BARRETT’S ESOPHAGUS – CASES AND PRINCIPLES

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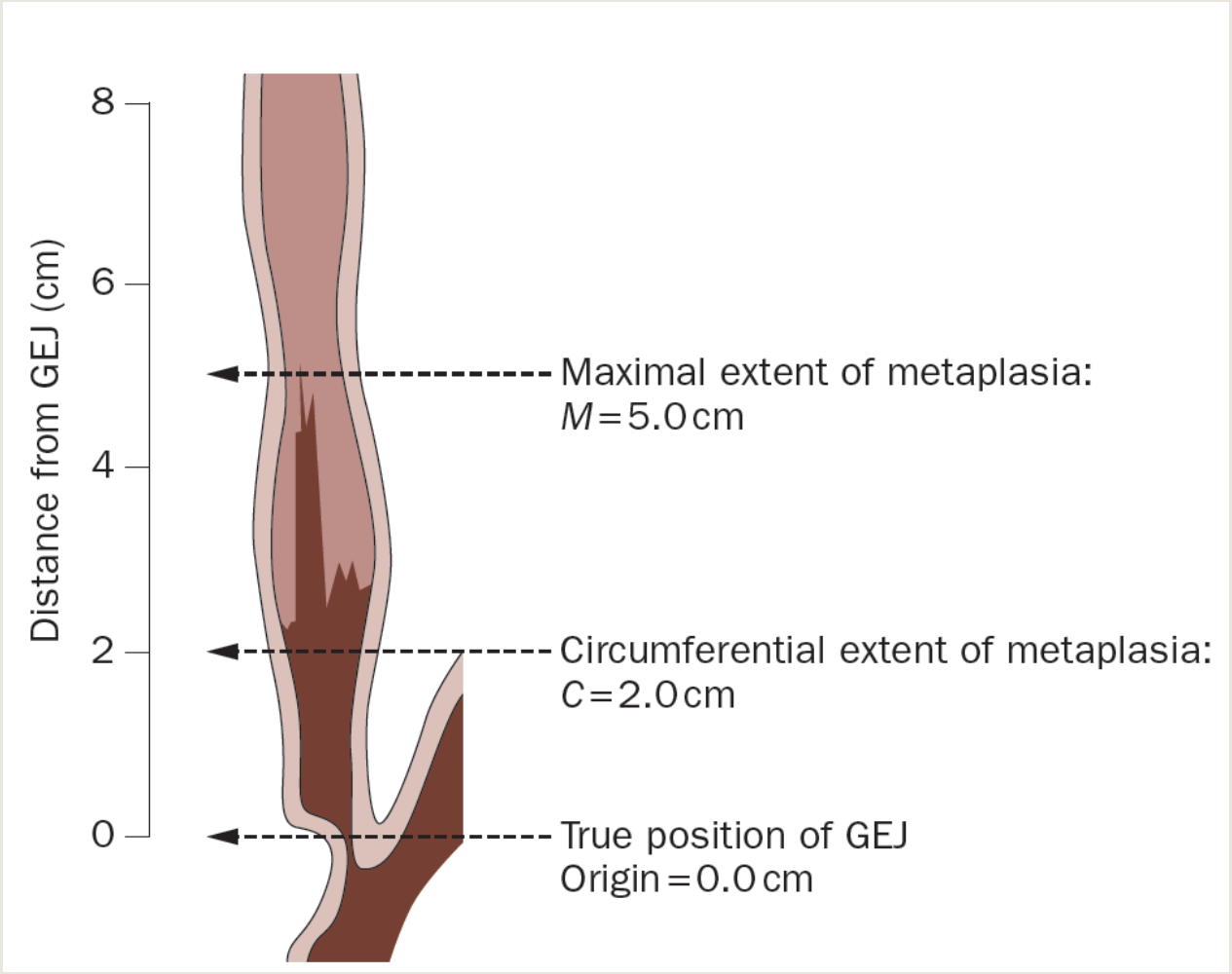
ASEP 2026
CANMORE

AGENDA

1. Barrett’s Detection
2. Endoscopic Eradication
3. Surveillance after eradication

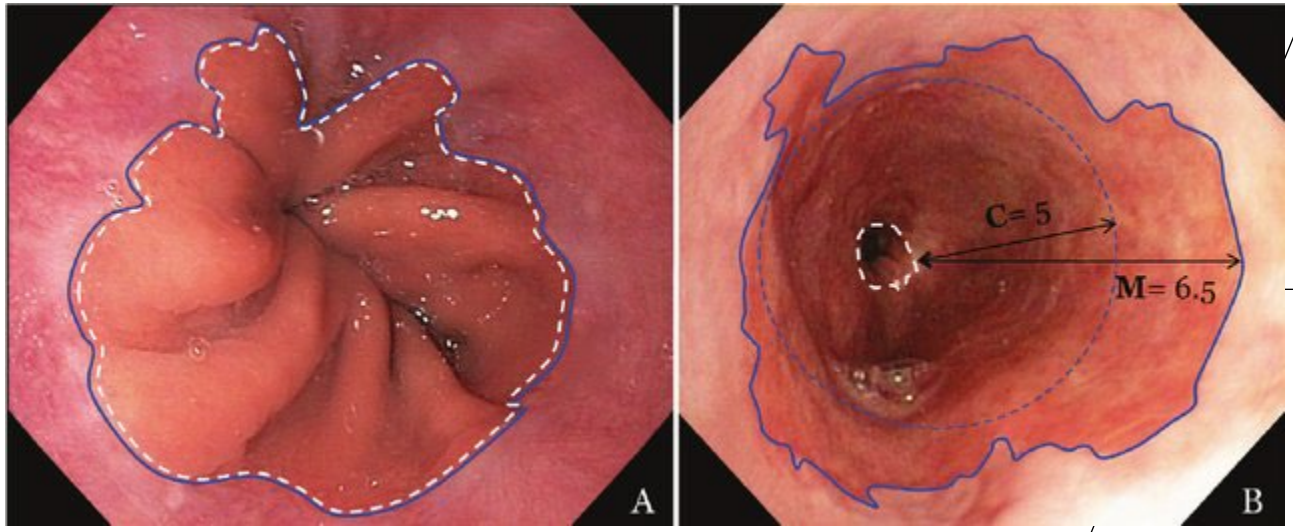
WHAT'S NEW IN DETECTION OF BARRETT'S ESOPHAGUS

BRINGING BACK THE CLASSICS– PRAGUE C & M CLASSIFICATION



Sharma et al., Gastro 2006; 131:1392-99

WHERE IS GEJ?



Identification of GEJ is one of the challenging aspect of defining true length of Barrett's

Definition of GEJ

- "The proximal limit of linear gastric mucosal folds is the most practicable indicator of the gastroesophageal junction (GEJ) in the presence of suspected Barrett's esophagus in routine diagnostic endoscopic practice.
- This is best visualized when the esophagus is distended minimally to the point that the proximal ends of the gastric folds appear."

Fiocca et al., Dig Liv Dis 2011; suppl 4:S319-30
Sharma et al., Gastro 2006; 131:1392-99

PRAGUE CLASSIFICATION

- **Tracks the length and involvement of the esophagus over time**
- **Improved neoplasia classification**
  - 27% referrals with LGD BE and no lesions from community centers are identified to have a visible lesion that requires endoscopic resection
- **Common language to communicate esophageal abnormalities to colleagues, expert centers**

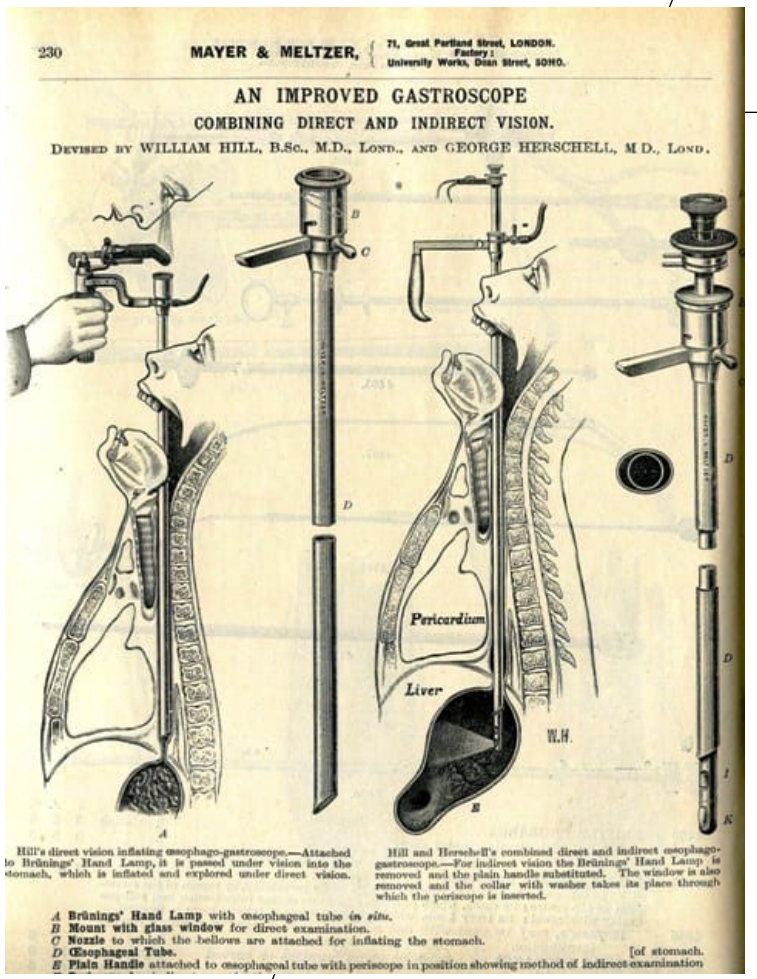
Areia et al., ESGE quality improvement initiative 2025; Endoscopy 2025
Weusten et al., ESGE Barrett's guidelines Endoscopy 2023

UGI QUALITY INDICATORS FOR A GOOD QUALITY EGD – 2025

>20 page document

- **Prague classification is important for documentation of Barrett's**
  - Systematic reporting increases neoplasia detection (landmarking GEJ and following C/M classification)

- Adequate inspection time is ~ 1min for 1cm of BE
- ESGE recommend minimum 7min for standard EGD **without** biopsies (not BE)
  - BE surveillance is going to be >7 min...



Mayer and Meltzer catalogue 1914 image
Pohanka et al., CGH 2018
Areia et al., ESGE quality improvement initiative 2025; Endoscopy 2025

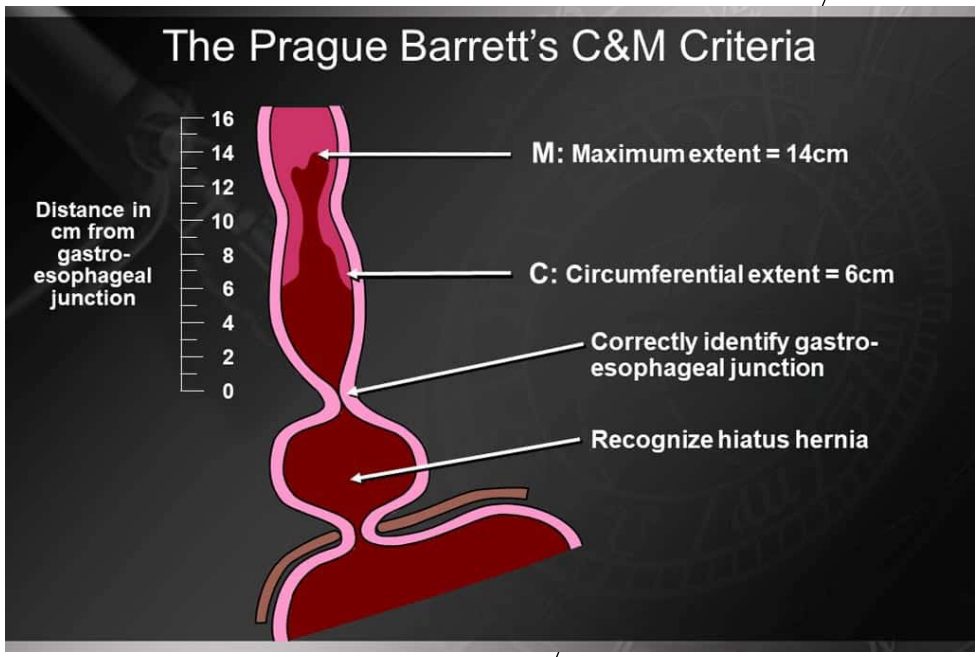
PRAGUE AND SEATTLE TOGETHER – A MATCH MADE IN THE ESOPHAGUS

- **Systemic sampling (aka Seattle protocol) and expert pathology review of BE increases detection of early stages / high risk dysplasia**
  - Upgrade LGD to HGD in ~ 26% of patients
  - EAC even detected in up to 11% (including advanced staged ones – LVI)
- **Targeted biopsies of abnormalities on chromoendoscopy did not improve detection compared to Seattle protocol biopsies**

Areia et al., ESGE quality improvement initiative 2025; Endoscopy 2025

HOW TO ASSESS BARRETT'S ESOPHAGUS

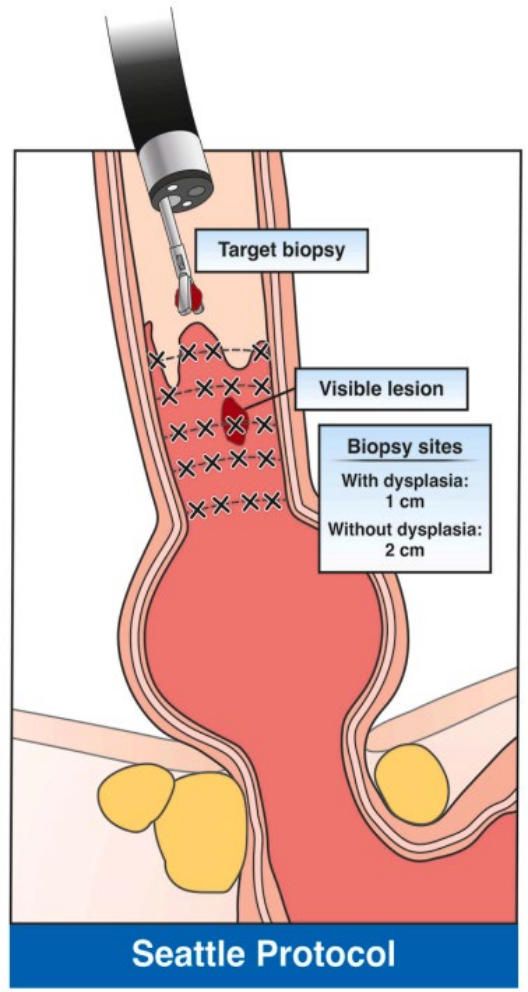
1. Use HD scope
2. Wash the esophagus, and consider acetic acid application
3. Complete UGI evaluation
4. Examination upon withdrawal of scope (document location from incisors)
   A. Diaphragmatic pinch (?hiatal hernia)
   B. Top of gastric folds - GEJ
   C. Circumferential extent (C)
   D. Maximal extent (M)



IWGCO website

HOW TO COMPLETE BARRETTS ASSESSMENT

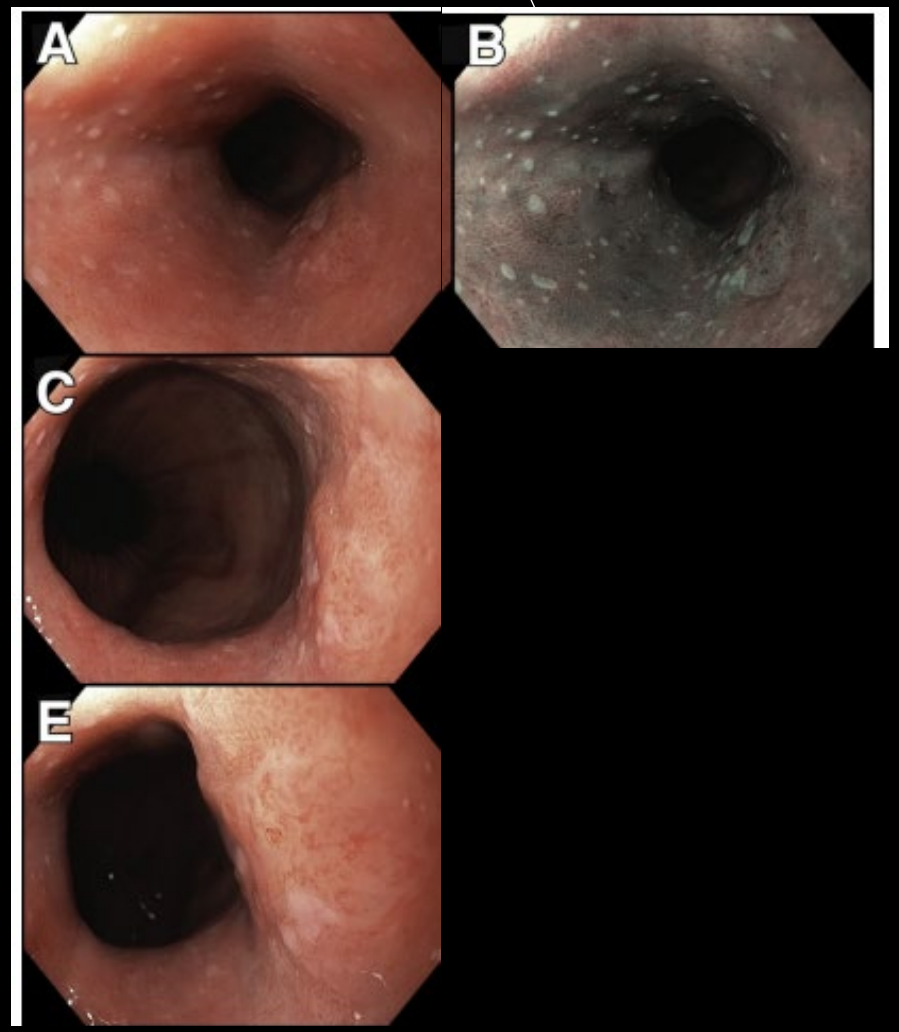
7. Reintroduce scope back into stomach, retroflex and confirm no lesions
8. WLE + acetic acid assessment
9. Complete chromoendoscopy and landmark red flag areas
    - Target biopsies (pictures ok too)
    - Seattle protocol biopsies (include GEJ/ gastric cardia)



Wani et al., AGA guidelines. Gastroenterology 2025;169:1184–1231

HOW TO ADMINISTER ACETIC ACID IN THE PROTOCOL

- Virtual (NBI, Iscan) and acetic acid improve neoplasia detection and are both equivocal
  I. Dilute acetic acid 1:1 in 60cc syringe (2.5%)
  II. Use at least 20-30cc and inject directly from syringe. GO SLOW!
  III. Start distally and make your way up the esophagus.
  IV. Consider HOB elevation to reduce aspiration
  V. Wait a few min and then evaluate esophageal lining



CASE 1

WHERE IS THE LESION?

WLE AND NBI

Boerwinkel et al., Gastro 2014; 146:3; 622-29

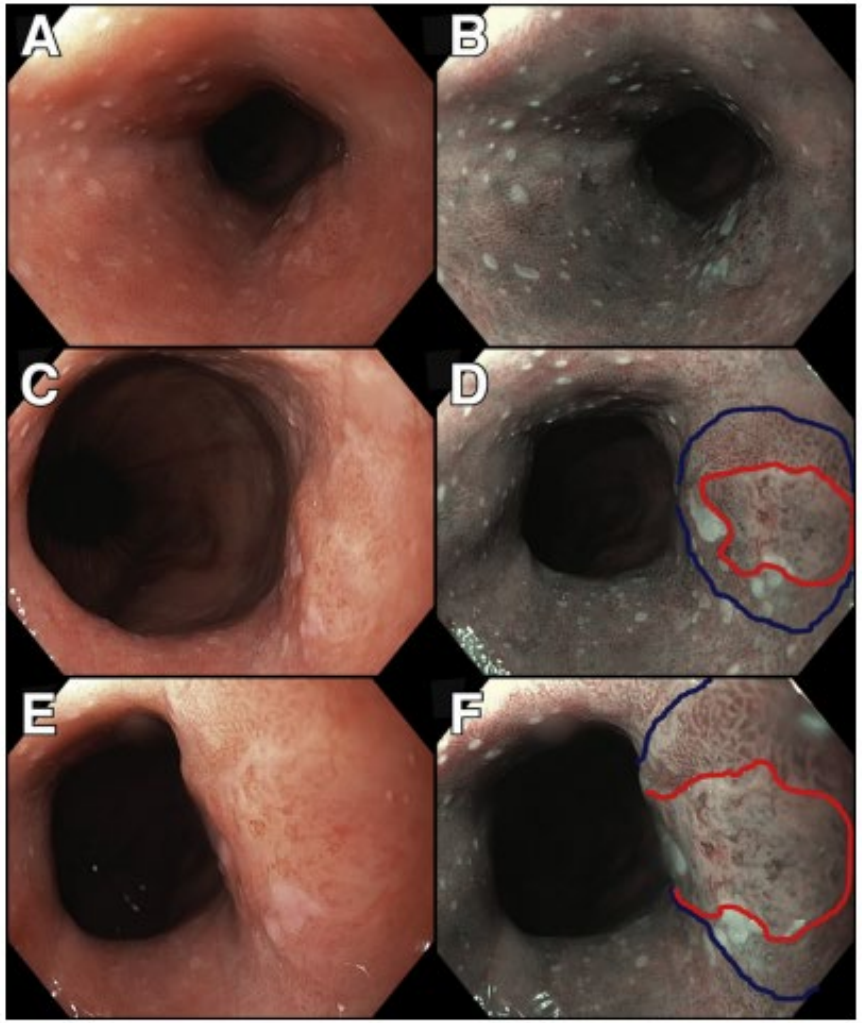


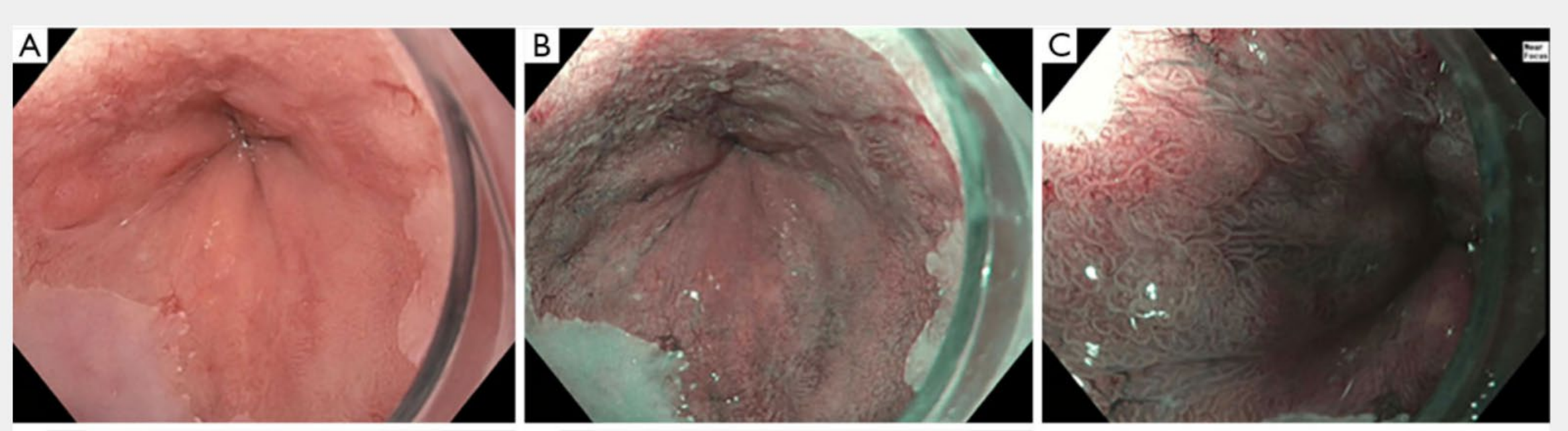
Figure 3. Overview, detailed, and near-focus images of a neoplastic lesion in BE with (*A*, *C*, and *E*) WLE and (*B*, *D*, and *F*) NBI. The *red lines* indicate the border of the vascular and mucosal abnormalities based on the NBI appearance, and the *blue lines* illustrate the extension of the neoplastic lesion based on the mucosal relief, which can be better appreciated with NBI compared with WLE.

HOW NBI HELPS EVALUATION OF A LESION VISIBLE ON WLE

Boerwinkel et al., Gastro 2014; 146:3; 622-29

CASE 2

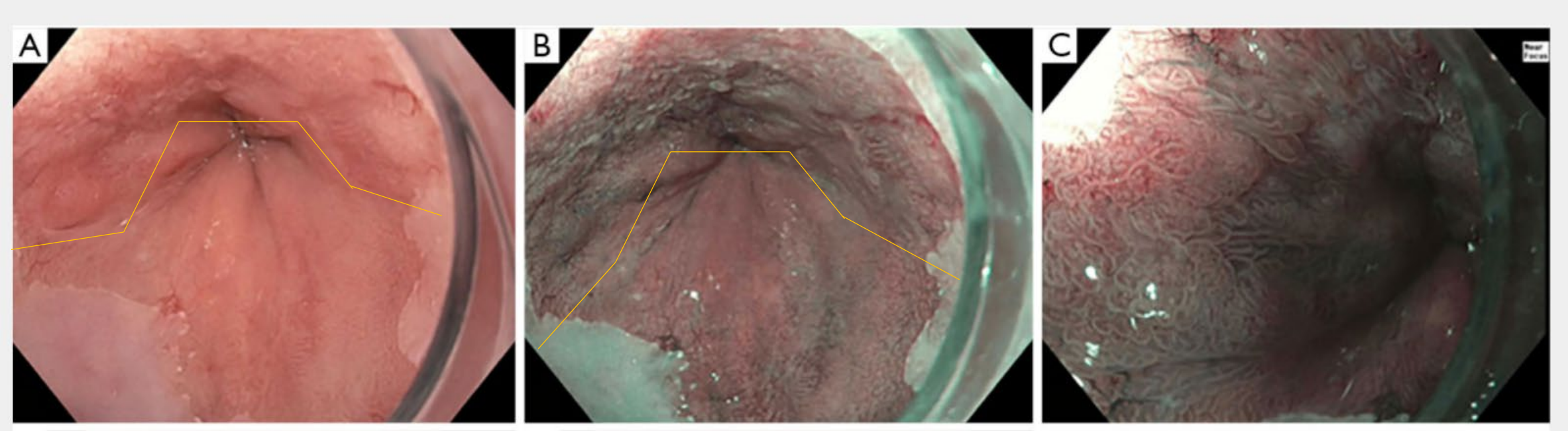
WLE AND NBI ON DYSPLASTIC BARRETT'S



Jennifer Kolb and Sachin Wani. Translational Gastro Hep 2021 Jan5.

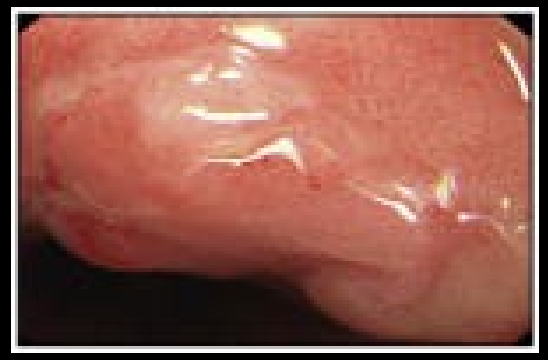
CASE 2

WLE AND NBI LOOKING AT DYSPLASTIC BARRETT'S

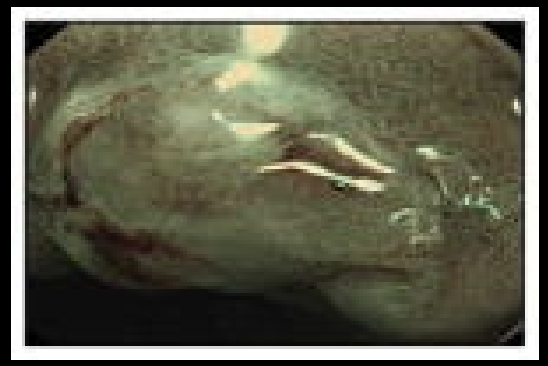


Jennifer Kolb and Sachin Wani. Translational Gastro Hep 2021 Jan5.

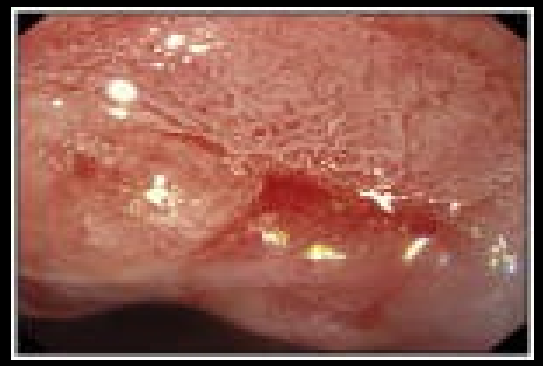
WLE, NBI AND ACETIC ACID IMPACT ON BARRETT'S



WLE



NBI



Acetic acid

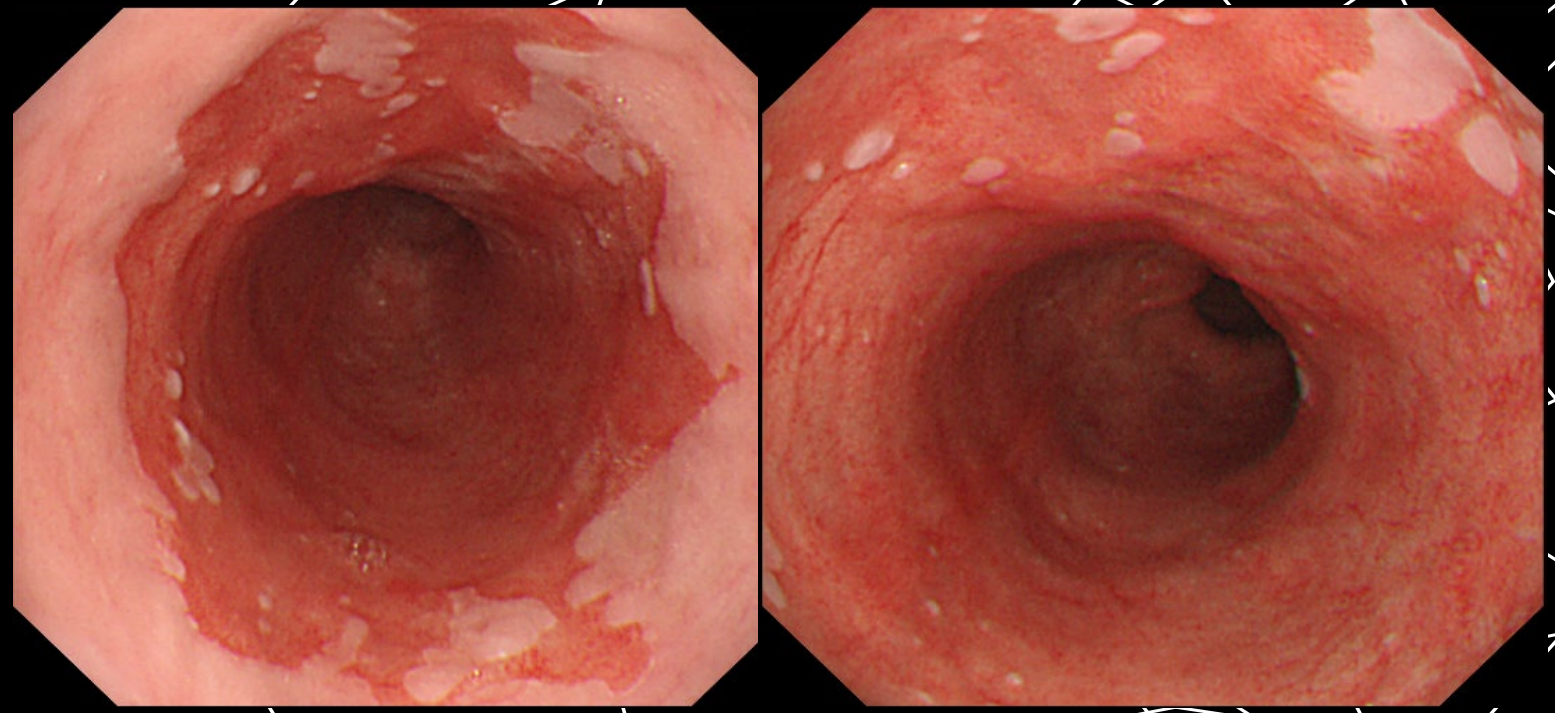
Eluri and Shaheen. CGH 2013 review

A Case of Subtle abnormalities

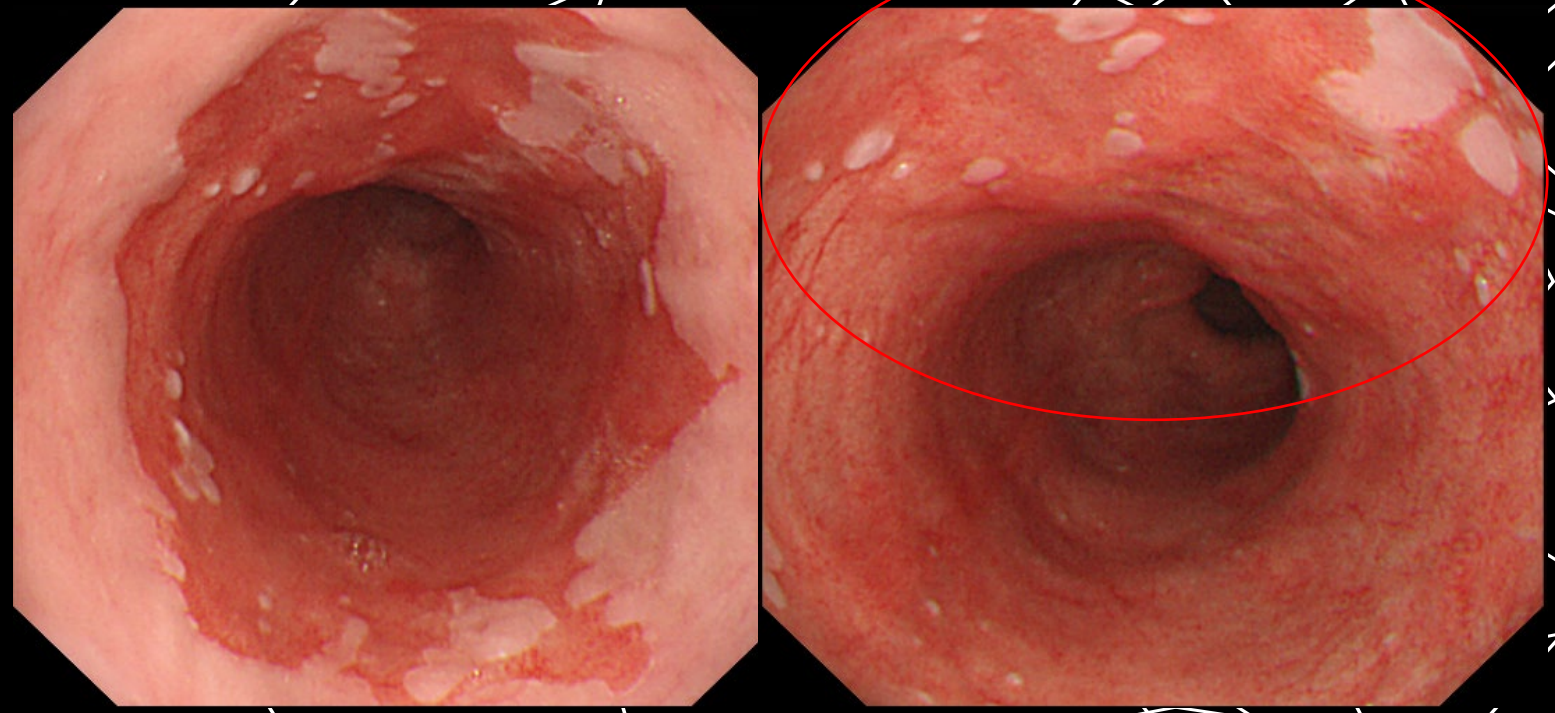
68 year old male patient

C9M10 BE with a subtle visible abnormality upon WLE

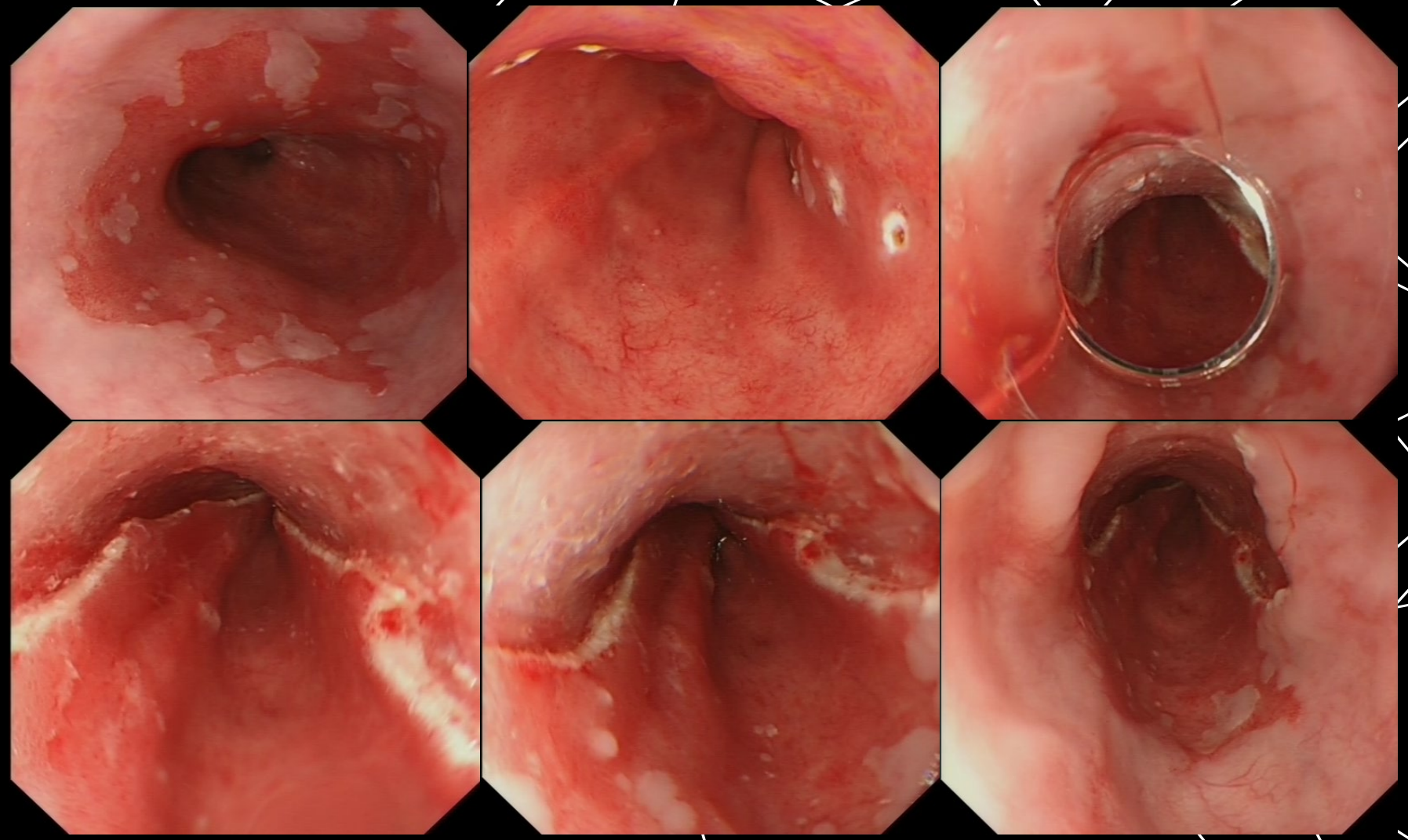
Treatment: piecemeal endoscopic resection



Courtsey Dr. J.J. Bergman/Best Academia



SUBTLE ABNORMALITIES



Courtsey Dr. J.J. Bergman/Best Academia

NOT SO SUBTLE - *HISTOPATH CONCLUSION*

Poorly differentiated adenocarcinoma

Signet-ring cells

Deep submucosal infiltration

Vaso-invasion

NOT SO SUBTLE - *HISTOPATH CONCLUSION*

Poorly differentiated adenocarcinoma

Signet-ring cells

Deep submucosal infiltration

Vaso-invasion

Esophagectomy

POINTERS FOR IDENTIFYING BARRETT'S

- Take your time – it'll go a long way
- Landmarking GEJ is important
- Prague classification, chromoendoscopy and Seattle protocol will improve your detection game
- If you don't know what you are looking at, use acetic acid and stick to Seattle protocol - it will provide a safety net for detection

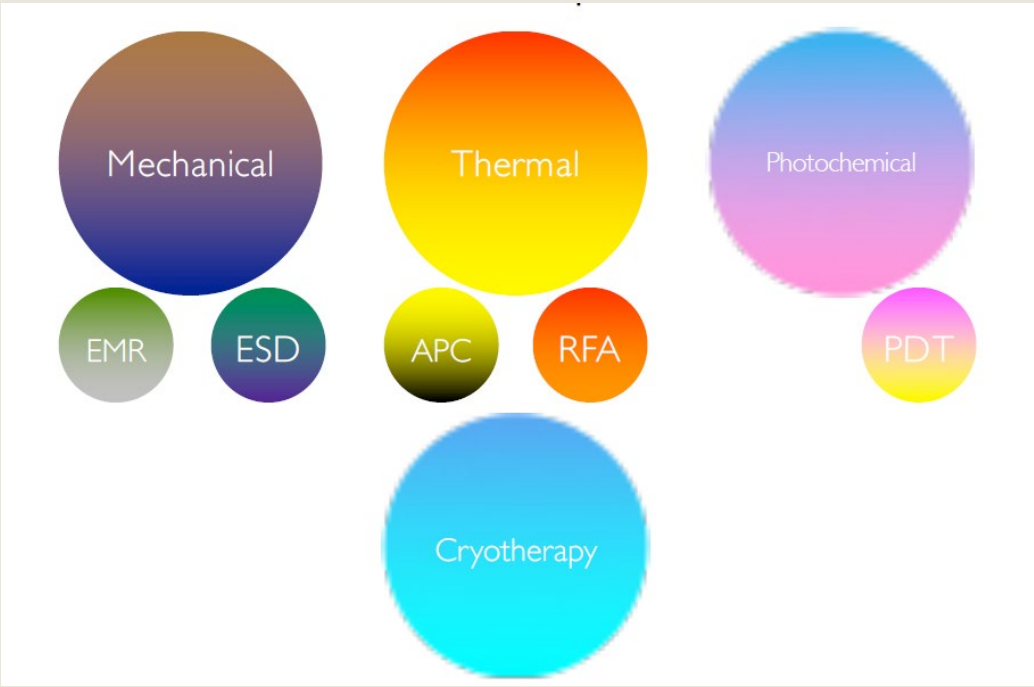
Table 1. Relative Potency of PPIs[1]

Drug	Omeprazole Equivalent
Pantoprazole 20 mg	4.5 mg
Lansoprazole 15 mg	13.5 mg
Omeprazole 20 mg	20 mg
Esomeprazole 20 mg	32 mg
Rabeprazole 20 mg	36 mg
Dexlansoprazole 30 mg[2]	50-60 mg

1. Based on the percentage time gastric pH is >4 over a 24-hour period with once-daily dosing. Adapted from DY Graham and A Tansel. Clin Gastroenterol Hepatol 2018; 16:800.
2. Compared to twice-daily use of other PPIs, once-daily dexlansoprazole is less "potent".

The Medical Letter on Drugs and Therapeutics

WHAT'S NEW IN ENDOSCOPIC TREATMENT OF BARRETT'S ESOPHAGUS?

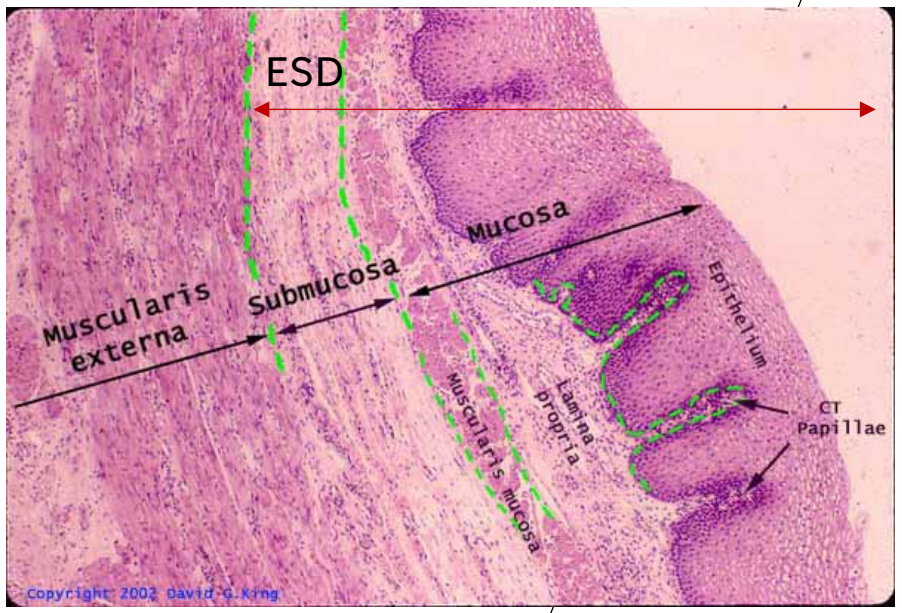


Courtesy Dr. C.Wong

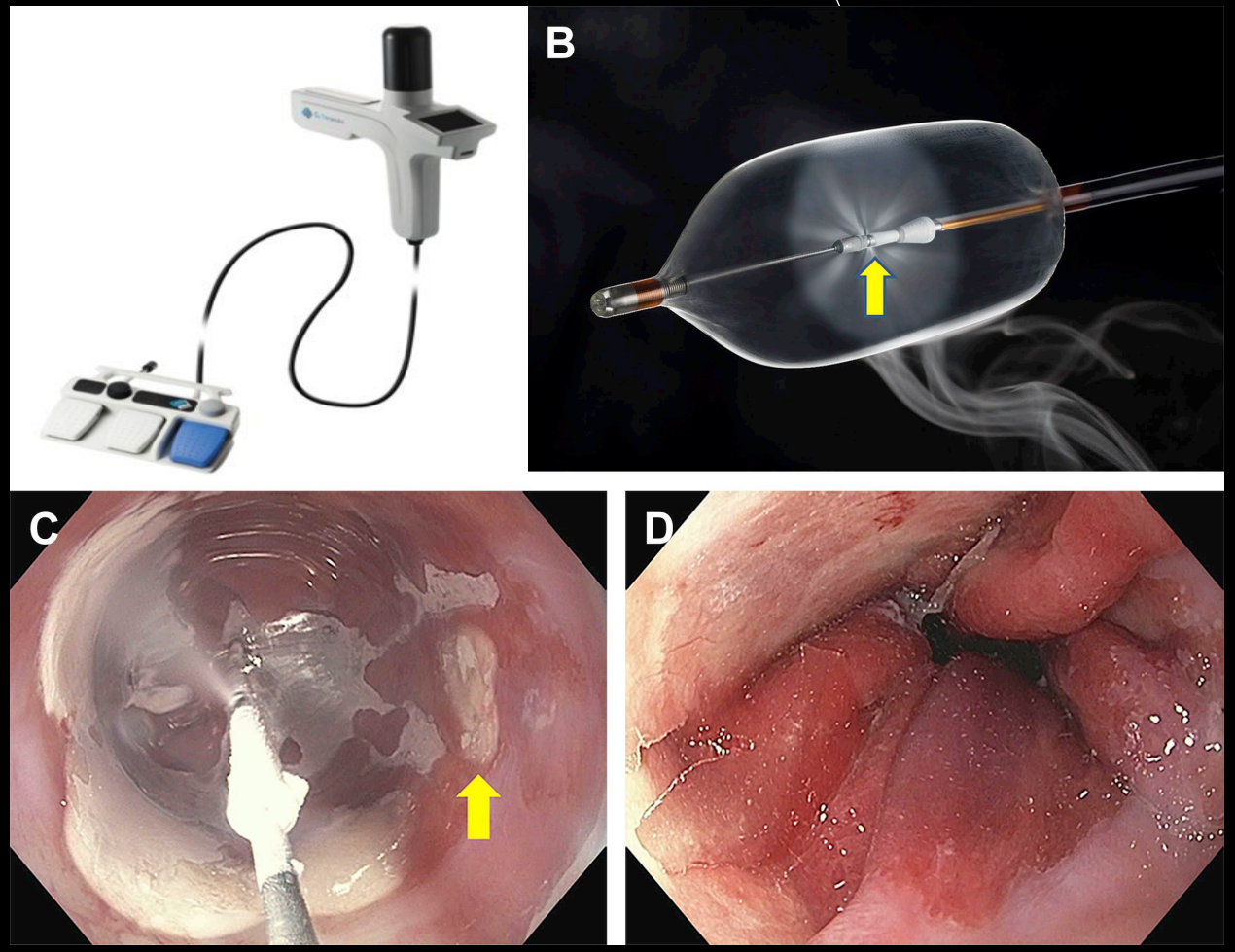
CRYOTHERAPY IS AVAILABLE!

- Endoscopic Eradication Treatment (EET) is the mainstay of treatment in Barrett's
- RFA, EMR, APC, ESD and now Cryotherapy are available in AB
- Currently used after RFA fails, but might have value in earlier use…

EMR, Cryo, RFA, APC



Histology at SIU



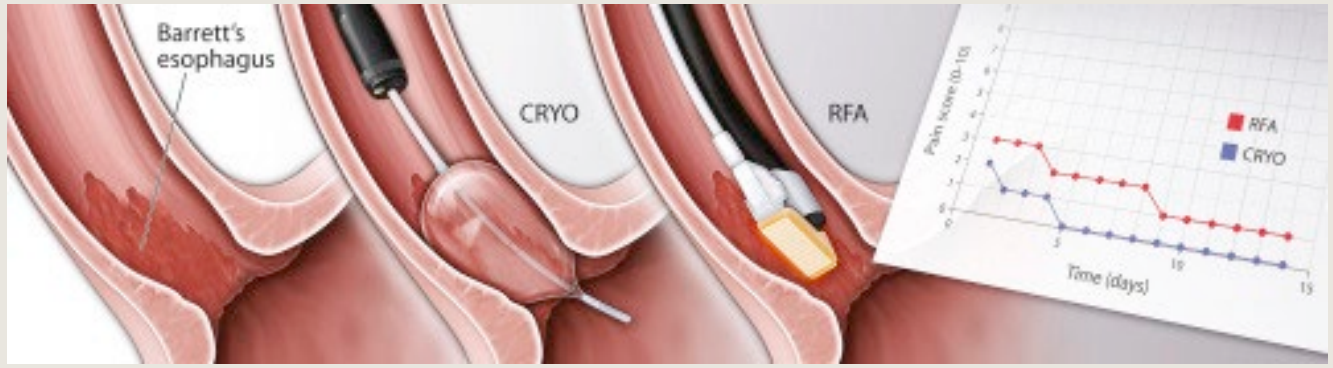
CRYOTHERAPY EQUIPMENT

Courtesy John Hopkins

PAIN LESS INTENSE IN CRYOTHERAPY COMPARED TO RFA

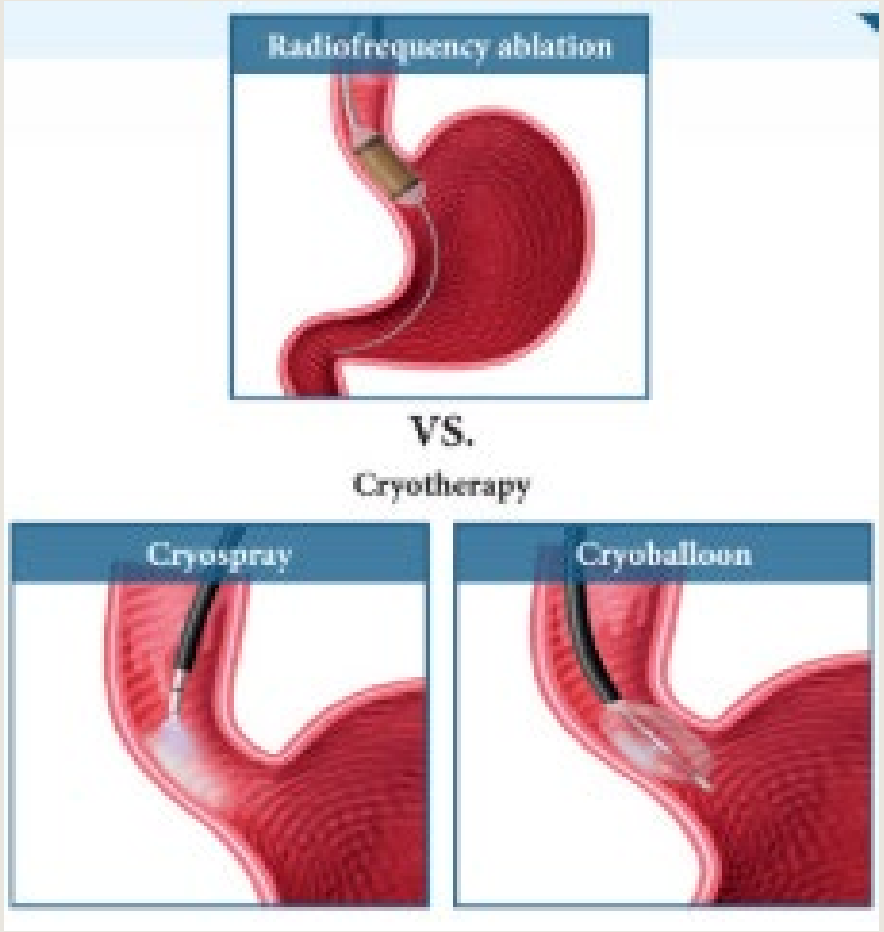
Evidence from 2018

- Short segment Barrett's response with either RFA or Cryotherapy was equivocal (short duration (3mon))
- Less pain treated with Cryo vs. RFA
- Similar experience with long segments in our clinical experience



Van Munster et al., GIE 2018; 88:5; 795-803

CRYOTHERAPY 2ND LINE



2018 meta- analysis

Cryotherapy serves as a viable alternative for patients who have failed RFA

Achieves CED in ~ 76% and CEIM in ~46% of cases.

Visrodia et al., GIE 2018
Gomes et al., Clin Endo 2024 Mar57(2)

EFFICACY AND COMPARATIVE ANALYSES OF EET

Type of treatment	CED (95% CI)	CEIM(95% CI)	Recurrence of BE (%)	Stricture development (adverse event)
RFA (19 studies)[1]	91% (95%CI: 87–95)	78% (95%CI: 70–86)	13% (95%CI: 9–18)	5% (95%CI: 3–7)
APC (38 studies) [2]	n/a	86.8% (95%CI: 83.5–90.2)	16.1% (95%CI: 10.7–21.6)	1.7% (95%CI: 0.9–2.6
Cryotherapy (4 studies) [3]	84.2% (95%CI: 79.1–89.3)	64.1% (95%CI: 49.2–79.0)	8.3%	6.5% (95%CI: 4.1–9.0)
RFA vs. Cryo (3 studies) [4]	Risk diff -0.15 to 0.09, p=0.64	Risk diff -0.25 to 0.19; p-0.78	RD, 0.09; 95% CI, –0.02 to 0.19; *p*=0.12	NS

1. Orman et al., CGH 2013
2. Kozyk et al., Gut liver 2024 May
3. Papefthymiou et al., Cancers 2024 Aug
4. Gomez et al., ., Clin Endo 2024 Mar57(2)

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RFA and Cryotherapy appear to be equivalent, with less pain and less strictures with Cryo

1. Orman et al., CGH 2013
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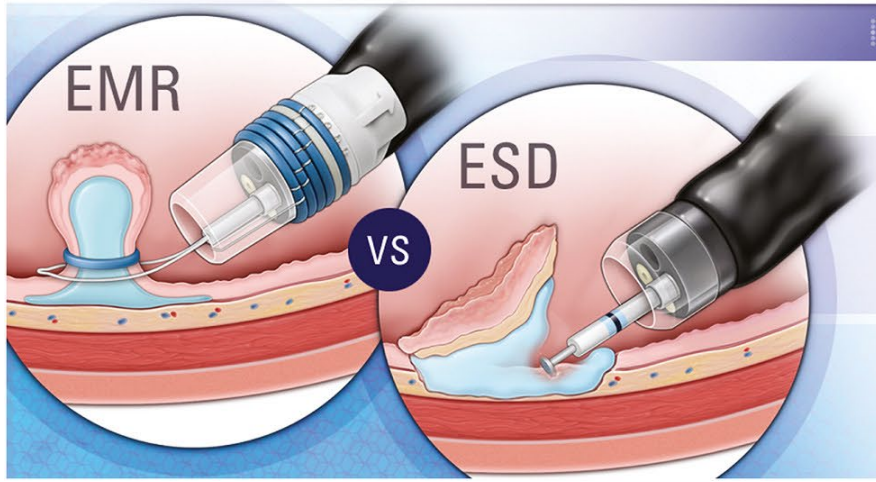
3. Papefthymiou et al., Cancers 2024 Aug
4. Gomez et al., ., Clin Endo 2024 Mar57(2)

ESD VS. EMR

- Most lesions can be managed with EMR with good results
- Consider ESD if
  - Lesion is Paris IIa + c or IIc, bulky or highly suspicious for T1b
  - Failed EMR

EMR versus ESD for Barrett's Neoplasia and Esophageal Adenocarcinoma



Systematic Review and Meta-Analysis | 11 studies, 2209 total patients

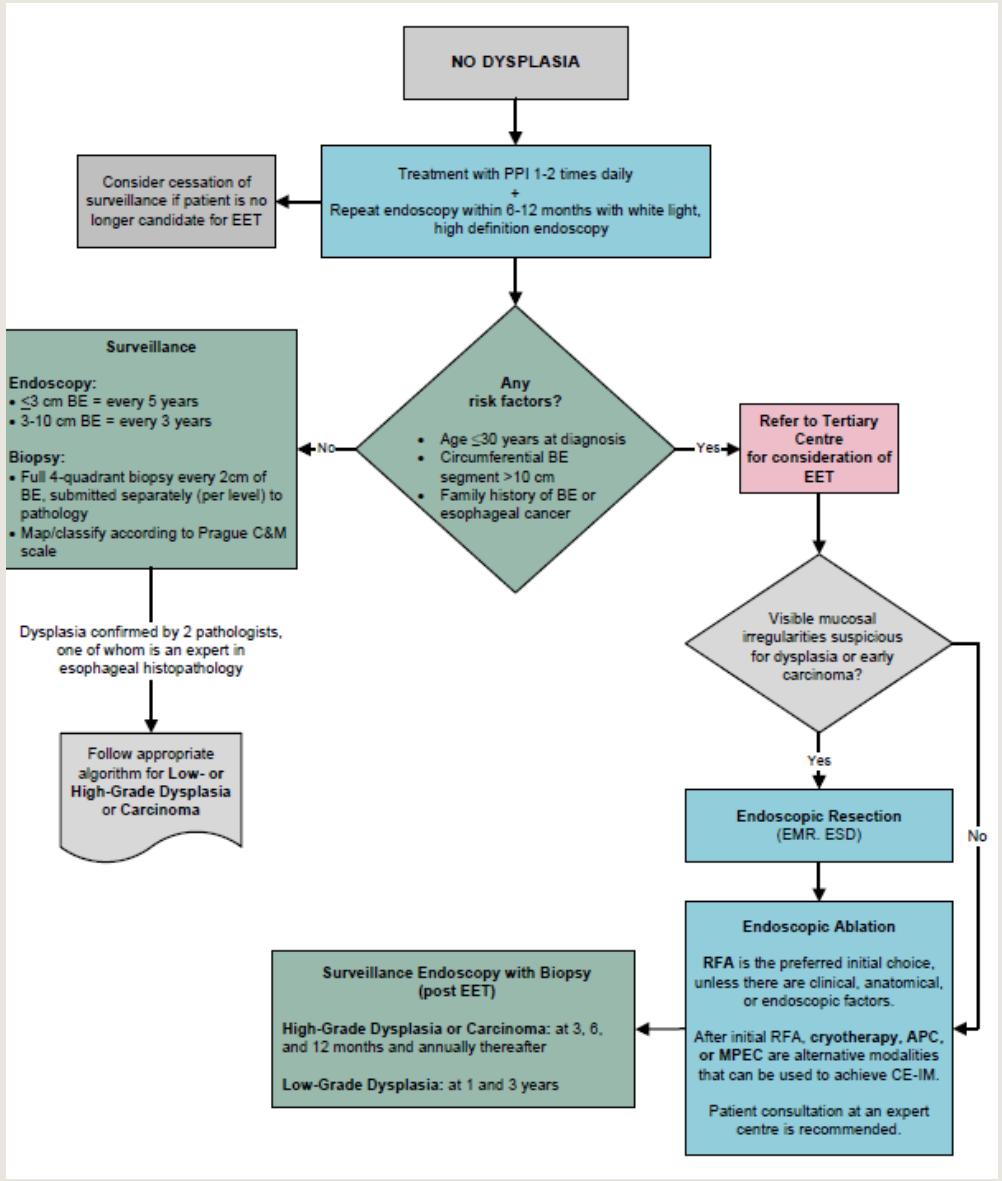
	Outcomes	Odds ratio of ESD to EMR (95% CI)	p-value
Primary	En Bloc Resection	31.53 (10.02 - 99.19)	<0.01
	R0 Resection	5.73 (2.32 - 14.16)	<0.01
	Curative Resection	3.49 (0.86 - 14.14)	0.080
	Complete Remission of Dysplasia	0.92 (0.37 - 2.26)	0.86
	Local Recurrence	0.35 (0.11 - 1.04)	0.058
Secondary	Bleeding	0.67 (0.30 - 1.50)	0.33
	Perforation	1.82 (0.50 - 6.67)	0.36
	Postoperative Stricture	1.01 (0.58 - 1.75)	0.98

Fujiyoshi et al., GIE 100(5); 817-28. 2024
Weusten et al., ESGE Barrett's guidelines Endoscopy 2023

ALBERTA GUIDELINES 2024

Blends European and American guidelines to best fit our clinical needs and capacities …

PATIENT HAS NO DYSPLASIA ON BX…

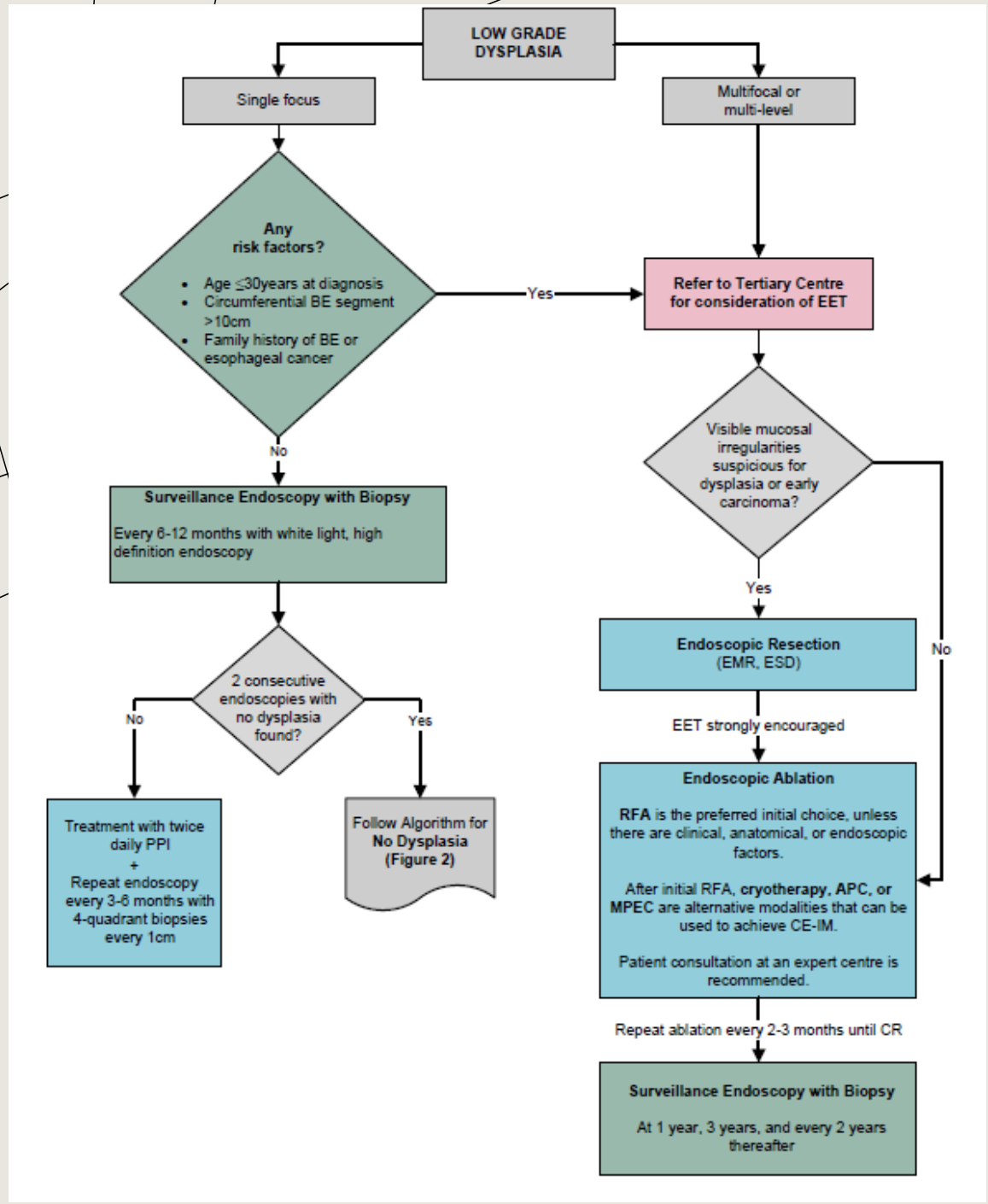


No treatment

Some unique circumstances can be considered for EET, but extremely rare

EET is not curative in NDBE

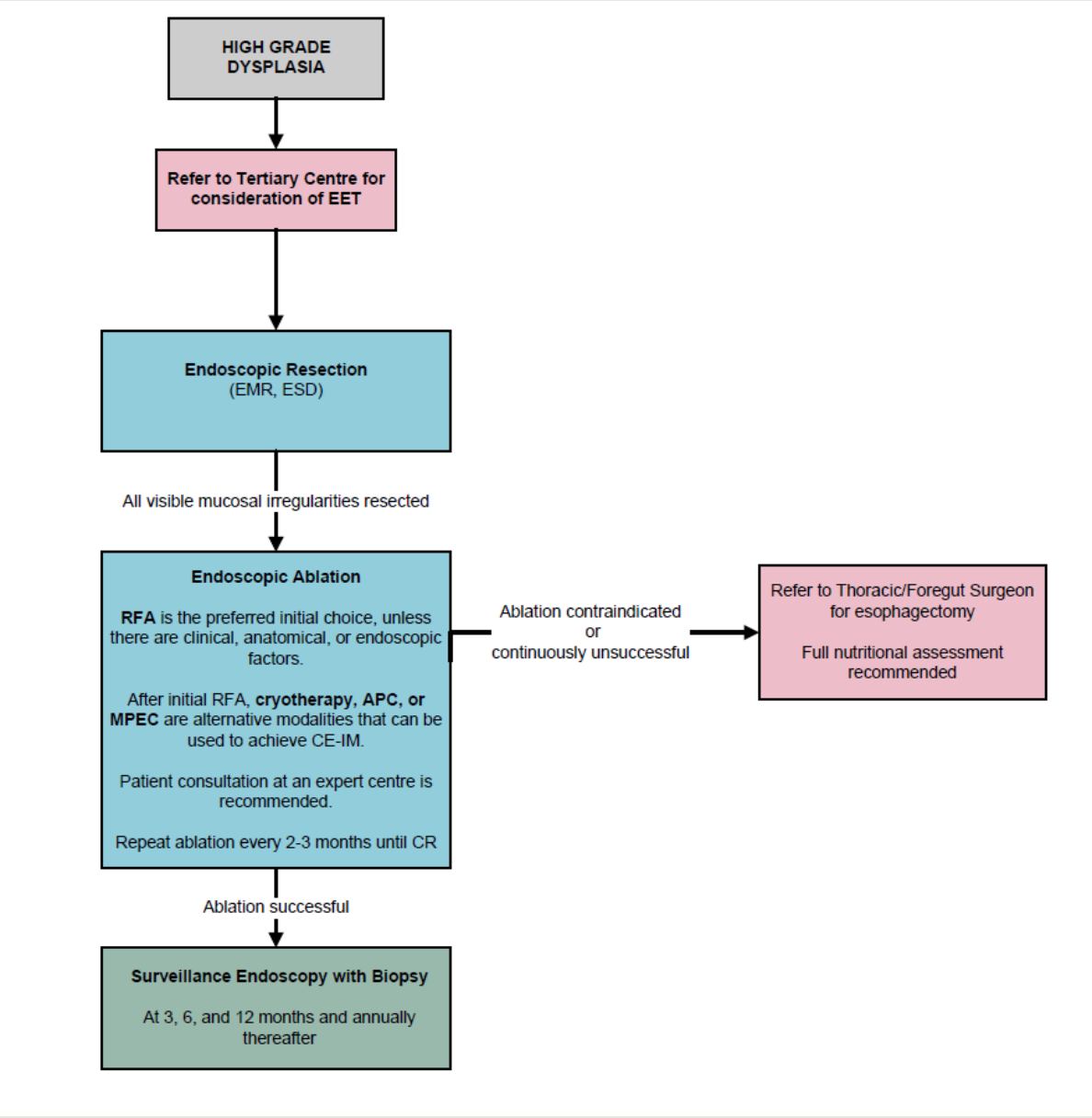
Keep surveillance at 3-5y



PATIENT HAS LOW GRADE DYSPLASIA…

- Single focus LGD is not offered treatment unless they have high risk features (age <30, BE length >10cm or fmhx)
  - Surveillance advised
- Multifocal LGD is offered treatment

PATIENT WITH HX OF HIGH GRADE DYSPLASIA



New addition:

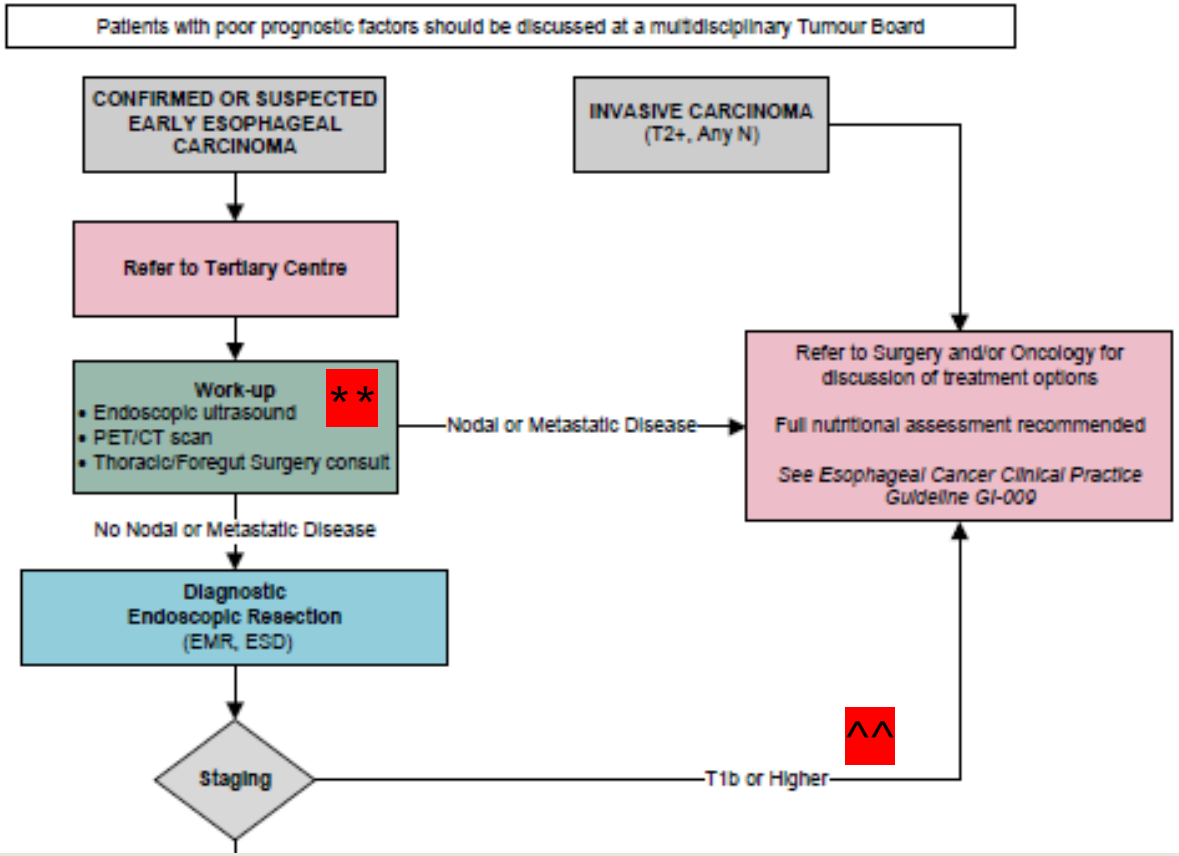
Endoscopic cryotherapy may be considered as an alternative ablative therapy in patients who are unresponsive to RFA, patients who experience excessive pain due to RFA, or in settings where anatomy may not allow for RFA

➔ Before meta analysis came out

➔ Might have a role as first line now...

PATIENT HAS NEWLY DX EARLY ESOPHAGEAL CANCER

Figure 5. Early Esophageal Cancer or Invasive Carcinoma



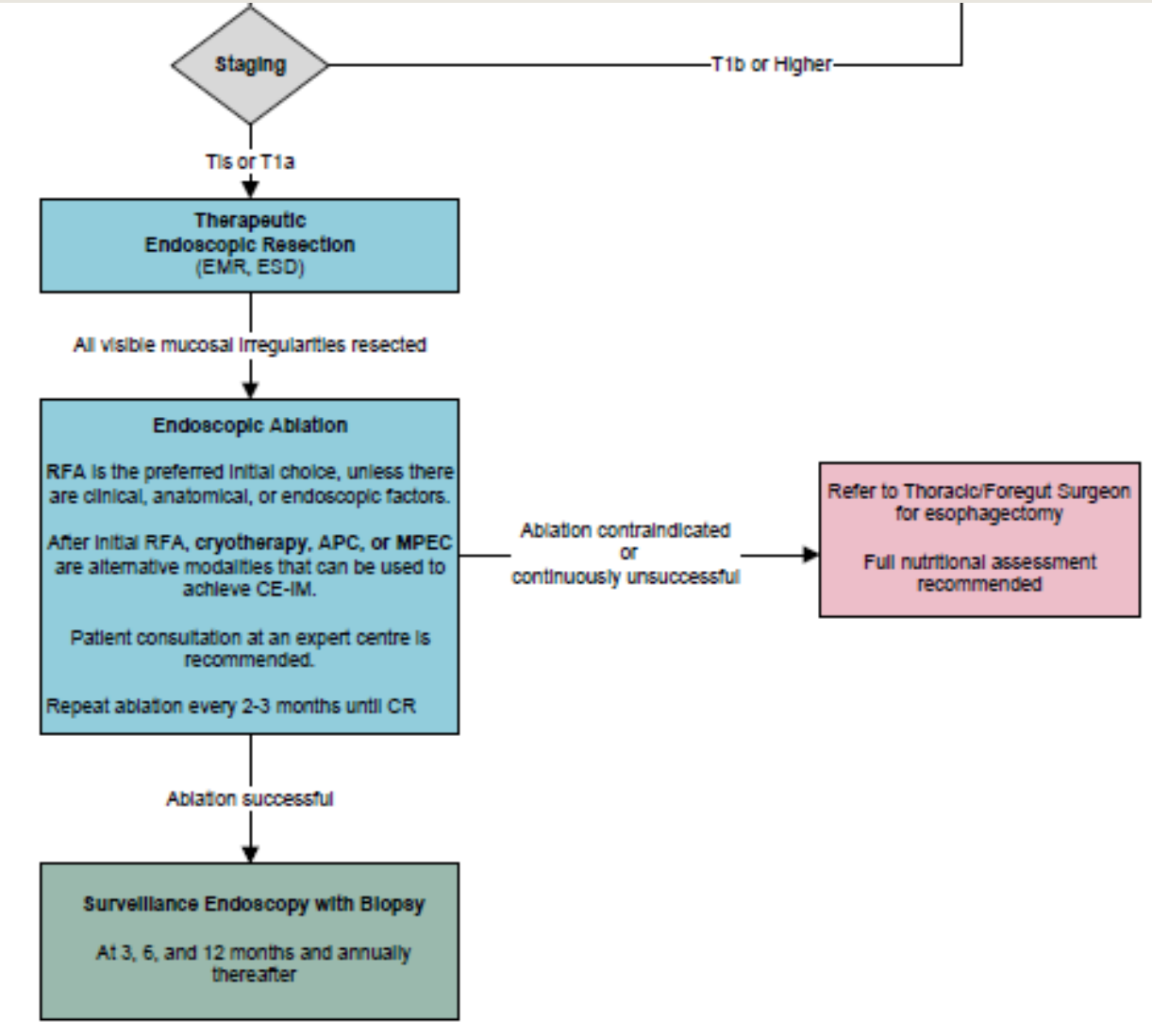
Disclaimers

** - consider only if EMR cannot be completed right away

→EMR is a diagnostic AND therapeutic tool in BE

^^ - ESD can be offered as treatment for select T1b with close surveillance follow up (EUS, PET CT, EGD) to catch recurrence/extension early

EARLY ESOPHAGEAL CANCER

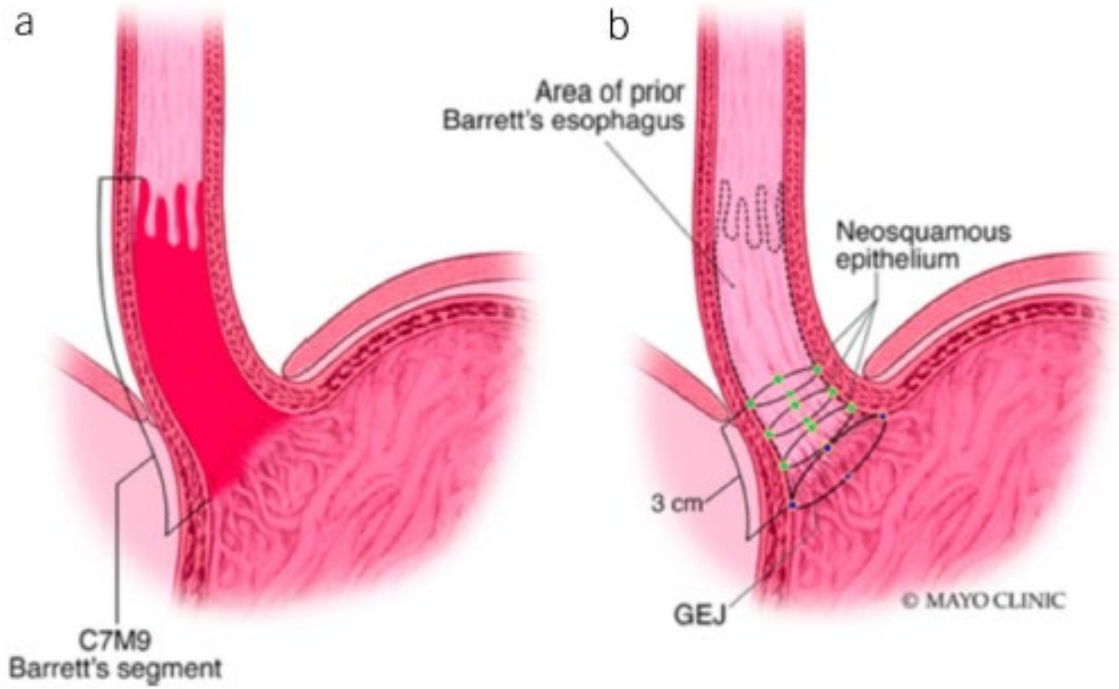


Important to follow up EMR/ESD with RFA (esp around GEJ) to ensure complete eradication of BE

No changes compared to previous AHS guidelines

HOW TO FOLLOW UP BARRETT'S AFTER ERADICATION?

1. POST ERADICATION SURVEILLANCE



Guidelines suggest attention be focused on high yield areas

1. Careful inspection (WLE, OE) of GEJ and neoSC junction -> highest risk of recurrence
2. WLE/chromo evaluation of original BE segment and then -
3. Biopsy
   a) GEJ in separate bottle (other esophageal biopsies)
   b) Distal 2-4cm of esophagus above GEJ (Seattle protocol)
4. Europeans recommend targeted biopsies instead of above

AGA 2022 guidelines Barrett's
Weusten et al., ESGE Barrett's guidelines Endoscopy 2023

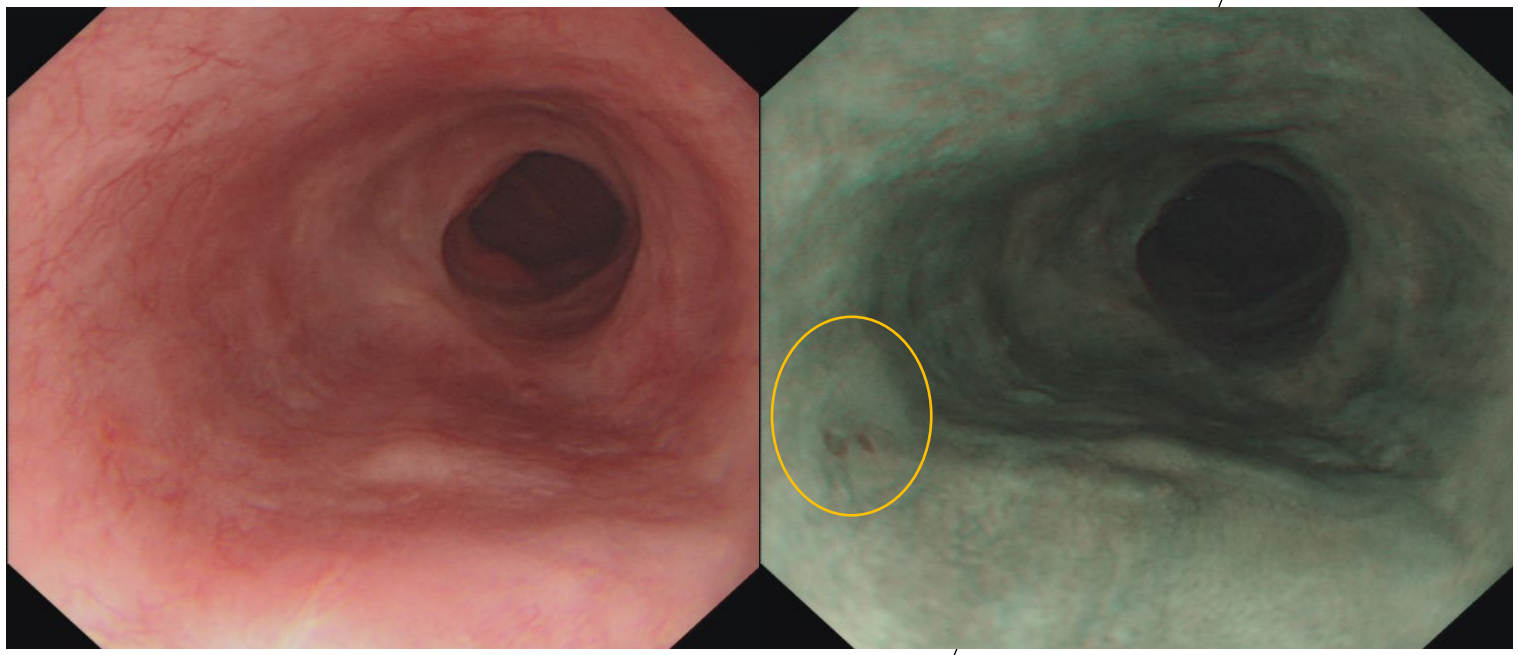
CASE 4 - BURIED BARRETT'S

- Patient, 62 years
- BE C9M10 with HGD
- Treated with EMR and 2 RFA sessions
- Endoscopically no visible Barrett's; Histologically no IM in biopsies
- Patient enters follow-up and reassessed in 3 months.
- Endoscopically no Barrett's described.
- Pathologist comments on 'buried BE gland' (non-dysplastic) in a single neosquamous biopsy.

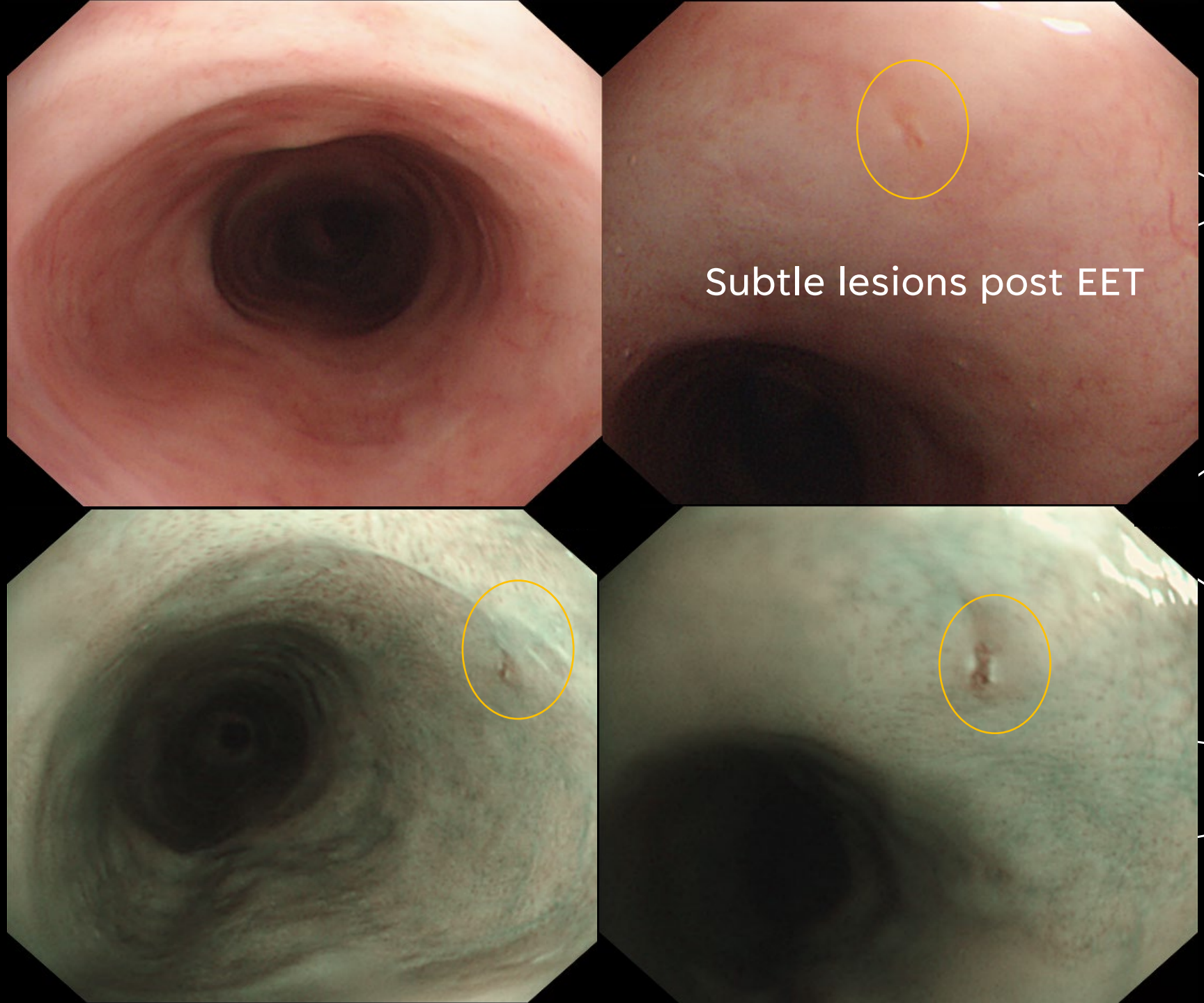
PSEUDO-BURIED BARRETT'S

Small residual islands that are easily overlooked with white light endoscopy.

Use NBI (or a technique alike) to detect small islands.



Courtsey Dr. J.J. Bergman/Best Academia



Courtsey Dr. J.J. Bergman/Best Academia

WHAT IS PSEUDO-BURIED BARRETT'S?

- Pseudo-buried Barrett occur when small islands are (accidentally) sampled and-
- Its presumed Barrett's mucosa is underneath the adjacent squamous epithelium
- Angle of the forceps when obtaining biopsies
- Artifacts if biopsies are not orientated prior to fixation, columnar mucosa may appear to be situated underneath squamous mucosa.

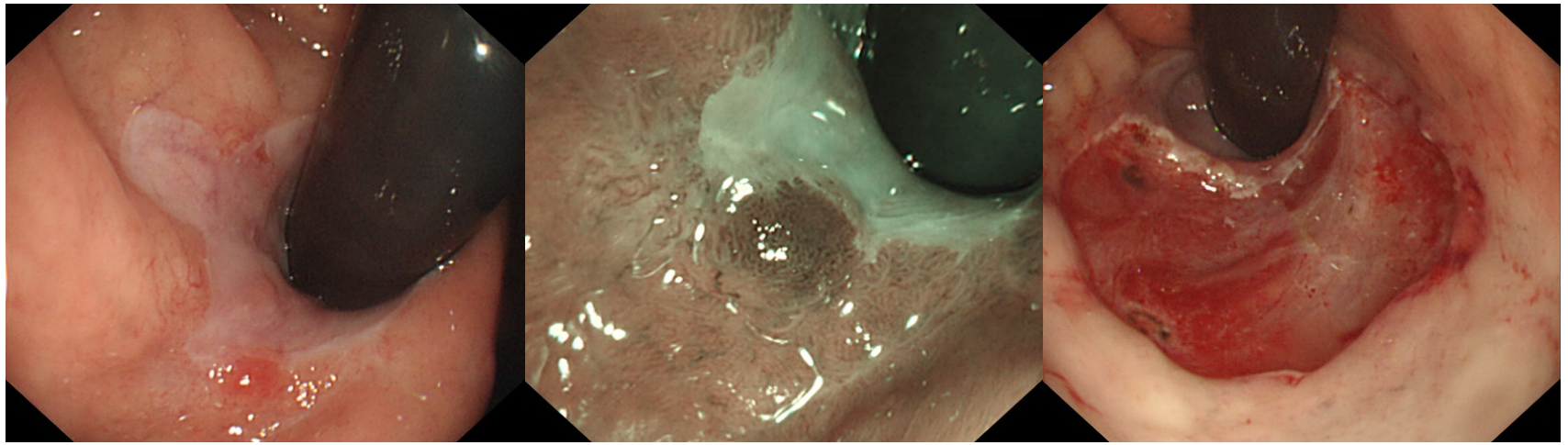
PSEUDO-BURIED BARRETT'S

- Buried glands are a normal finding *BEFORE* ablation.
- If there is no visible BE after RFA, the incidence of buried Barrett's glands is very low (<<1%).
- If you accidentally sample a small Barrett's island without recognizing it as such, there is a significant chance that your pathologist will report buried glands

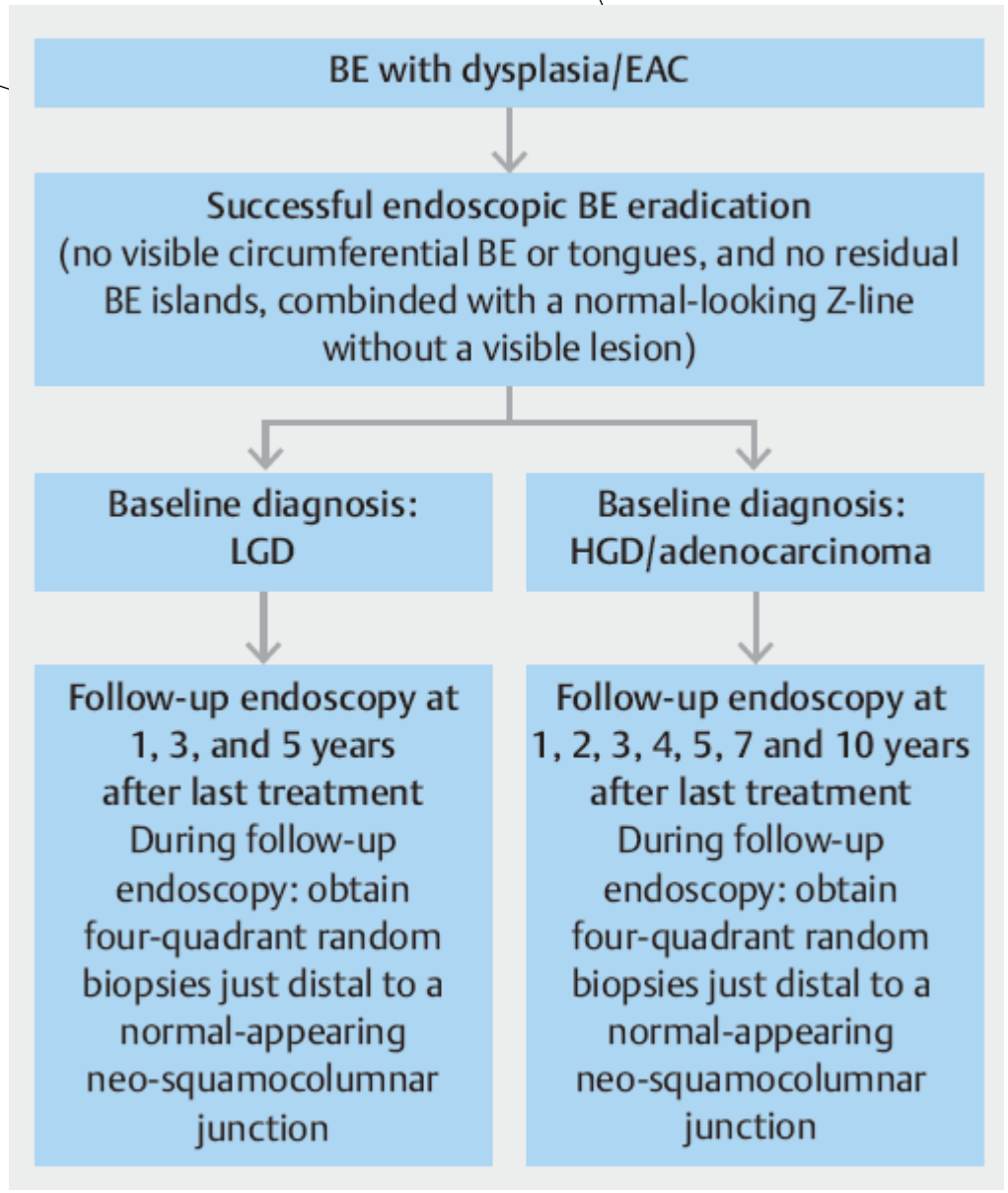
2. INTESTINAL METAPLASIA IN CARDIA/GEJ POST ERADICATION

- Focal IM at GEJ/cardia is of limited significance
  - Does not indicate future risk of recurrence
  - Does not need EET treatment unless area biopsied shows a lesion

- Careful evaluation of the neo SC goes a long way – use retroflexion!



Weusten et al., ESGE Barrett's guidelines Endoscopy 2023



POST ERADICATION TIMELINES

- ESGE encourages stopping surveillance after 5 years in LGD, and cutting back a little on HGD/IMCa…
- AHS and AGA-
  - LGD – 1y, 3y then q2y
  - T1a/HGD – 3, 6, 12mon then yearly…till death do us part??

AGA 2022 guidelines
Weusten et al., ESGE Barrett's guidelines Endoscopy 2023

FINAL TIPS & TAKEAWAYS

Practice makes perfect

- Consistent use of Prague and Seattle protocol
  - Strengthen your familiarity
- Incorporate chromoendoscopy
  - Choose your style – virtual vs. acetic acid
- Timing and transitions
  - Aim for 1 min per cm evaluation time
  - Approximately 20-30 min scope time with Barrett's

Treatment and Surveillance

- Less is more for NDBE and LGD
- Cryotherapy and ESD expand horizons of care for early EAC
- Cryo might be used first line
- Careful evaluation post eradication helps catch subtle lesions – look closely and biopsy

THANK YOU