Stomach This: Approach to Precancerous Gastric Lesions

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9:00-9:20 AM

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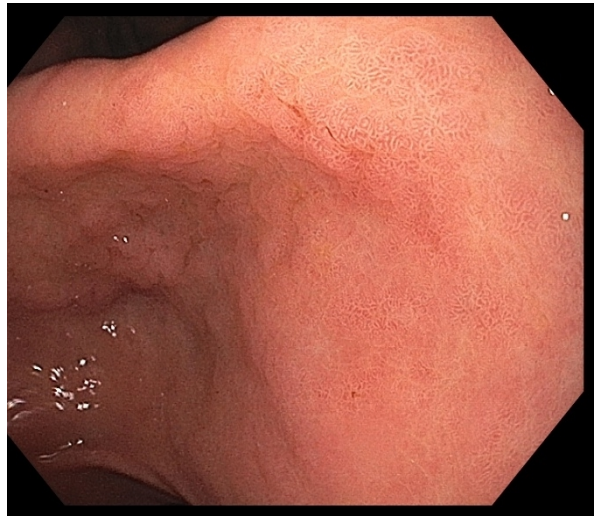
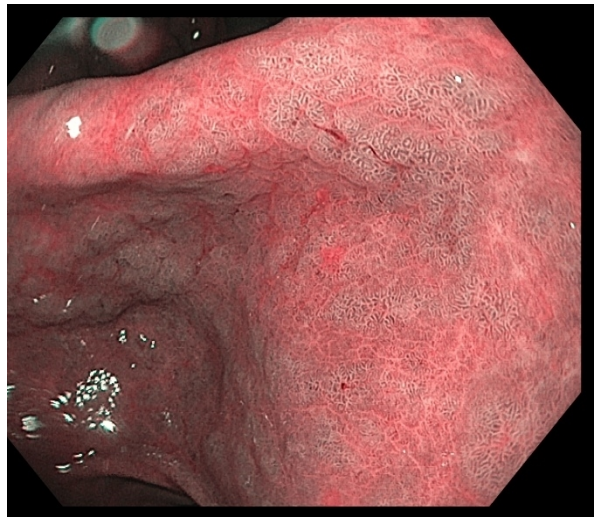
Objectives

- Discuss pertinent advances in the field of gastric precancerous lesion management from the last 5 years
- Focus on guidelines and consensus statements
- High-quality upper endoscopic performance
  - Mucosal visualization and use of image-enhanced endoscopy
  - Sydney protocol biopsies: why, how and in whom?
  - Comprehensive pathologic reporting
- Frequency of surveillance
- Role for screening of asymptomatic individuals?
- Gastric polyps associated with precancerous gastric lesions

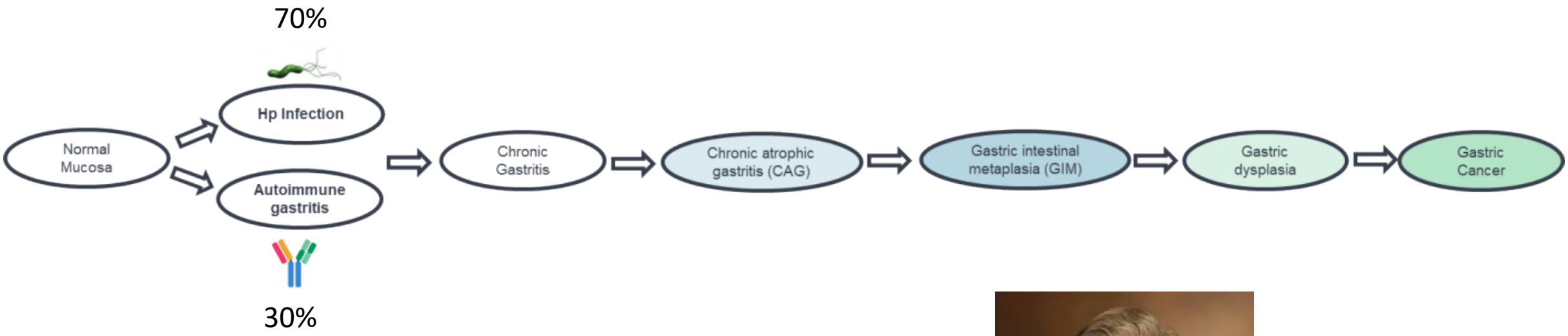
Case #1

A 60 year-old man is undergoing upper endoscopic evaluation for unexplained dyspepsia. The patient was born in the United States and has no family history of digestive cancer to either first- or second-degree. This is his first upper endoscopic evaluation. During the endoscopic examination, the following images are taken using conventional white light (below) and virtual chromoendoscopy (above) from the gastric pre-pyloric region. Endoscopic visualization of the gastric corpus with both conventional white light and virtual chromoendoscopy reveal no significant abnormalities. What would you do next?





Correa's Cascade



Pelayo Correa, MD

Gastric precancerous lesion management before 2020

- While an awareness that lesions (CAG/GIM) were precancerous, surveillance was not considered ‘normative’
- No concrete societal guidance on whether or not to survey
- No societal guidance on how frequently to survey

Since that time, multiple guidelines and advisory statements have been published.

Gastroenterology 2020;158:693–702

CLINICAL PRACTICE GUIDELINES

AGA Clinical Practice Guidelines on Management of Gastric Intestinal Metaplasia

2020 AGA Guidelines on GIM

Gastroenterology 2021;161:1325–1332

CLINICAL PRACTICE UPDATE

AGA Clinical Practice Update on the Diagnosis and Management of Atrophic Gastritis: Expert Review

2021 AGA CPU on CAG

AGA Clinical Practice Update on Screening and Surveillance in Individuals at Increased Risk for Gastric Cancer in the United States: Expert Review

2025 AGA CPU on Screening/surveillance

ACG Clinical Guideline: Diagnosis and Management of Gastric Premalignant Conditions

2025 ACG Guideline on GPMCs

QUALITY INDICATOR

ASGE

Quality indicators for upper GI endoscopy

2025 ACG/ASGE QI in EGD document

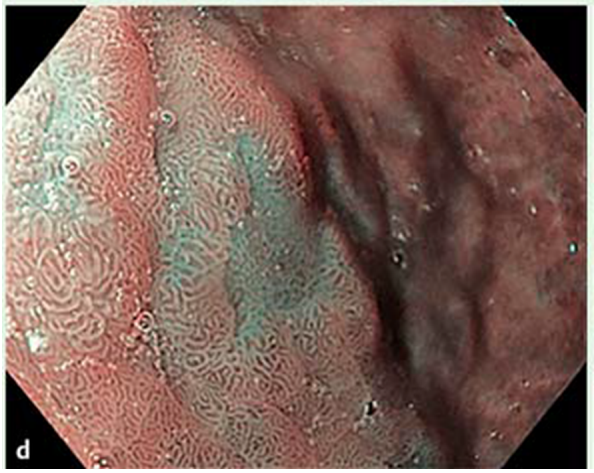
High-Quality Upper Endoscopy: Key Points of Consensus

- High-definition white light and image enhanced endoscopy (e.g. NBI) should be used.
- Adequate mucosal visualization should be obtained.
- Sydney protocol biopsies with at least 2 separate bottles (antrum/incisura; body) and targeted biopsies of any visible lesions
- Pathology should report: *H. pylori* presence, severity of CAG/GIM, and subtype of GIM

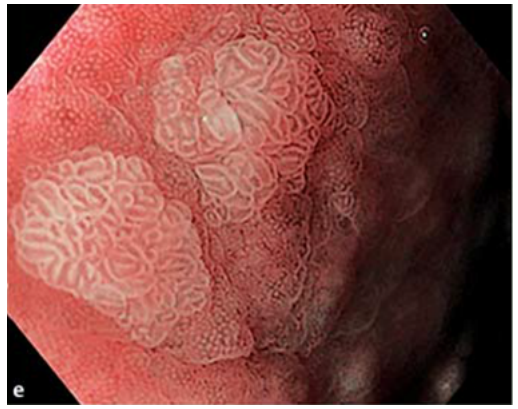
Morgan, D.R., et al., ACG Clinical Guideline: Diagnosis and Management of Gastric Premalignant Conditions. Am J Gastroenterol, 2025.
Shah, S.C., et al., AGA Clinical Practice Update on Screening and Surveillance in Individuals at Increased Risk for Gastric Cancer in the United
Yadlapati, R., et al., Quality indicators for upper GI endoscopy. Gastrointest Endosc, 2025. 101(2): p. 236-260.

Image enhanced endoscopy should be used.

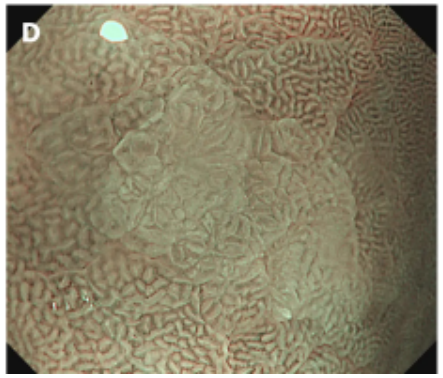
NBI features of GIM



Nodular and ridge-like mucosa with aspects of light blue crest.



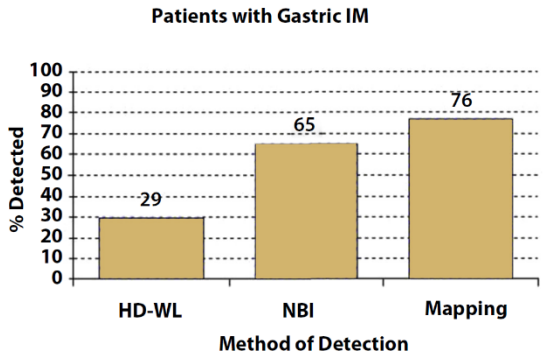
Tubulovillous mucosa

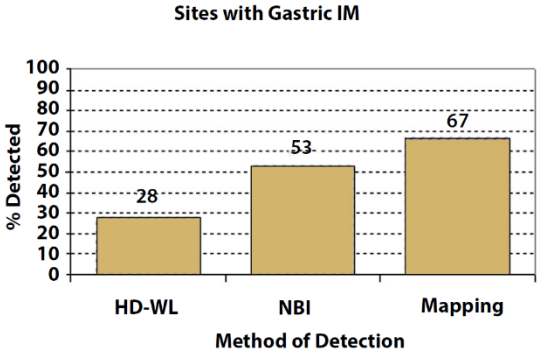


White opaque substance

NBI exam improves GIM detection

- 112 patients recruited in prospective repeated measures design
- HD-WL by one endoscopist, followed immediately by NBI exam by second endoscopist
- Targeted biopsies of abnormal areas followed by Sydney protocol biopsies
- Yield defined as proportion of patients identified with GIM



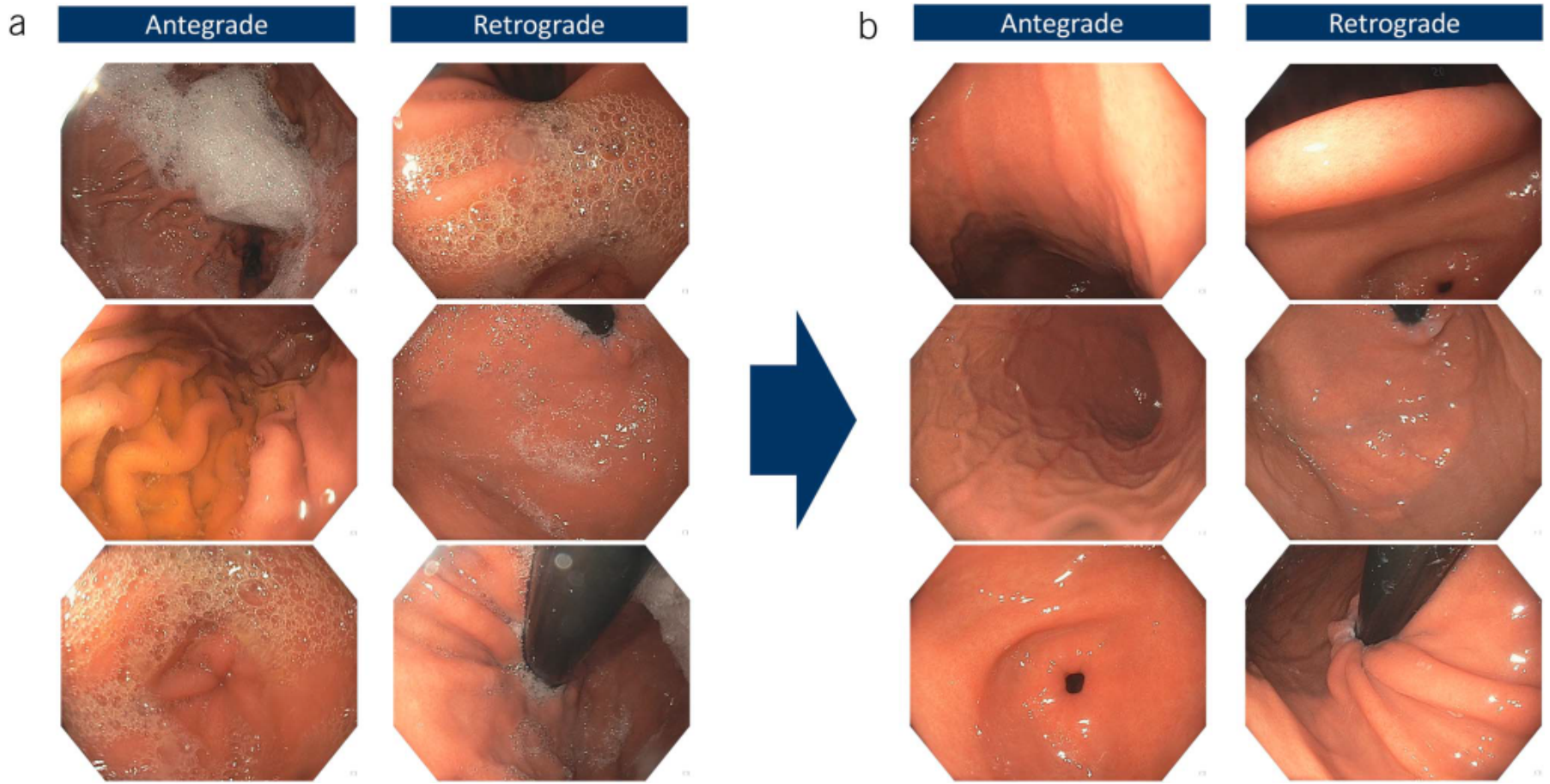


Buxbaum JL, et al. Gastrointest Endosc. 2017 Nov;86(5):857-865
Pimentel-Nunes P, et al. Endoscopy. 2012 Mar;44(3):236-46.
Pimentel-Nunes P, et al. Endoscopy. 2016 Aug;48(8):723-30.
Cho JH, Jeon SR, Jin SY. *World J Clin Cases* 2020; 8(14): 2902-2916

Adequate mucosal visualization

- 5-10% of gastric neoplasms are missed within 3 years of gastric cancer diagnosis (PMID 34958760, 30898522)
- Premedication with N-acetylcysteine and/or simethicone may improve mucosal visualization (PMID 35571469, 29037773)
- A 6-minute (range 5-7 minutes) minimum examination time (scope-in to scope-out) appears to increase detection of neoplastic lesions (PMID 37307142, 25117772, 28066945).
- Systematic photodocumentation of each gastric station and abnormal findings is an element of quality.
- In lower-incidence regions (United States), minimum of six stations recommended:
  - anterograde images: antrum, body-lesser, body greater
  - retrograde images: incisura, body, fundus-cardia

Adequate mucosal visualization

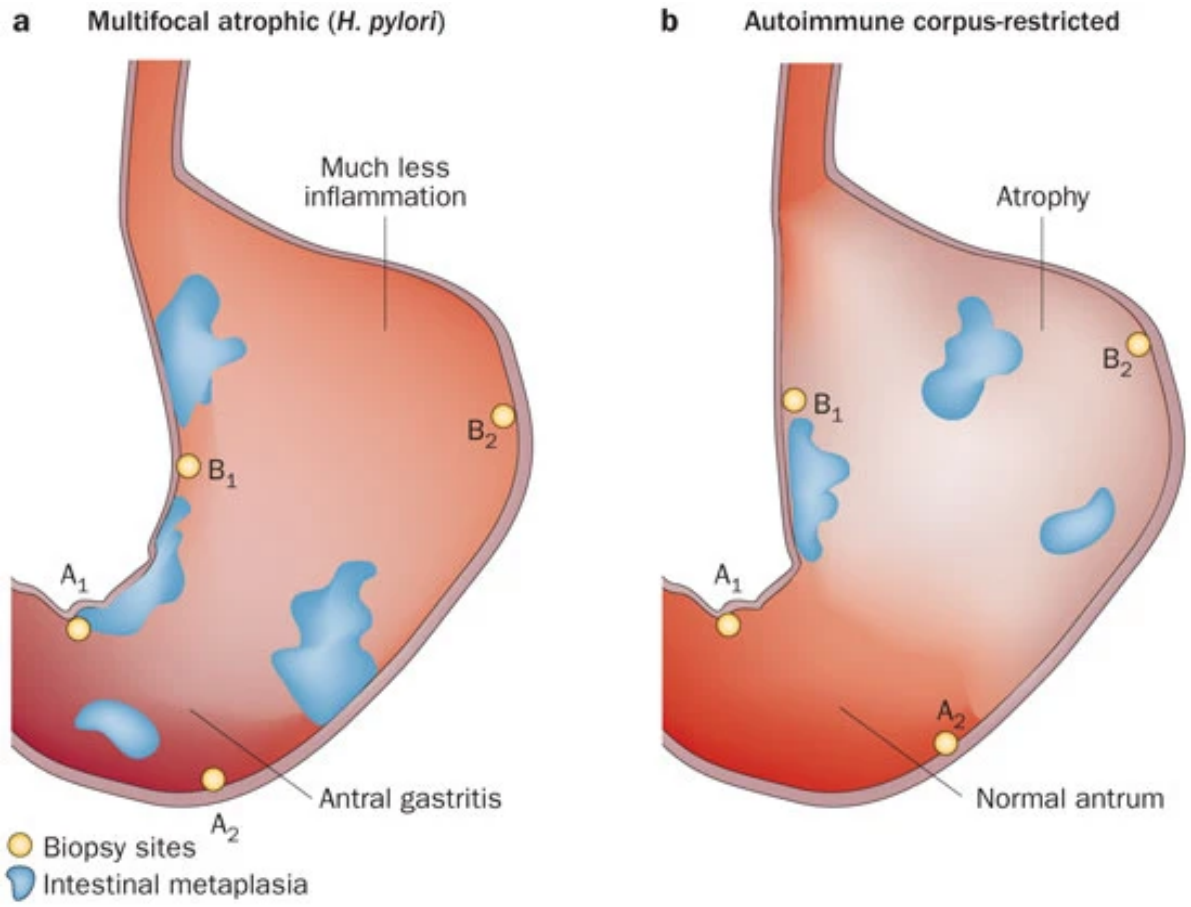


ACG Clinical Guideline: Diagnosis and Management of Gastric Premalignant Conditions (2025)

Sydney Protocol Biopsies, why?

- They provide important information on etiology of precursor lesions
- The provide ability to stage severity (*e.g.* topographic extension), which can inform surveillance intervals
- They provide a way to standardize reporting, such that interval progression/regression can be assessed.

Sydney Protocol – assess etiology of inflammation



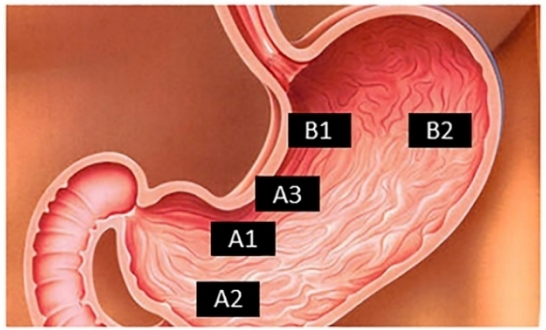
Nature Reviews Gastroenterology & Hepatology volume 10, pages 529–541 (2013)

Sydney Protocol Biopsies, how?

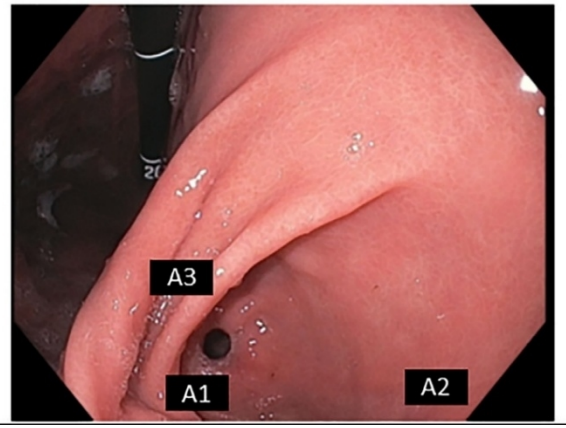
Gastric sampling with systematic biopsy protocol indicated for patients with:

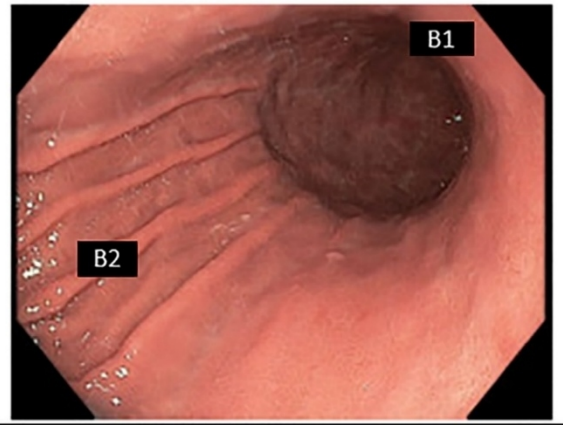
1) Known gastric pre-malignant condition (GPMC) or prior gastric cancer with indications for surveillance
2) Increased risk for gastric cancer of GPMC (e.g., family history of gastric cancer (first degree relative), foreign-born immigrants from high incidence regions

A 3) Endoscopic appearance concerning for GPMC



Sydney Protocol	
Antrum Biopsies (Jar A)	**Corpus Biopsies (Jar B)**
Antrum lesser curvature (A1)	Corpus lesser curvature (B1)
Antrum greater curvature (A2)	Corpus greater curvature (B2)
Incisura (A3)	





B

"Directed" biopsies – try to biopsy the **most severe-appearing mucosa** within each sector (not truly 'random' biopsies).

A1-A3 should be placed in **one jar**. B1 and B2 should be placed in a **second jar**.

Any visible lesions (elevated, depressed, abnormally colored, etc.) should be separately biopsied and placed in **separate jar(s)**.

Sydney Protocol Biopsies, in whom?

- Surveillance of known gastric precancerous lesions (CAG/GIM)
- Individuals at increased risk for gastric precancerous lesions based on FHx or immigration
- Suspected gastric precancerous lesions based on endoscopic appearance

ACG Clinical Guideline: Diagnosis and Management of Gastric Premalignant Conditions (2025)
ASGE/ACG Quality indicators for upper GI endoscopy (2025)

High-quality Histologic Reporting

- *H. pylori* presence (IHC or modified Giemsa)
- CAG and GIM severity (mild, moderate, severe/marked)
- GIM subtype (complete vs incomplete)

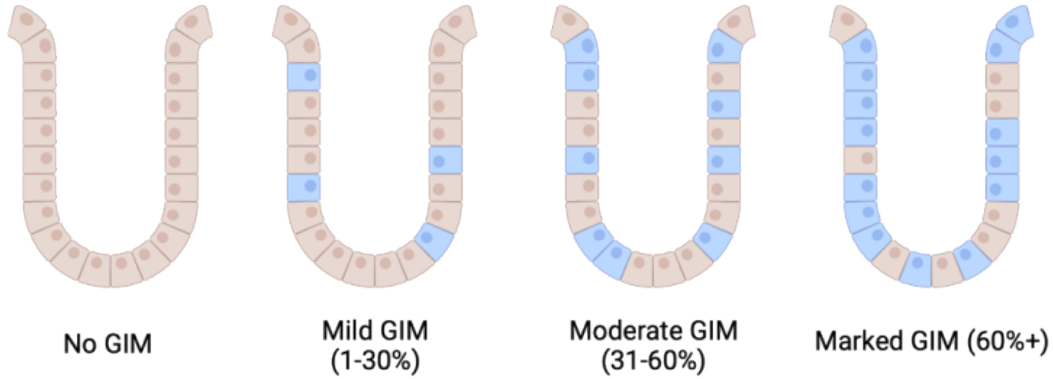
Gastroenterologists should collaborate with local pathology departments to achieve reporting of these histologic features.

ACG Clinical Guideline: Diagnosis and Management of Gastric Premalignant Conditions (2025)
ASGE/ACG Quality indicators for upper GI endoscopy (2025)
AGA CPU on Screening and Surveillance in Individuals Increased Risk (2025)

High-quality Histologic Reporting allows calculation of OLGA and OLGIM

OLGA and OLGIM Staging

Step 1: Assess severity of CAG/GIM in antrum and body based on % glandular involvement



Step 2: Combine antrum and body scores to calculate summary stage

OLGA/OLGIM Staging		Body			
		No CAG/GIM	Mild CAG/GIM	Moderate CAG/GIM	Marked CAG/GIM
Antrum and Incisura	No CAG/GIM	Stage 0	Stage 1	Stage 2	Stage 2
	Mild CAG/GIM	Stage 1	Stage 1	Stage 2	Stage 3
	Moderate CAG/GIM	Stage 2	Stage 2	Stage 3	Stage 4
	Marked CAG/GIM	Stage 3	Stage 3	Stage 4	Stage 4

Created with BioRender.com

Case #1 (continued)

A 60 year-old man is undergoing upper endoscopic evaluation for unexplained dyspepsia. The patient was born in the United States and has no family history of digestive cancer to either first- or second-degree. This is his first upper endoscopic evaluation. During endoscopy, CAG and GIM of the antrum are suspected. Systematic biopsies of the gastric mucosa are performed, inclusive of the antrum, incisura, and corpus. Biopsies from the antrum/incisura are placed in one jar, and biopsies from the corpus are placed in a second. After the endoscopic procedure, histology from the antrum/incisura reveals mild CAG and mild GIM, and the GIM is complete-type. Histology from the corpus reveals no significant abnormalities. There is no *H. pylori* and no dysplasia detected on any biopsy. What is an appropriate recommendation regarding surveillance for this individual?

Frequency of Surveillance CAG/GIM: Key points of Consensus

- Blanket surveillance of every case of CAG/GIM is not appropriate.
- There should be some attempt at risk stratification based on individual and disease-specific factors:
  - Individual risk factors: FDR with GC, immigrant from high-incidence nation, high-risk race/ethnicity
  - Disease-specific factors: extensive CAG/GIM, moderate-severe CAG/GIM, incomplete GIM
- Surveillance interval should usually be ~3 years. However, if multiple risk factors present, this can be reasonably shortened.
- Low-risk CAG/GIM (without any of the above features) should not be surveyed.

ACG Clinical Guideline: Diagnosis and Management of Gastric Premalignant Conditions (2025)
AGA CPU on Screening and Surveillance in Individuals Increased Risk (2025)
AGA CPU on CAG Diagnosis and Management (2021)

AGA Guideline on GIM Management (2020)
Gut, 2024. 73(10): p. 1607-1617. PMID: 39122364

What about the worried/anxious well?

- I usually attempt to explain the data presented above to low-risk patients.
- However, due to heterogeneity in reporting (both at endoscopist and pathologist level) this can lead to some uncomfortable situations.
- Some patients may not be comfortable with a ‘no surveillance’ plan, or may want sooner surveillance
- At the end of the day, physician and patient should practice shared decision making.
- Notably, insurance coverage for CAG/GIM surveillance is not necessarily guaranteed at this time.

Should we be SCREENING for CAG/GIM?

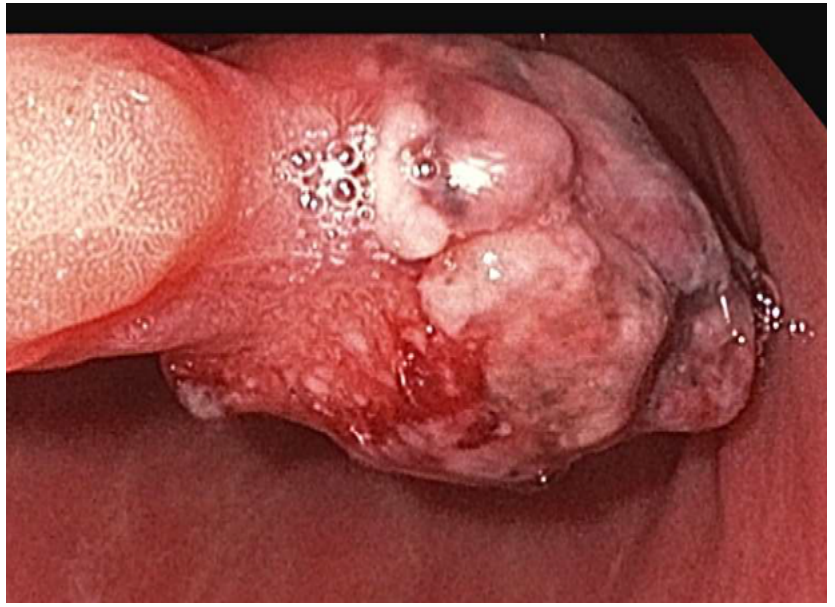
- The 2025 AGA CPU recommends screening of individuals at heightened risk (immigrants from high-incidence regions, high-risk race/ethnicity, FDR with GC, *etc.*)
- The 2025 ACG Guidelines make no recommendation for screening

Currently, there is no consensus on screening of asymptomatic individuals for gastric precancerous lesions.

ACG Clinical Guideline: Diagnosis and Management of Gastric Premalignant Conditions (2025)
AGA CPU on Screening and Surveillance in Individuals Increased Risk (2025)

Case #2

A 60 year-old female patient is referred to your clinic for evaluation of iron-deficiency anemia and symptoms of dyspepsia. She has not previously undergone upper endoscopic evaluation. She was diagnosed by non-invasive testing with *H. pylori* 6 months previously, treated with a course of antibiotics, and had testing to confirm eradication. During upper endoscopy, the following solitary lesion is encountered in the gastric pre-pyloric region *(**right image**)* measuring 12 mm in diameter. What is the appropriate management?



Gastric polyps associated with gastric precancerous lesions

- *H. pylori* infection is associated with both development of gastric hyperplastic polyps and adenomas
  - Hyperplastic polyps: antrum > body, can be solitary or multiple, neoplastic risk (2-20%) increases with size. May be a source of GI blood loss if large and ulcerated. For larger polyps (>10 mm), biopsy alone are insufficient to detect underlying neoplasia – therefore resection indicated. Can regress following *H. pylori* eradication.
  - Adenomas *(intraepithelial neoplasia)*: can be antrum or body, is considered dysplasia and should be completely resected. Endoscopic surveillance is indicated.
- Autoimmune gastritis can also be associated hyperplastic polyps (in the corpus due to chronic inflammation) and adenomas. In addition, autoimmune gastritis is also associated with gastric neuroendocrine tumors (gNETs).
  - gNET: located in proximal stomach (corpus/fundus – location of parietal cells), result from hypergastrinemic state leading to enteroendocrine cell hyperplasia, considered type I (appropriate hypergastrinemia). Should be resected when diagnosed. May be multiple, and may recur. Surveillance indicated.

Systematic biopsies (Sydney protocol) is essential if any non-fundic gland polyp (hyperplastic polyp, adenoma, gNET) is suspected.

ACG Clinical Guideline: Diagnosis and Management of Gastric Premalignant Conditions (2025)
ASGE/ACG Quality indicators for upper GI endoscopy (2025)
Clin Gastroenterol Hepatol. 2013 November ; 11(11): 1374–1384.
Gut 2010 59: 1270-1276

Take-Home Points

- High-quality upper endoscopic performance incorporates the following elements:
  - Adequate mucosal visualization and use of image-enhanced endoscopy
  - Sydney protocol biopsies with at least 2 separate bottles (antrum/incisura; body) and separate targeted biopsies of any visible lesions in select patients (known, suspected, or at risk for CAG/GIM)
  - Gastroenterologists should collaborate with pathologists to ensure reporting of severity of CAG/GIM, and subtype of GIM (complete vs incomplete)
- Surveillance of gastric precancerous lesions should incorporate some effort at risk stratification. Low-risk CAG/GIM should not be routinely surveyed.
- There is currently no consensus on screening for gastric precancerous lesions
- Certain gastric polyps (hyperplastic polyps, adenomas, gNETs) are associated with gastric inflammatory conditions (*H. pylori*, autoimmune gastritis). Sydney protocol biopsies should be performed if any of these polyps are suspected.

Thank you for your kind attention!