Durán R et al. Endoscopic diagnosis of H. pylori infection. Gastroenterol Hepatol. 2023,

A) CAUSES

- Helicobacter pylori
  - No RACs



Garcés-Durán R et al. Endoscopic diagnosis of H. pylori infection. Gastroenterol Hepatol. 2023.

A) CAUSES

- Other causes of ulcer:
  - Tumor (!isolated ulcer)
  - Zollinger Ellisson
  - Surgery
  - Other medication (corticosteroïds,…)
  - Infection (virus,…)
  - Post ICU
  - Vascular disease
  - Caustic lesion
  - Inflammatory disease (CD)

https://www.niddk.nih.gov/health-information/digestive-diseases/peptic-ulcers-stomach-ulcers/symptoms-causes
Malik TF et al. Peptic Ulcer Disease. 2026 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK534792/

b) Description

- Location in the stomach
- Single or multiple
- Size
- Deep
- Edges
- Spontaneous bleeding

B) Description

- Forrest Classification

Forrest Classification	
Acute haemorrhage Forrest Ia Forrest Ib	 Active spurter Active oozing
Signs of recent haemorrhage Forrest IIa Forrest IIb Forrest IIc	 Non-bleeding visible vessel Adherent clot Flat pigmented haematin on ulcer base
Lesions without active bleeding Forrest III	 Clean-based ulcer

Forrest, JA et al. Endoscopy in gastrointestinal bleeding'. Lancet 1974
Rockall, TA et al. 'Risk assessment after acute upper gastrointestinal haemorrhage'. Gut 1996
Guglielmi A et al. 'Risk assessment and prediction of rebleeding in bleeding gastroduodenal ulcer'. Endoscopy 2002

B) Description

- Forrest Classification

Forrest Classification	
Acute haemorrhage	
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Forrest, JA et al. Endoscopy in gastrointestinal bleeding'. Lancet 1974
Rockall, TA et al. 'Risk assessment after acute upper gastrointestinal haemorrhage'. Gut 1996
Guglielmi A et al. 'Risk assessment and prediction of rebleeding in bleeding gastroduodenal ulcer'. Endoscopy 2002

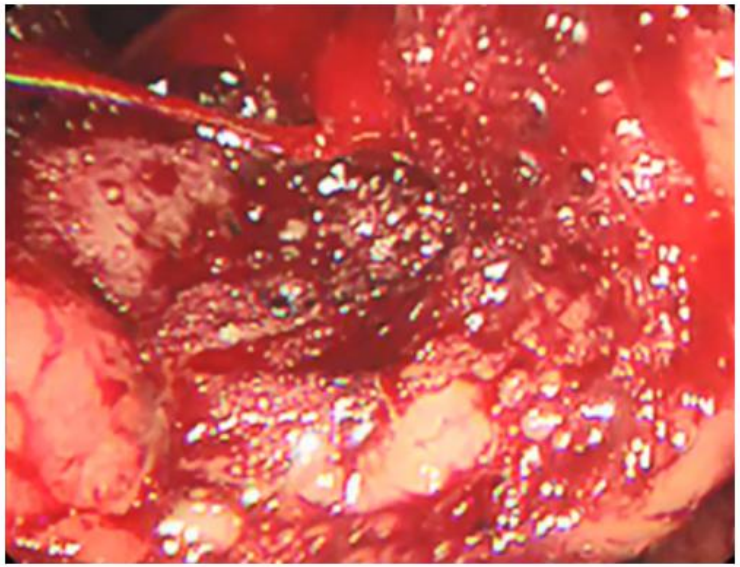


Figure 1. Forrest Ia gastric ulcer with an active spurter

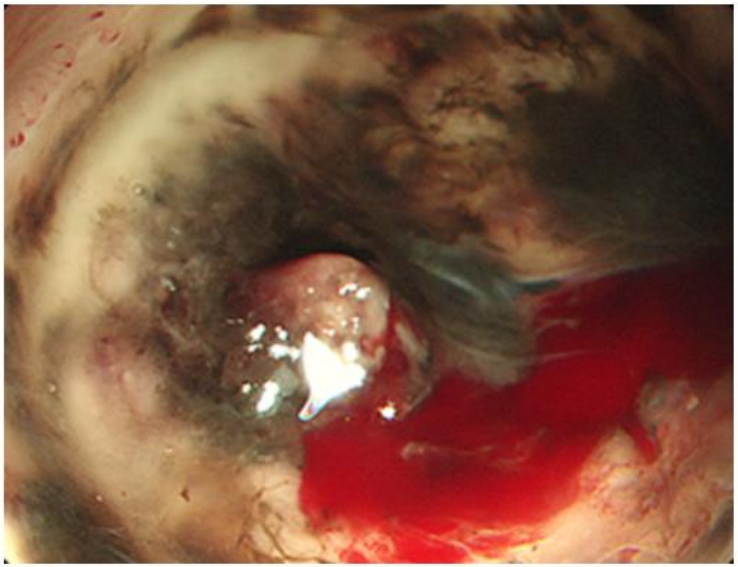


Figure 2a. Forrest Ib ulcer with active oozing

Forrest, JA et al. Endoscopy in gastrointestinal bleeding'. Lancet 1974
Rockall, TA et al. 'Risk assessment after acute upper gastrointestinal haemorrhage'. Gut 1996
Guglielmi A et al. 'Risk assessment and prediction of rebleeding in bleeding gastroduodenal ulcer'. Endoscopy 2002



Figure 3a. Forrest IIa ulcer with a visible vessel

Forrest, JA et al. Endoscopy in gastrointestinal bleeding'. Lancet 1974
Rockall, TA et al. 'Risk assessment after acute upper gastrointestinal haemorrhage'. Gut 1996
Guglielmi A et al. 'Risk assessment and prediction of rebleeding in bleeding gastroduodenal ulcer'. Endoscopy 2002



Figure 3b(i). Forrest IIb ulcer at incisura. With ulcers with an adherent clot, it is important that the clot must be removed by vigorous and meticulous flushing in order to reveal underlying visible vessels.

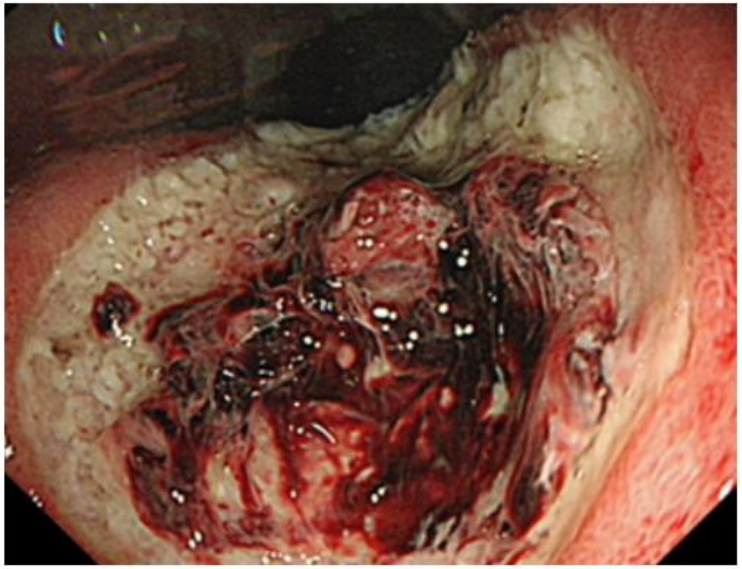


Figure 3b(ii). The same ulcer as above, but after the clot was removed. It revealed an underlying visible vessel.

Forrest, JA et al. Endoscopy in gastrointestinal bleeding'. Lancet 1974
Rockall, TA et al. 'Risk assessment after acute upper gastrointestinal haemorrhage'. Gut 1996
Guglielmi A et al. 'Risk assessment and prediction of rebleeding in bleeding gastroduodenal ulcer'. Endoscopy 2002

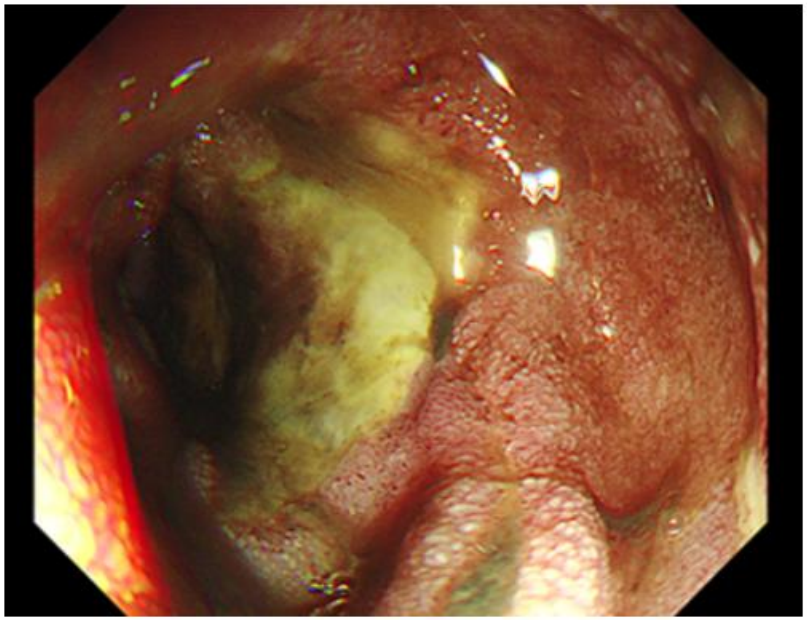


Figure 5. Forrest IIc ulcer with a pigmented spot

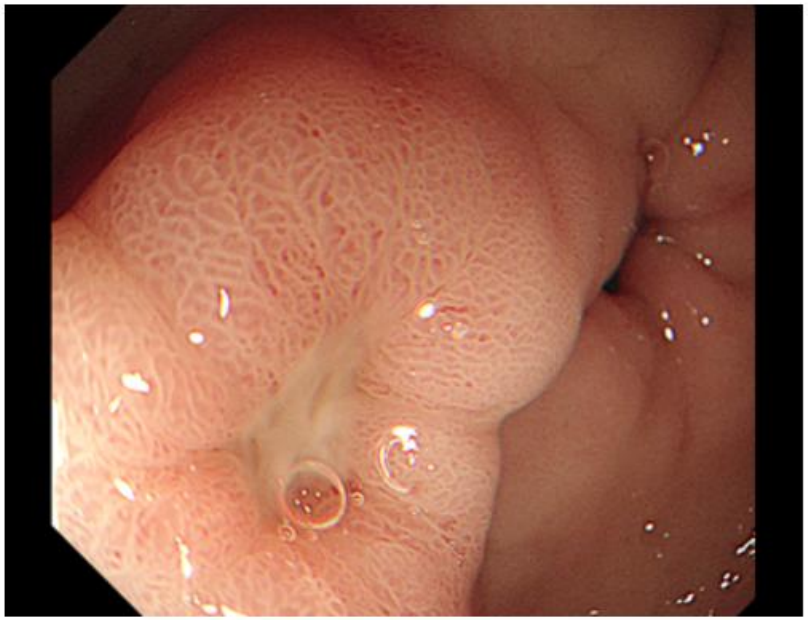


Figure 6a. Forrest III ulcer at antrum with clean base

Forrest, JA et al. Endoscopy in gastrointestinal bleeding'. Lancet 1974
Rockall, TA et al. 'Risk assessment after acute upper gastrointestinal haemorrhage'. Gut 1996
Guglielmi A et al. 'Risk assessment and prediction of rebleeding in bleeding gastroduodenal ulcer'. Endoscopy 2002

C) Management

- Diagnostic
  - Anamnesis: NSAID? Medical background (surgery, IBD, smoking,…)? Weight loss? …
  - Biopsies:
    - Suspicion of HP: 4 biopsies in 2 vials (2 antrum +-1 incisura, 2 fundus)
    - Suspicious ulcer: biopsies of the edges (necrosis in the centrum)
- In case of bleeding ➔ session 3
- Start IPP
- Follow-up gastroscopy 4-6 weeks (5% of isolated gastric ulcer is cancer!)

Mikael Guedj. MIKBOOK 4è édition. 2019

2) Atrophic or metaplastic gastritis

A) Introduction

- Main cause: Helicobacter Pylori infection (other: autoimmune gastritis) ➔ chronic mucosal inflammation ➔ precancerous lesions: gastric atrophy (GA) and gastric intestinal metaplasia (GIM) ➔ dysplasia ➔ carcinoma
- Diagnostic:
  - high quality endoscopy, WL + virtual chromoendoscopy (VCE)
  - Targeting biopsies of lesions
  - « staging » biopsies (2 antrum/incisura, 2 corpus in two separate vials) ➔ histologic score OLGA (Operative Link on Gastritis Assessment) and OLGIM

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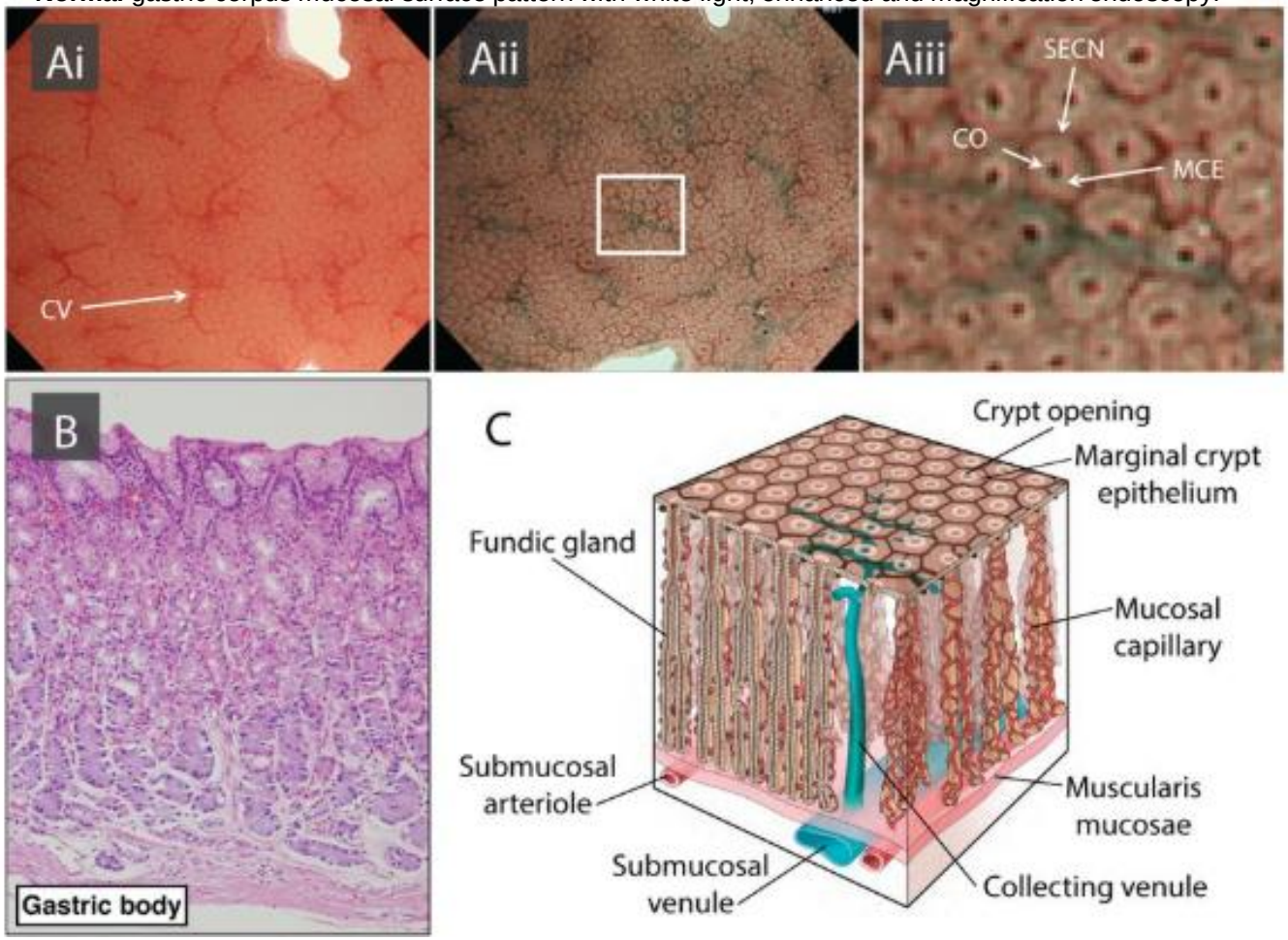
B) Description

- Location, mapping of GA/GIM
- Vascular and mucosal pattern
- In case of visible lesion: size, Paris classification

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B) Description – normal gastric body

Normal gastric corpus mucosal surface pattern with white light, enhanced and magnification endoscopy.

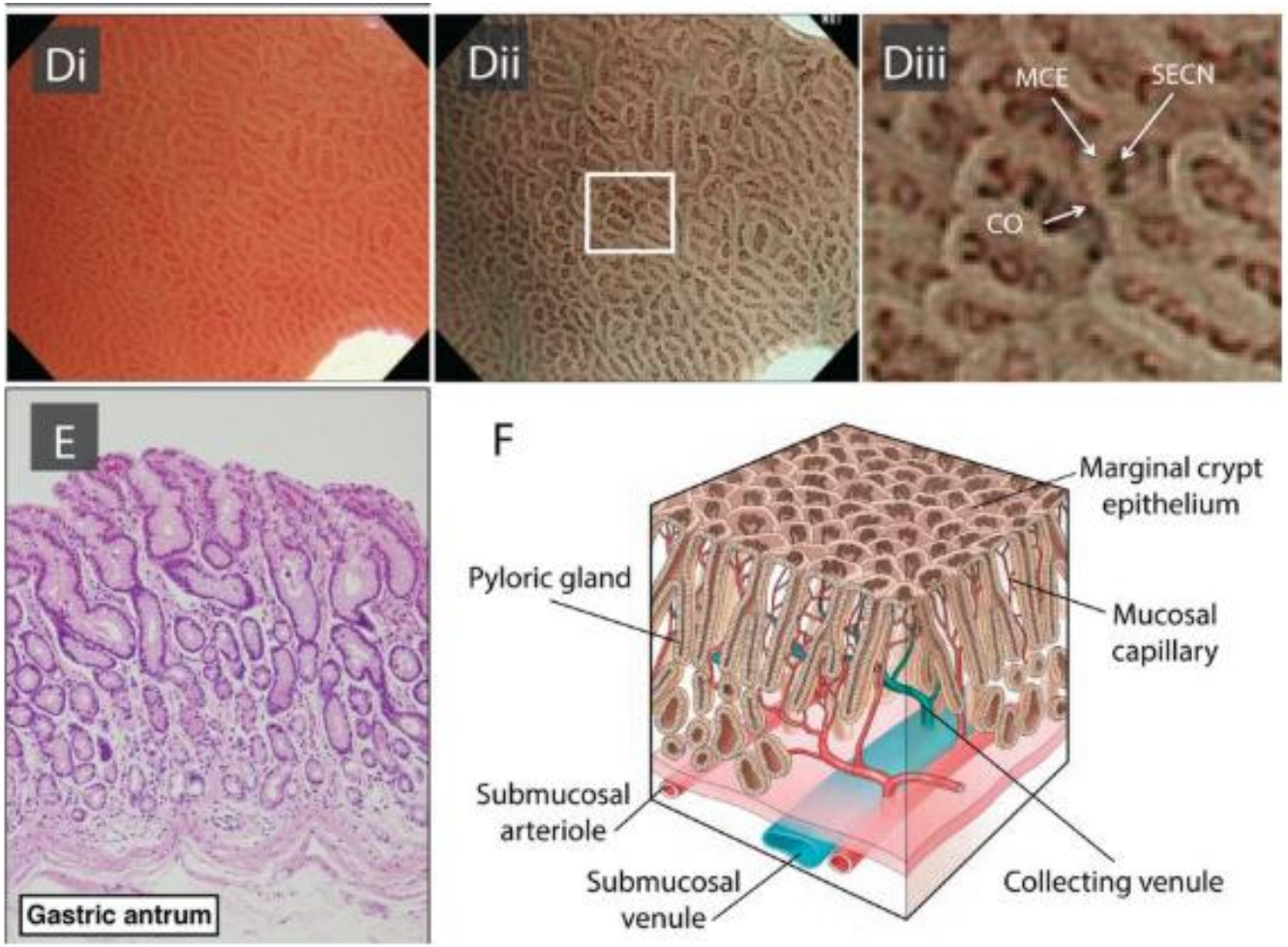


Typical **round** 'pit patterns' of the corpus

dark brown 'crypt openings' (CO), the dark brown sub-epithelial capillary network (SECN), and the light brown marginal crypt epithelia (MCE).

Banks M *et al.* British Society of Gastroenterology guidelines on the diagnosis and management of patients at risk of gastric adenocarcinoma *Gut* 2019.

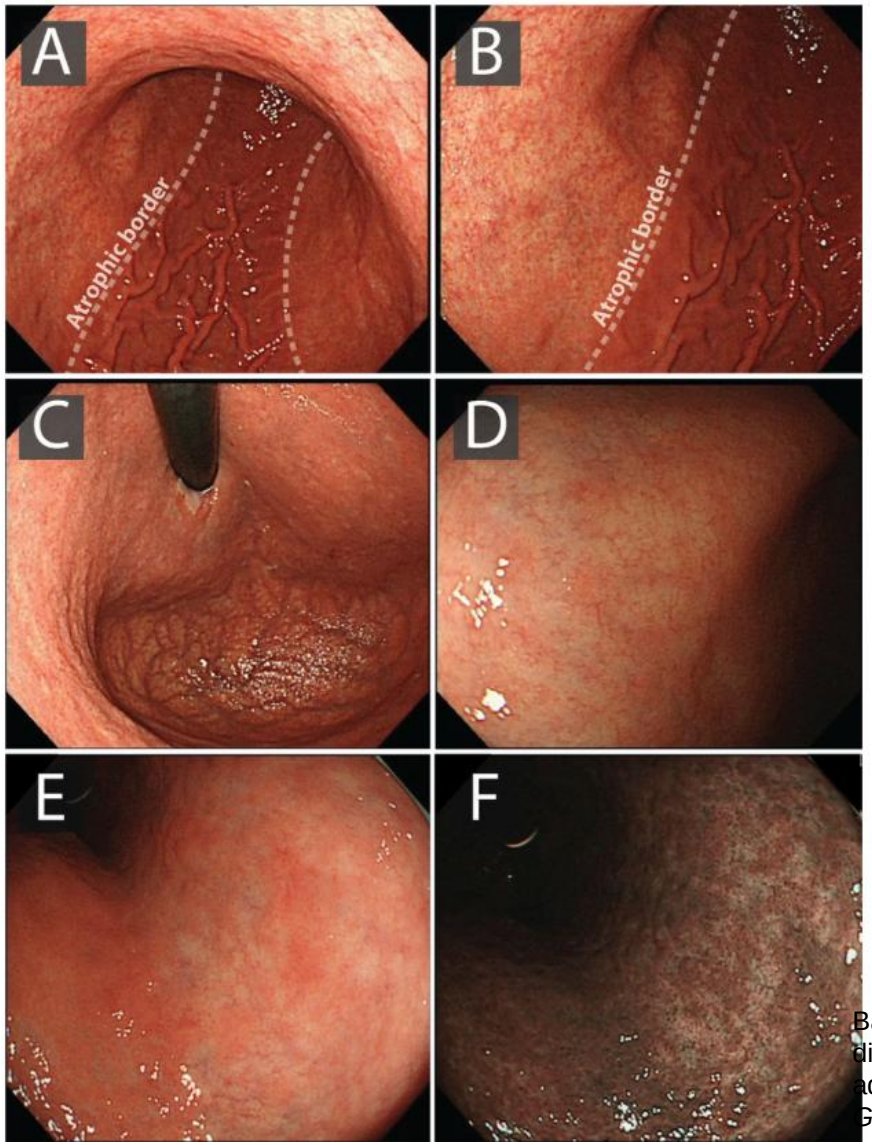
B) Description – normal gastric antrum



elongated 'pit patterns' of the antrum

Banks M *et al.* British Society of Gastroenterology guidelines on the diagnosis and management of patients at risk of gastric adenocarcinoma *Gut* 2019.

C) Gastric Atrophy

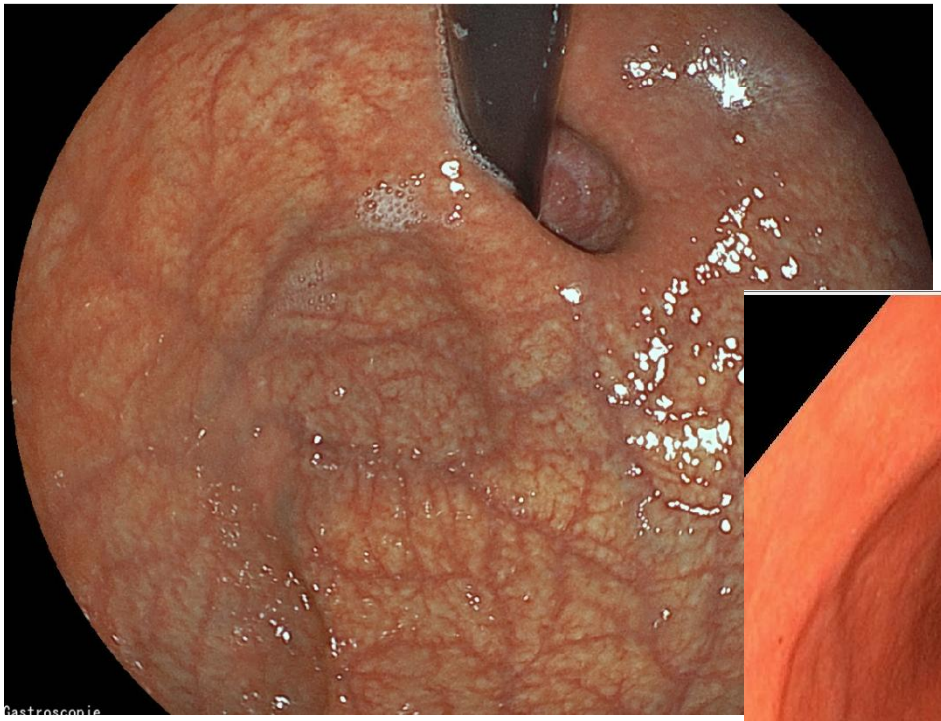


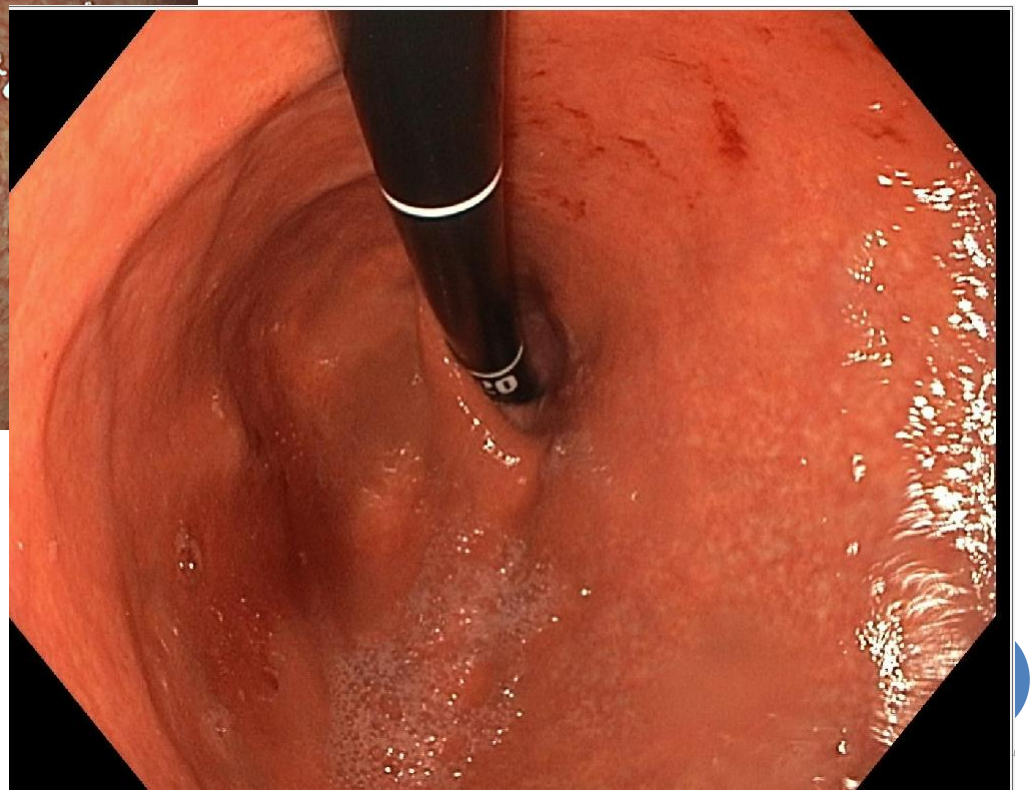
Endoscopic findings:

- palor
- loss of gastric folds
- prominence of the vessels
- atrophic border

Banks M *et al.* British Society of Gastroenterology guidelines on the diagnosis and management of patients at risk of gastric adenocarcinoma
Gut 2019.

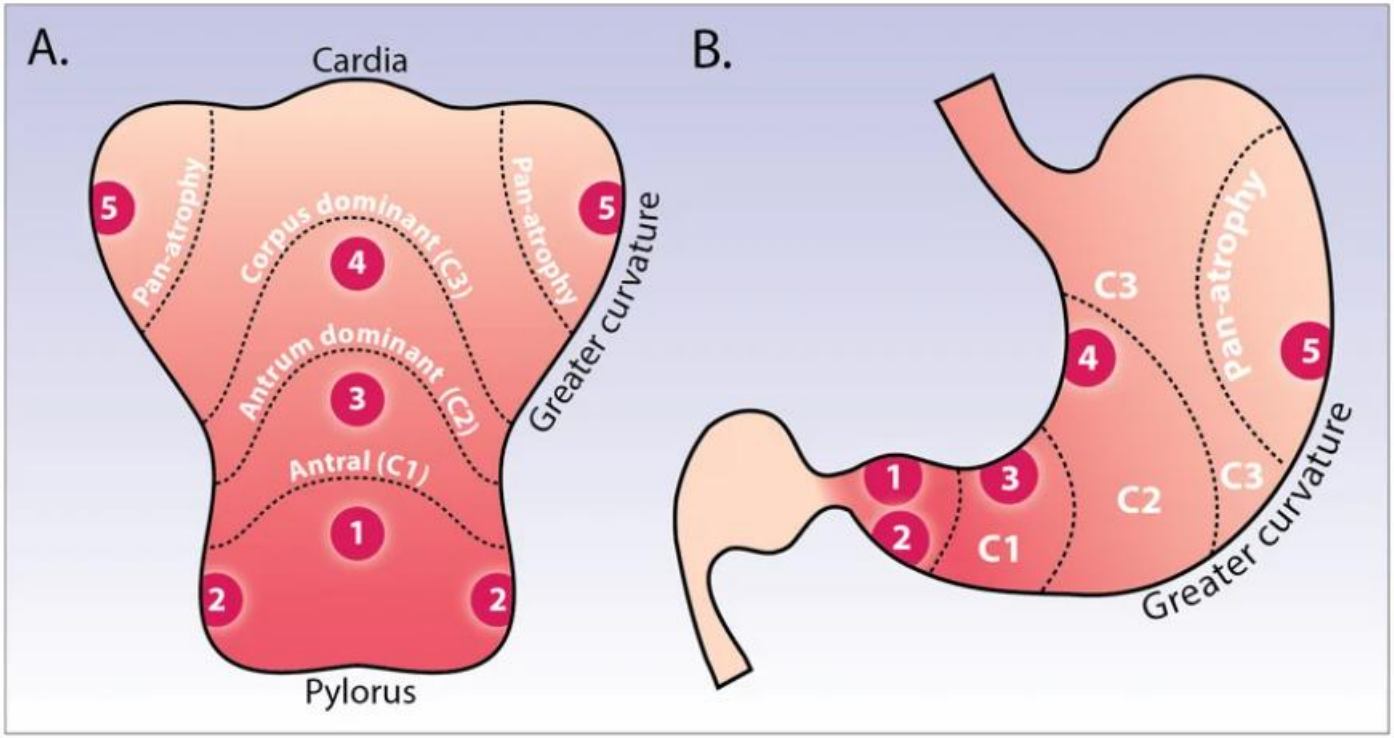
C) Gastric Atrophy





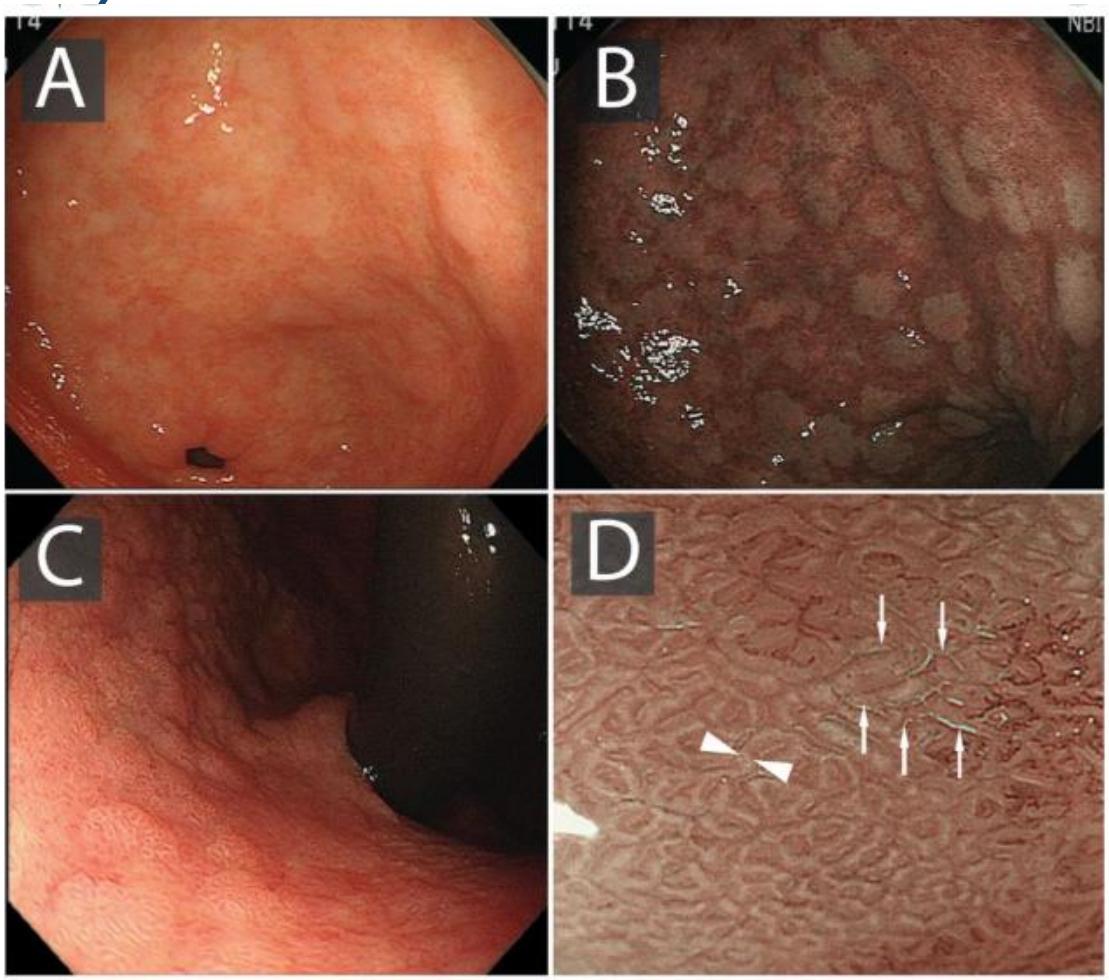
C) Gastric Atrophy

- The modified Kimura staging system divides the extent of atrophy into antrum only (antral), antrum to incisura (antral dominant), antrum to lesser curve (corpus dominant), and antrum, lesser curve and greater curve (pan-atrophy).



Banks M *et al.* British Society of Gastroenterology guidelines on the diagnosis and management of patients at risk of gastric adenocarcinoma. *Gut* 2019.

D) Intestinal metaplasia



Endoscopic findings:

- small grey-white slightly elevated plaques surrounded by mixed patchy pink and pale areas of mucosa causing an irregular uneven surface
- villiform pattern
- Light blue crest (LBC): fine, blue-white line on the crest of the epithelial surface seen with NBI enhancement (Fine arrows in D).

Note: GIM in the antrum is more difficult to characterize as the normal glands are oblique

Banks M *et al.* British Society of Gastroenterology guidelines on the diagnosis and management of patients at risk of gastric adenocarcinoma *Gut* 2019.

D) Intestinal Metaplasia

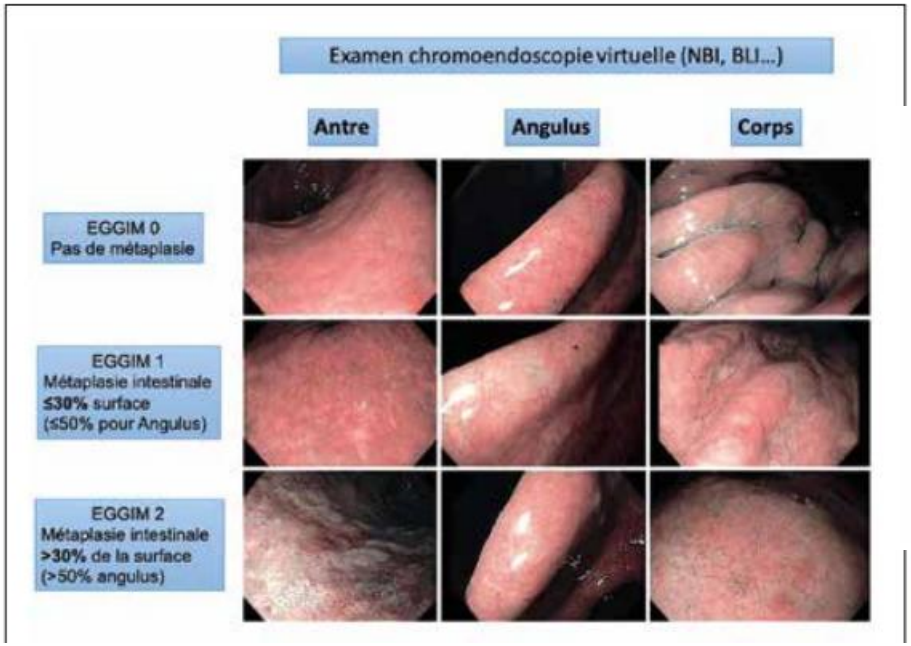




D) Intestinal metaplasia

- EGGIM (endoscopic grading of gastro-intestinal metaplasia).
- If the score ≥ 5 = high risk of severe histologic lesion

Figure 4 : Score EGGIM, adapté de Esposito *et al.* Endoscopy 2018 (14)

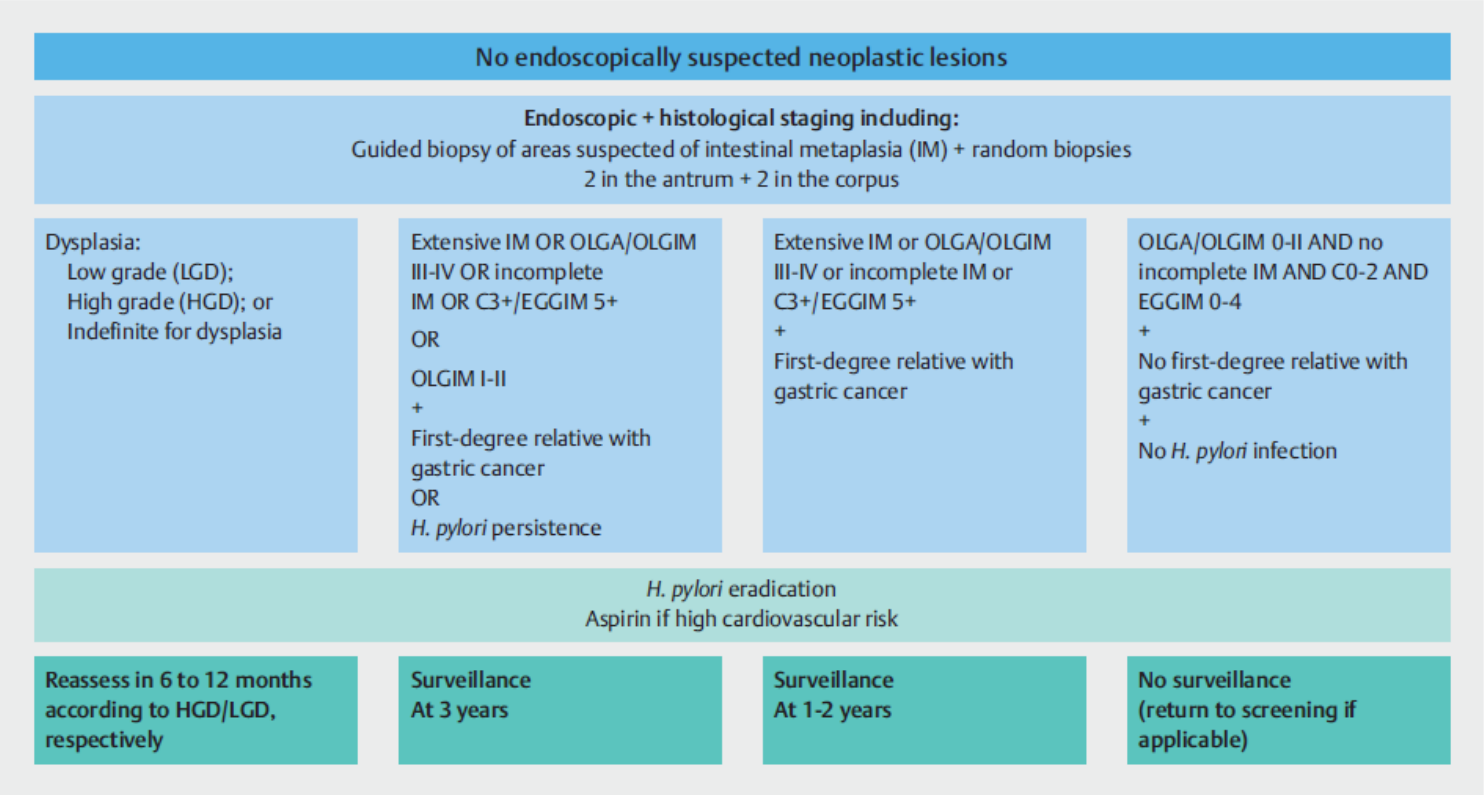


	Antre		Angulus	Corps	
	Petite courbure	Grande courbure		Petite courbure	Grande courbure
Pas de métaplasie	0	0	0	0	0
Métaplasie ≤30%	1	1	1	1	1
Métaplasie >30%	2	2	2	2	2
Sous total =	0-4		0-2	0-4	
Score EGGIM	**0-10**				

Cut-off score EGGIM≥ 5

Chapelle N. Prise en charge des lésions précancéreuses et cancers gastriques précoces. Post U 2026

E) MANAGEMENT



▶ **Fig. 10** Management of precancerous conditions (and nonvisible dysplasia or indefined). C3+, C0–2, Kimura–Takemoto classification; EGGIM, endoscopic grading of gastric intestinal metaplasia; OLGA, operative link on gastritis assessment; OLGIM, operative link on gastric intestinal metaplasia.

Dinis-Ribeiro M et al. MAPS III. ESGE Guidelines Endoscopy 2025.

F) Dysplasia


NBI
Near
examination running
NBI
Near
Focus
D.F:2
0/1
Eh:A7 Cm:1
ENDOBASE examination running

3) Neoplasia

A) Introduction

- Median age : 71 years
- male > female (ratio : 1.2)
- Most frequent subtype: adenocarcinoma (other: gist, net, lymphoma, gastric linitis…)
- Risk factor: Helicobacter Pylori, autoimmune gastritis, familial history, ethnic origin (eastern Asia), alcohol, smoking,…

Cancer Fact Sheets 2024, Belgian Cancer Registry (BCR), 2026
Lerut T, Stordeur S, Verleye L, Vlayen J, Boterberg T, De Hertogh G, De Mey J, Deprez P, Flamen P, Pattyn P, Van Laethem J-L, Peeters M. Update van de praktijkrichtlijn voor slokdarm- en maagkanker. Good Clinical Practice (GCP). Brussel: Federaal Kenniscentrum voor de Gezonheidszorg (KCE); 2012.
Thesaurus national de cancérologie digestive. Cancer de l'estomac. SNFGE. 2026

A) INTRODUTION

- Late diagnosis: > 1/3 stage IV
- Poor prognosis: 5-year net survival of 49.4%
- Incidence worldwide: it is the fifth most frequent
- ↓ incidence 1,8%/year (better control of risk factor)

Cancer Fact Sheets 2024, Belgian Cancer Registry (BCR), 2026
Lerut T et al. Update van de praktijkrichtlijn voor slokdarm- en maagkanker. Good Clinical Practice (GCP). Brussel: Federaal Kenniscentrum voor de Gezonheidszorg (KCE); 2012.
Banks M *et al.* British Society of Gastroenterology guidelines on the diagnosis and management of patients at risk of gastric adenocarcinoma. *Gut* 2019.

B) Description

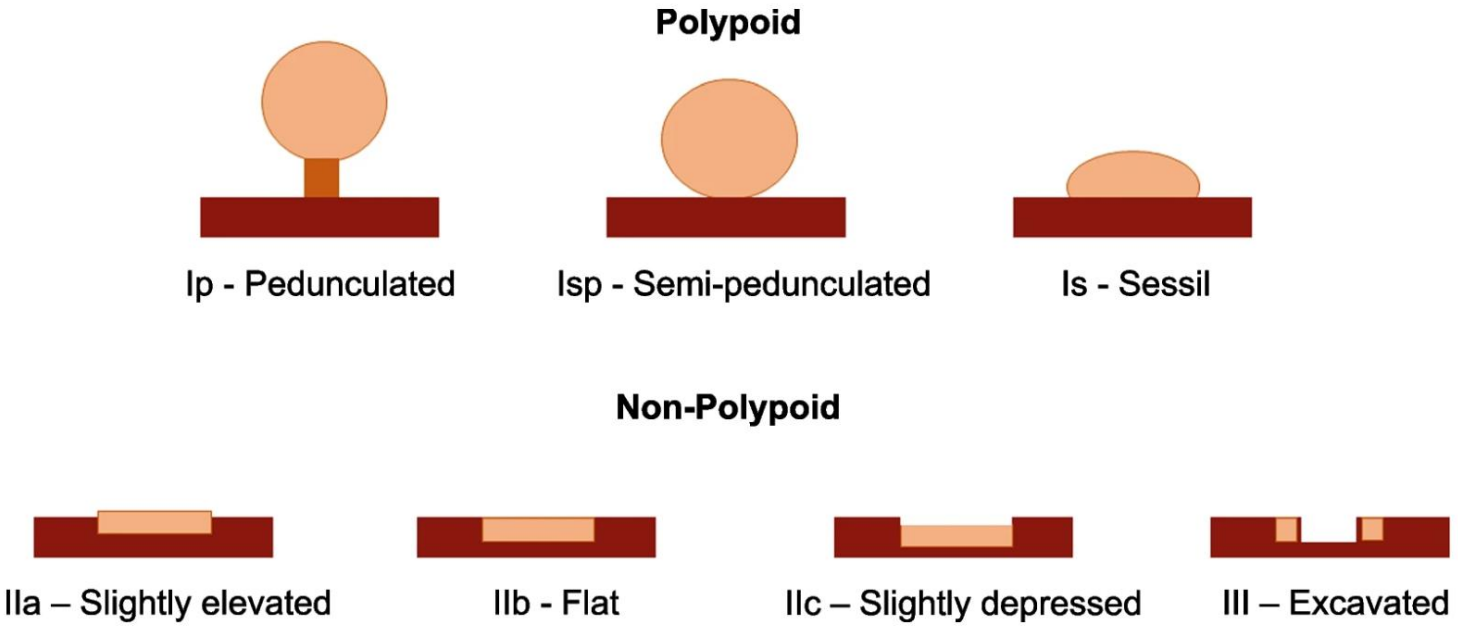
- Location in the stomach (! Lower part of the stomach, lesser curvature)
- Size
- morphology: Paris classification
- Vascular and mucosal pattern
- Photodocumentation
- targeted biopsies (2 biopsies in early lesions (prior to ER); 6 biopsies in advanced lesion)

Dinis-Ribeiro M et al. MAPS III. ESGE Guidelines Endoscopy 2025.
Kang DH et al. Location characteristics of early gastric cancer treated with endoscopic submucosal dissection. Surg Endosc. 2017
López MJ et al. Characteristics of gastric cancer around the world. Crit Rev Oncol Hematol. 2023



B) Description

- Paris classification



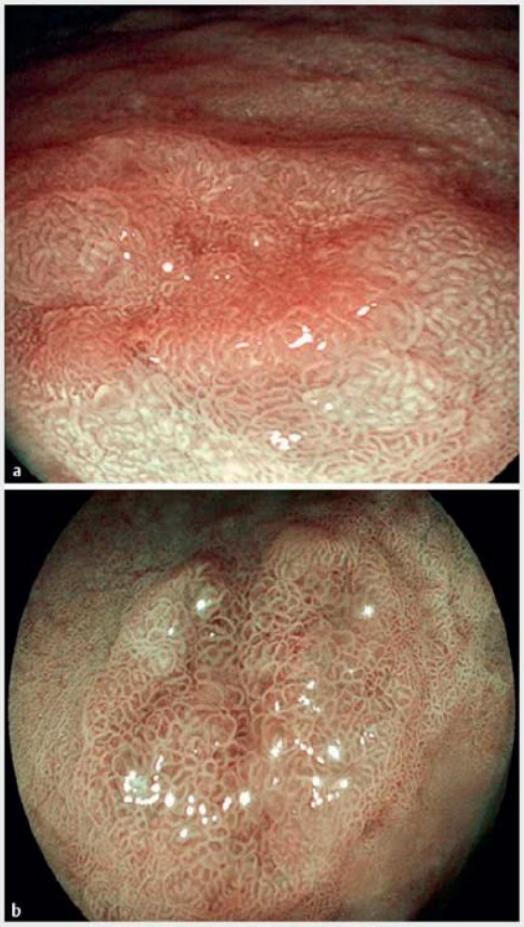
B) Descpription

- Signs of deep submucosal invasion? Risk factors of non curative resection?
  - poor differentiation
  - Size ≥ 20mm
  - Ulceration (Paris type III)
  - Depressed-type morphology
  - 1/3 superior of the stomach
  - Fusion of converging folds

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C) Superficial lesions – ER



▶ **Fig. 5** Superficial lesions submitted to curative resection: **a** Paris 0-IIa, no ulceration, 8 mm, antrum; en bloc resection with endoscopic submucosal dissection (ESD); low grade dysplasia (LGD), R0. **b** Paris 0-Is, no ulceration, 12 mm, incisura; en bloc resection with ESD; well-differentiated, HM0, VM0, Ly neg, R0.

C) Superficial lesions – ER

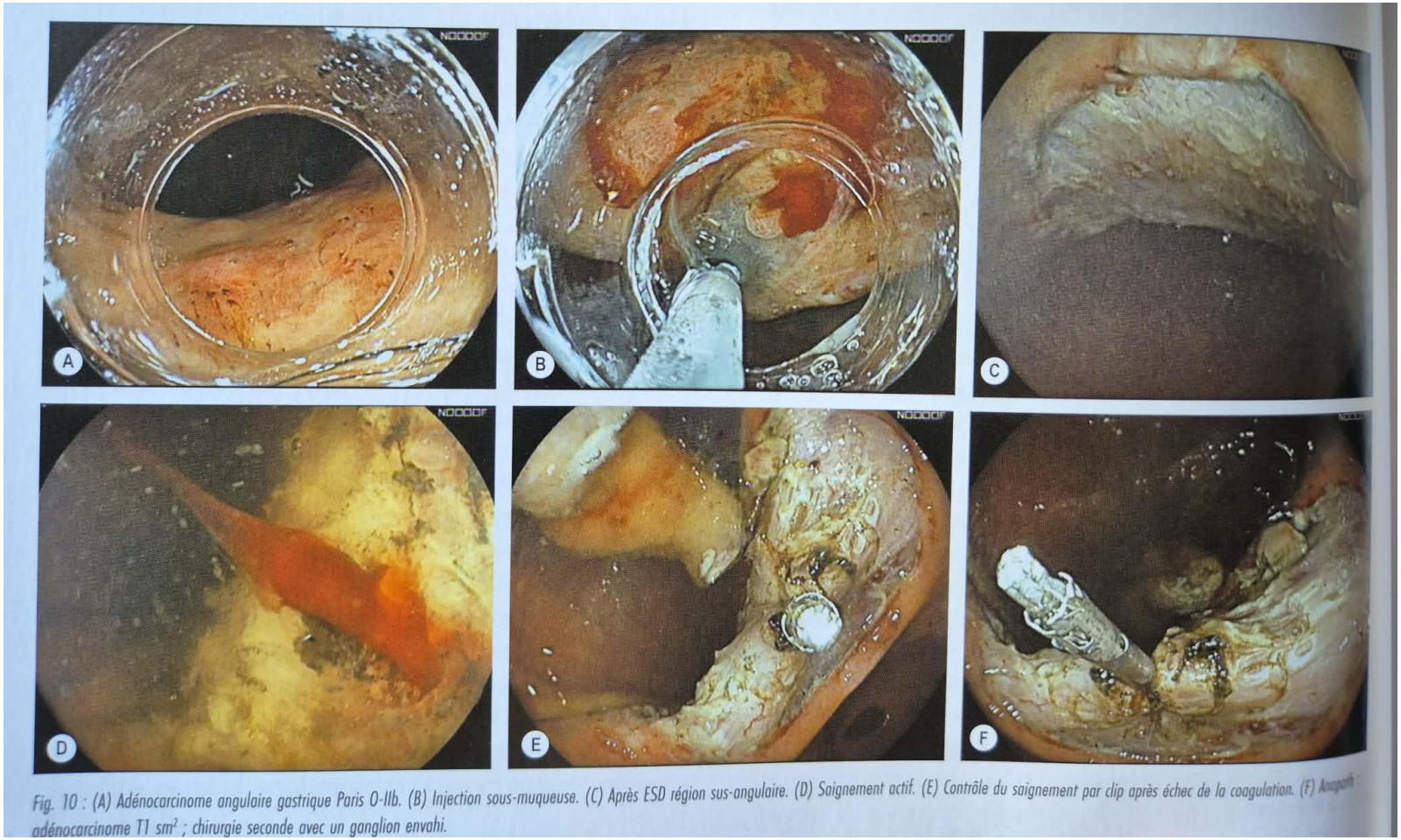


Fig. 10 : (A) Adénocarcinome angulaire gastrique Paris 0-IIb. (B) Injection sous-muqueuse. (C) Après ESD région sus-angulaire. (D) Saignement actif. (E) Contrôle du saignement par clip après échec de la coagulation. (F) Anapath : adénocarcinome T1 sm² ; chirurgie seconde avec un ganglion envahi.

Canard J-M et al. Endoscopie digestive en pratique. 2023 (5ème édition)

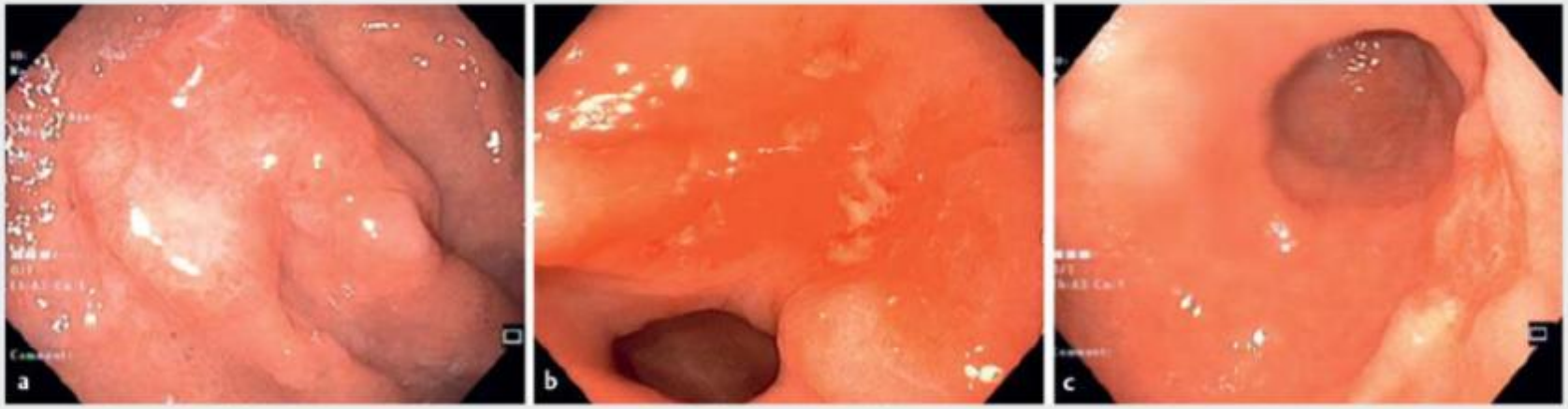
C) Superficial Lesions – ER



Fig. 9 : ESD gastrique. (A) Adénocarcinome antral Paris 0-IIc (BLI). (B) LCI. (C) Marquage. (D) Après ESD. (E) Pas de saignement après hémostase soigneuse.

Canard J-M et al. Endoscopie digestive en pratique. 2023 (5ème édition)

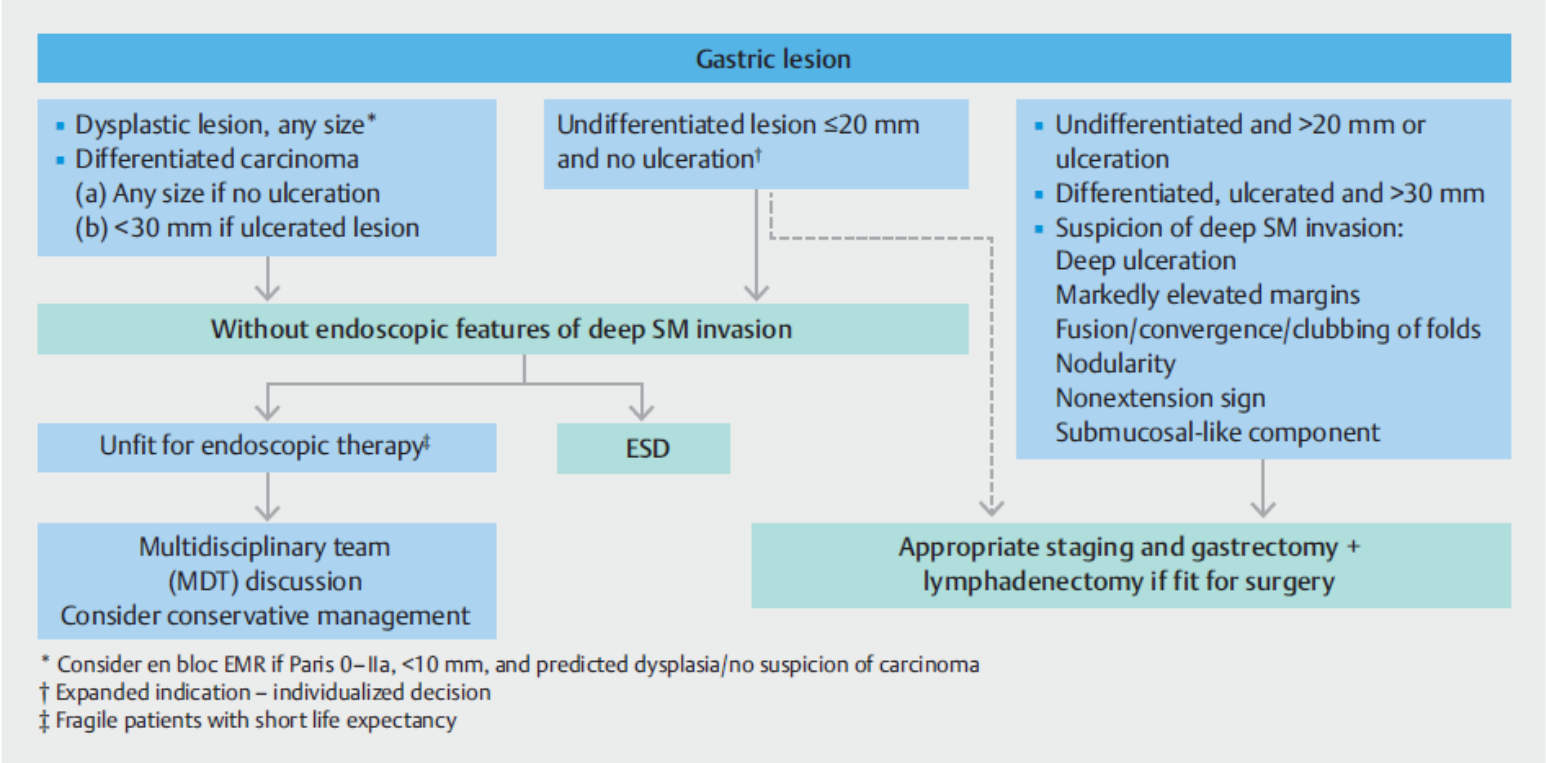
C) Superficial Liesions – Surgery



► **Fig. 6** Superficial lesions sent for surgical treatment because of suspected invasion. **a** Proximal corpus, 0-Is, 20 mm, ulcerated (Ulc+), fold convergences and elevated margins; deep submucosal invasion suspected. Surgery revealed differentiated carcinoma, pT2N+Mo lesion. **b** Distal antrum, 0-Iic-Iia, 23 mm, Ulc+, fold convergences; submucosal invasion suspected. Surgery revealed undifferentiated, pT1b N0 lesion. **c** Antrum, Iic+Iia, 25 mm, fold convergence. Surgery revealed differentiated, pT1b Ly+N0 lesion.

Dinis-Ribeiro M et al. MAPS III. ESGE Guidelines Endoscopy 2025.

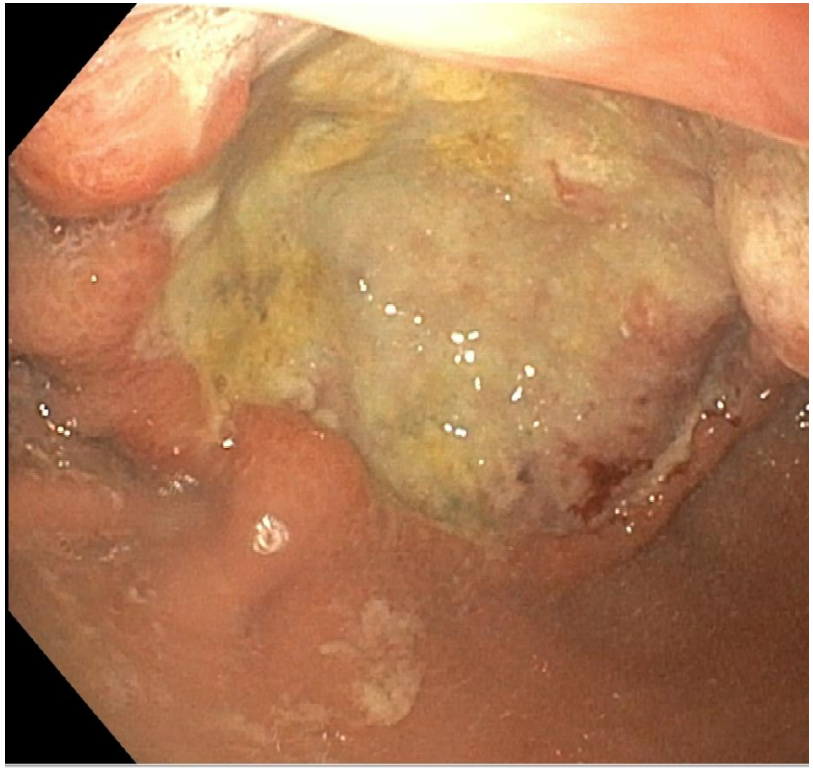
D) Management of superficial lesion

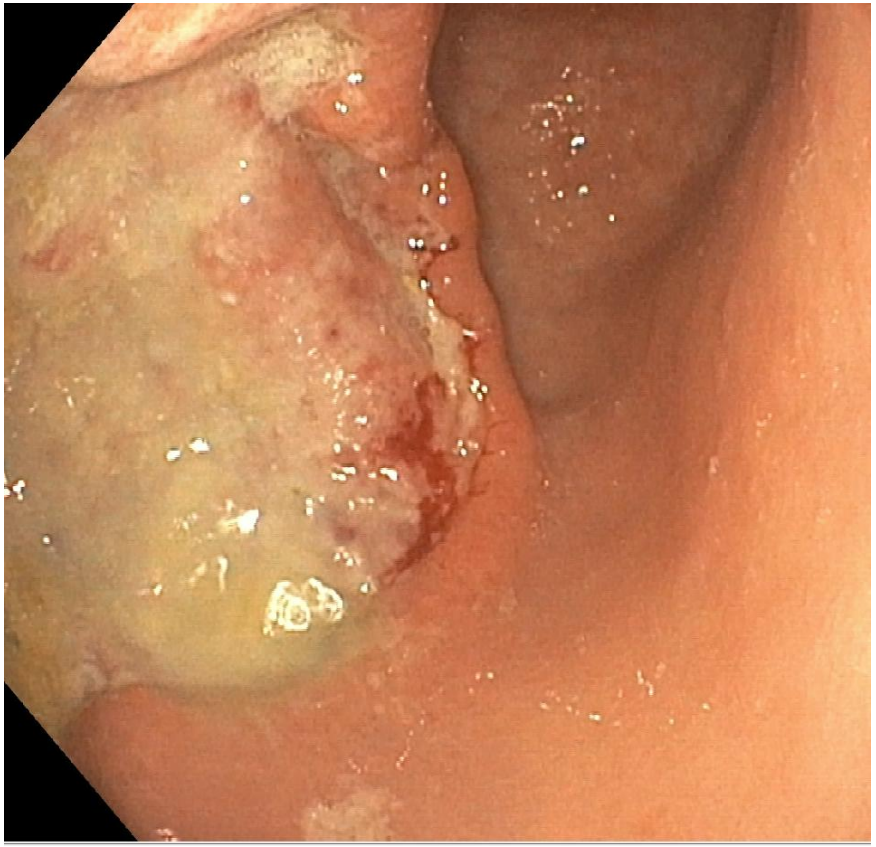


▶ **Fig. 8** Algorithm for pre-therapy allocation and treatment decision for gastric lesions. SM, submucosal; ESD, endscopic submucosal dissection; EMR, endoscopic mucosal resection.

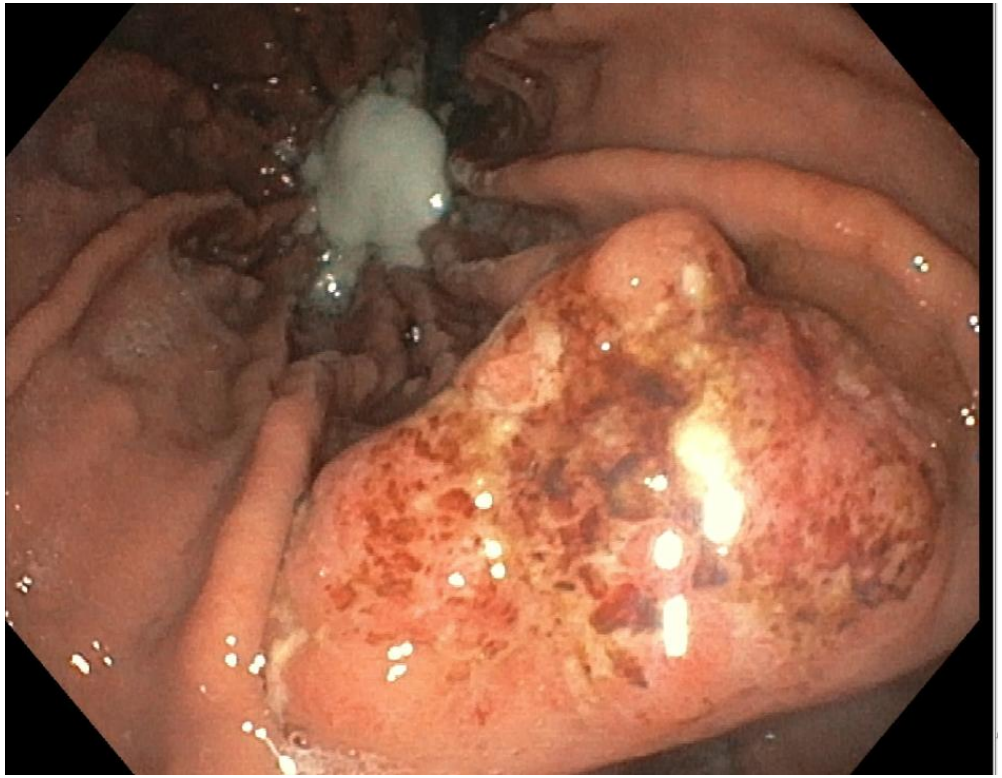
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E) ADENOCARCINOMA



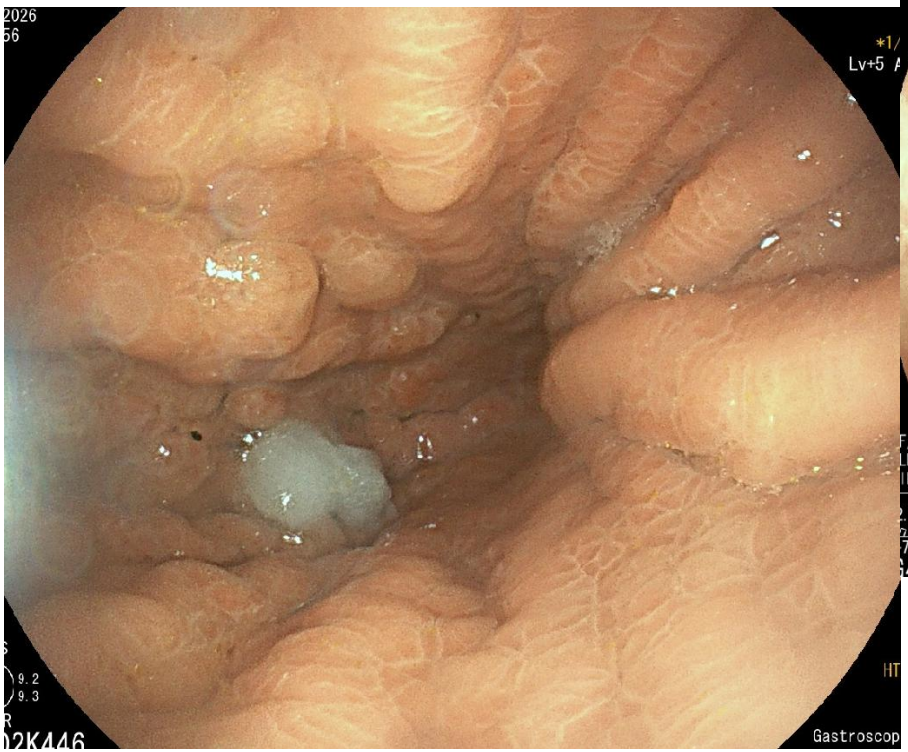


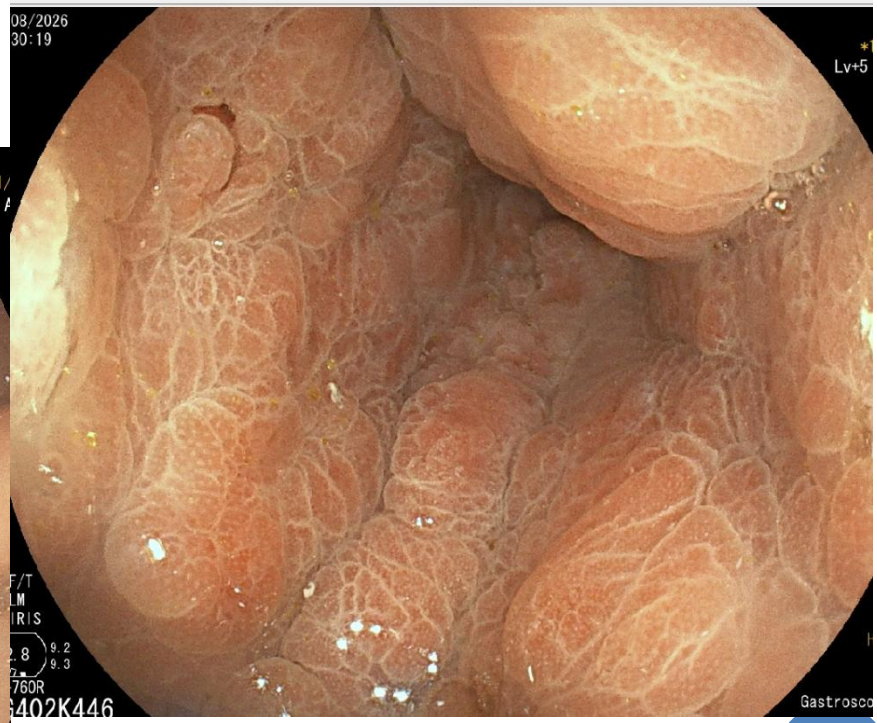
E) Adenocarcinoma



F) Gastric Linitis

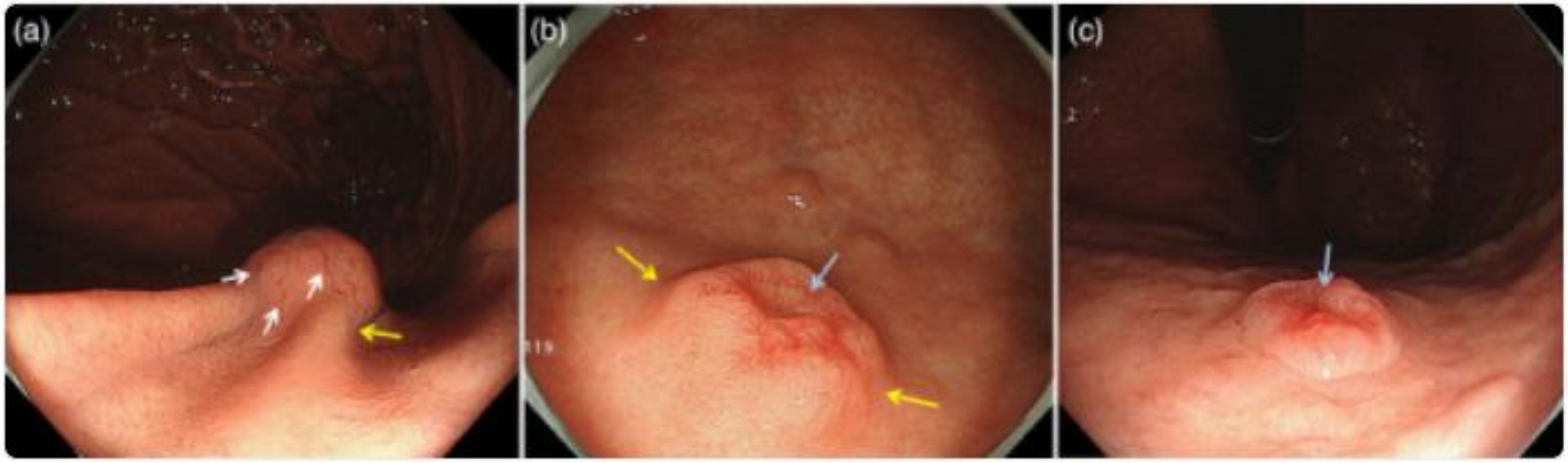
- diffuse tumor infiltration + thickening and stiffness of the gastric wall ➔ hard to insuflate





G) Neuroendocrine tumor

- reddish polypoid lesion



Matsueda K et al. Endoscopic features of gastric neuroendocrine tumors. DEN Open. 2025 Feb 26;

G) Neuroendocrine tumor



Take home message

- Daily practice… but take your time to not miss anything ☺
- ! Isolated ulcer !
- If any doubts, take PHOTOS + biopsies