VENERDÌ 24 MAGGIO 2024

TINDARI B

ORA 15.00 - 17.00

SESSIONE 13a

GERD E CHIRURGIA BARIATRICA. ANNO ZERO?

PARTE PRIMA: CORRETTA DIAGNOSI PRE-OPERATORIA E SELEZIONE DELLA PROCEDURA

Presidente: **Mario Traina** *(Palermo)*
Moderatori: **Giuliano Sarro** *(Novara)* - **Salvatore Tolone** *(Napoli)*

Esofago di Barrett. Definizione ed incidenza nel paziente obeso

Antonio Ieni

Dipartimento di Patologia Umana dell' Adulto e dell' Età evolutiva "G. Barresi"

U.O.C Anatomia Patologica

A.O.U. Gaetano Martino

Informazioni diagnostiche

- **Malattia da reflusso erosiva**
- **Malattia da reflusso non-erosiva**
- **Esofagiti "specifiche"**
- **Malattia da reflusso complicata**
  - **Esofago di Barrett**

1. **Determinazione della gravità ed estensione della malattia**
2. **Monitoraggio del decorso clinico-patologico della malattia**
3. **Monitoraggio degli effetti della terapia**

Limiti della diagnosi istologica

- Focale ed eterogenea distribuzione delle alterazioni morfologiche
- Numero e tipologia del prelievo
- Sensibilità e specificità diagnostica operatore dipendente
- Eventuale terapia

Esophagitis

Old Histologic Concepts and New Thoughts

Andrea Grin, MD; Catherine J. Streutker, MD, MSc

Arch Pathol Lab Med—Vol 139, June 2015

Esofago di Barrett IT

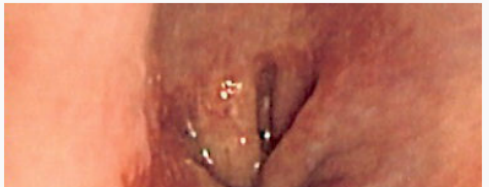
Esofago di Barrett

Da Wikipedia, l'enciclopedia libera.

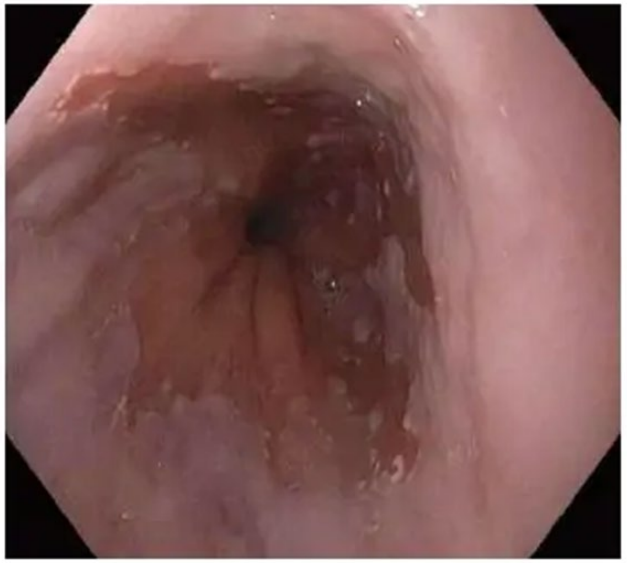
⚠ *Le informazioni riportate non sono consigli medici e potrebbero non essere accurate. I contenuti hanno solo fine illustrativo e non sostituiscono il parere medico: leggi le avvertenze.*

L'**epitelio di Barrett** oppure **esofago di Barrett** è una metaplasia, un adattamento delle cellule della parte inferiore dell'esofago ad uno stimolo nocivo. Esso è caratterizzata dalla sostituzione del normale rivestimento dell'epitelio squamoso pluristratificato dell'esofago in epitelio colonnare semplice con cellule mucipare caliciformi (che si trovano di solito nel tratto gastrointestinale). Il significato medico dell'esofago di Barrett è la chiara correlazione (circa 0,5% per anno-paziente) con l'adenocarcinoma esofageo, un tumore molto spesso mortale,[1][2] per cui è considerata una condizione precancerosa.

Esofago di Barrett



Revisiting Barrett's Esophagus



There are still areas of controversy surrounding the definition of BE, in particular as concern the histological type of metaplastic epithelium that establishes a definitive diagnosis of BE [3]. According to American guidelines, the presence of intestinal metaplasia with goblet cells (also called specialized intestinal metaplasia) is necessary for a definitive diagnosis of BE as this condition clearly predisposes to malignancy [4]. The carcinogenic sequence may occur through a sequential progression from intestinal metaplasia to low-grade dysplasia, then to high-grade dysplasia and eventually to adenocarcinoma [5]. On the other hand, for the British Society of Gastroenterology the presence of cardiac mucosa (comprising mucus-secreting columnar cells) without goblet cells in esophagus should lead to the diagnosis of BE [6]. Although the risk for malignancy of

Digestive and Liver Disease 43S (2011) S319–S330

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Digestive and Liver Disease

journal homepage: www.elsevier.com/locate/dld

Microscopic esophagitis and Barrett's esophagus: The histology report

Roberto Fiocca[a,*], Luca Mastracci[a], Massimo Milione[b], Paola Parente[c], Vincenzo Savarino[d]

On behalf of the "Gruppo Italiano Patologi Apparato Digerente (GIPAD)" and of the "Società Italiana di Anatomia Patologica e Citopatologia Diagnostica"/International Academy of Pathology, Italian division (SIAPEC/IAP)

[a]Department of Anatomic Pathology, University of Genova and S. Martino University Hospital, Genoa, Italy
[2]Department of Anatomic Pathology B, IRCCS Istituto Nazionale Tumori, Milan, Italy
[c]Istituto Oncologico Veneto (IOV-IRCCS), Padua, Italy
[d]Department of Internal Medicine, University of Genoa, Genoa, Italy

Barrett's esophagus (BE)

- Defined as columnar metaplasia of the distal esophagus, is caused by chronic GERD and represents a risk factor for esophageal adenocarcinoma.
- Two types of columnar epithelium may replace esophageal stratified squamous epithelium:

1. intestinal-type epithelium
2. cardia-type epithelium.

REVIEWS

Global burden and epidemiology of Barrett oesophagus and oesophageal cancer

Aaron P. Thrift

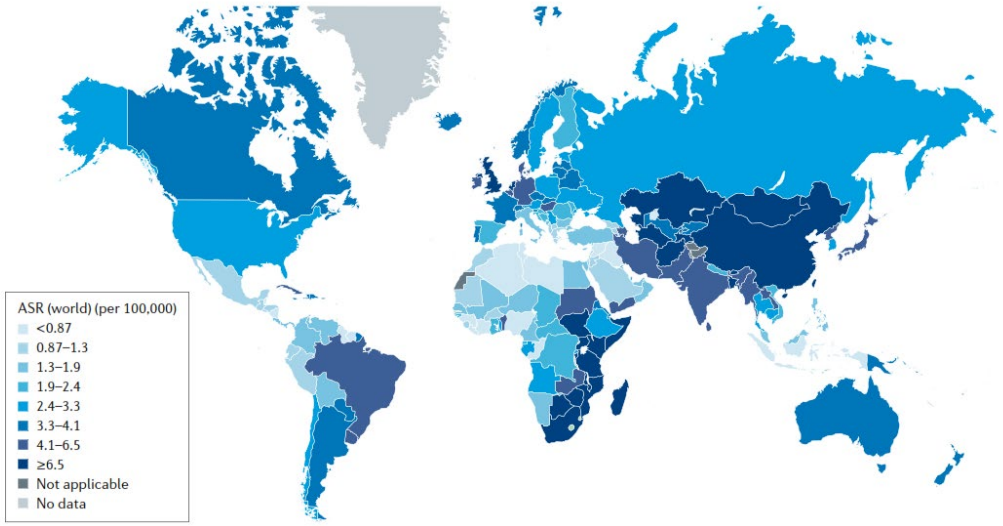
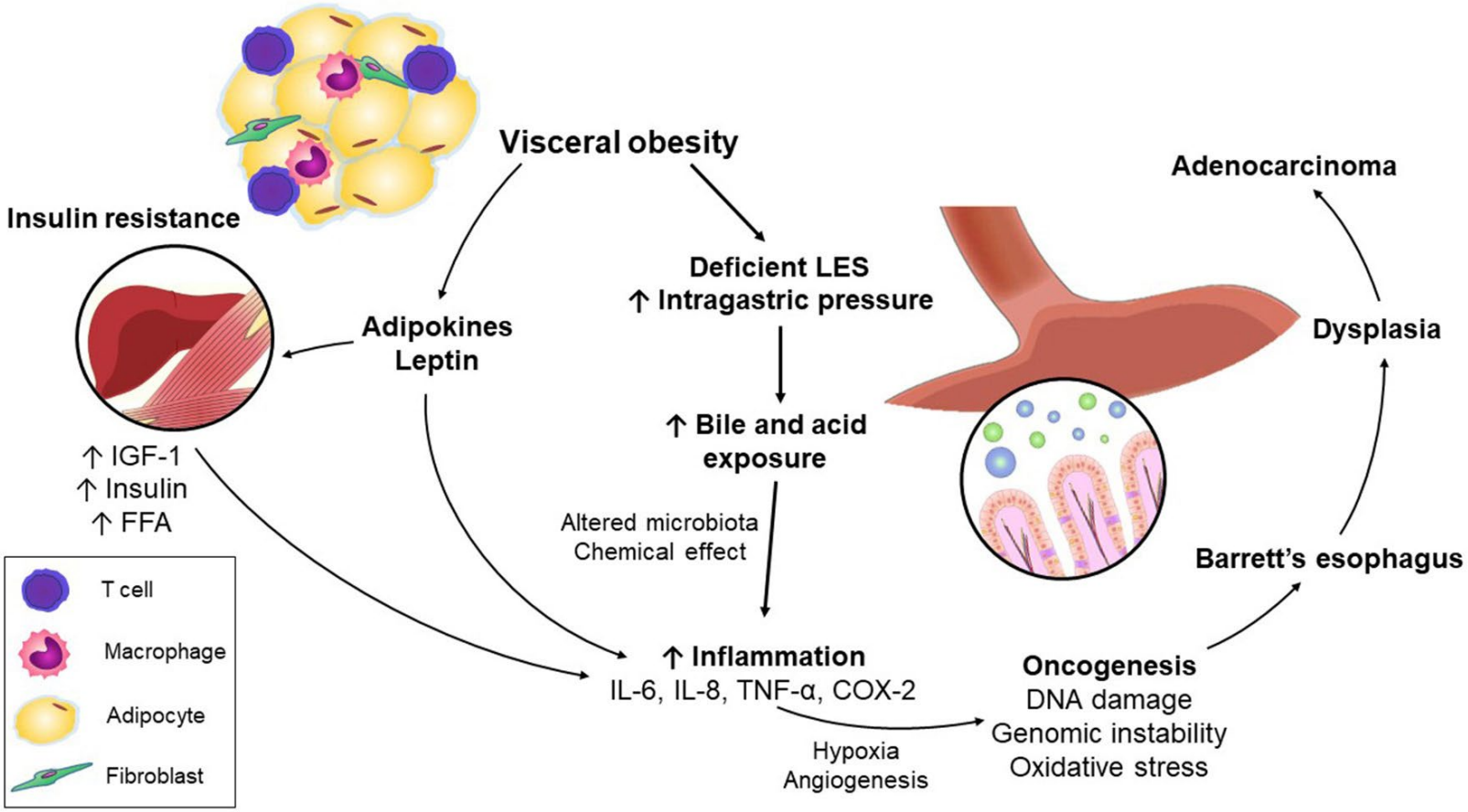


Table 1 | **Selected non-genetic risk factors for EAC and ESCC**

Risk factor	Direction of association	
	EAC	ESCC
Gastro-oesophageal reflux disease	Positive[36,37]	No association[36]
Cigarette smoking	Positive[40,41]	Positive[43,44]
Obesity	Positive[58–60,66]	Inverse[72]
Alcohol consumption	No association[41,73]	Positive[76,77]
Vegetables	Inverse[76] (limited suggestive evidence)	Inverse[76] (limited suggestive evidence)
Fruit	No association[76]	Inverse[76] (limited suggestive evidence)
Physical activity	Inverse[76] (limited suggestive evidence)	Inverse[76] (limited suggestive evidence)
Menopause hormone therapy, oral contraceptives and breast feeding	Inverse[103,104]	Limited evidence[105–107]
Helicobacter pylori infection	Inverse[109,110]	Limited evidence[109,110]
NSAIDs	Inverse[116]	Inverse[120,121]
Proton pump inhibitors	Inverse[113]	No association[113]
Statins	Inverse[122,127]	No association[122]

EAC, oesophageal adenocarcinoma; ESCC, oesophageal squamous cell carcinoma.

Age > 50 years
White race
Male sex
Obesity with abdominal adiposity
Chronic symptoms (heartburn) of reflux
Smoking
Hiatal hernia
Erosive esophagitis
Low birth weight
Obstructive sleep apnea
Family history of Barrett's esophagus or esophageal adenocarcinoma



A recent meta-analysis of 17 studies showed that the risk of BE was about twice higher in individuals with abdominal adiposity.

Visceral fat is metabolically active and it is associated with low serum levels of adiponectin and increased production of leptin and insulin-like growth factors, which promote cell proliferation and lead to the development of metaplastic tissue in esophagus, and proinflammatory cytokines, such as IL-6 and TNF-alpha, which can modify gastroesophageal motility

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DOI: 10.1111/nmo.14750

ORIGINAL ARTICLE

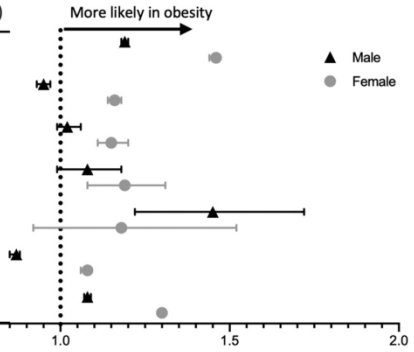
Neurogastroenterology & Motility NGM WILEY

Obesity is associated with higher prevalence of gastroesophageal reflux disease and reflux related complications: A global healthcare database study

Mengdan Xie[1] | Lifu Deng[2] | Ronnie Fass[1] | Gengqing Song[1]

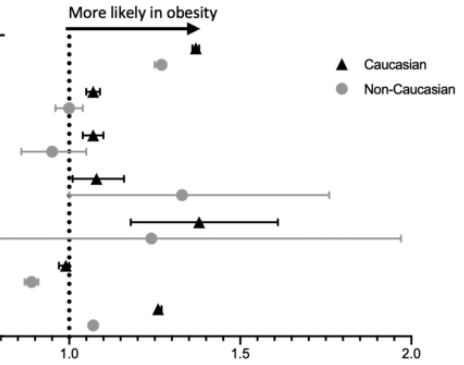
Outcomes	Gender	Event, N (%) Obesity	Event, N (%) No-obesity	Odds Ratio (95% CI)
GERD	Male	127480 (28)	112114 (25)	1.19 (1.18, 1.20)
	Female	225805 (32)	172157 (24)	1.46 (1.44, 1.47)
Esophagitis	Male	14077 (3)	14811 (3)	0.95 (0.93, 0.97)
	Female	25686 (4)	22329 (3)	1.16 (1.14, 1.18)
Barrett's esophagus	Male	6518 (1)	6382 (1)	1.02 (0.99, 1.06)
	Female	6475 (1)	5619 (1)	1.15 (1.11, 1.20)
BE with dysplasia	Male	1095 (0)	1012 (0)	1.08 (0.99, 1.18)
	Female	915 (0)	772 (0)	1.19 (1.08, 1.31)
Esophageal cancer	Male	329 (0)	227 (0)	1.45 (1.22, 1.72)
	Female	132 (0)	112 (0)	1.18 (0.92, 1.52)
EGD	Male	34541 (8)	39413 (9)	0.87 (0.85, 0.88)
	Female	59936 (8)	56019 (8)	1.08 (1.06, 1.09)
PPI use[a]	Male	140342 (31)	132974 (30)	1.08 (1.07, 1.09)
	Female	219604 (31)	181438 (25)	1.30 (1.29, 1.31)

[a] PPI includes pantoprazole, omeprazole, esomeprazole, lansoprazole and rabeprazole



Outcomes		Event, N (%) Obesity	Event, N (%) No-obesity	Odds Ratio (95% CI)
GERD	Caucasian	251077 (31)	199779 (25)	1.37 (1.36, 1.38)
	Non-Caucasian	63594 (27)	53232 (23)	1.27 (1.25, 1.28)
Esophagitis	Caucasian	29132 (4)	27299 (3)	1.07 (1.05, 1.09)
	Non-Caucasian	5450 (2)	5464 (2)	1.00 (0.96, 1.04)
Barrett's esophagus	Caucasian	10586 (1)	9928 (1)	1.07 (1.04, 1.10)
	Non-Caucasian	722 (0)	760 (0)	0.95 (0.86, 1.05)
BE with dysplasia	Caucasian	1685 (0)	1563 (0)	1.08 (1.01, 1.16)
	Non-Caucasian	110 (0)	83 (0)	1.33 (1.00, 1.76)
Esophageal cancer	Caucasian	366 (0)	266 (0)	1.38 (1.18, 1.61)
	Non-Caucasian	41 (0)	33 (0)	1.24 (0.79, 1.97)
EGD	Caucasian	70076 (9)	71038 (9)	0.99 (0.97, 1.00)
	Non-Caucasian	16679 (7)	18653 (8)	0.89 (0.87, 0.91)
PPI use[a]	Caucasian	256067 (32)	217048 (27)	1.26 (1.26, 1.27)
	Non-Caucasian	71556 (30)	68230 (29)	1.07 (1.06, 1.08)

[a] PPI includes pantoprazole, omeprazole, esomeprazole, lansoprazole and rabeprazole



A total of 2,356,548 patients were included in the obesity and non obesity groups after propensity score matching.

In the group with obesity, patients had a significantly higher prevalence of GERD (30% vs. 24%) compared to the group without obesity.

Higher prevalence of GERD-related complications in the group with obesity with statistical significance.

Ochsner Journal 19:347–352, 2019

DOI: 10.31486/toj.19.0038

Incidence of Dysplasia in Obese vs Nonobese Patients With Nondysplastic Barrett Esophagus

Ann Monardo, DO,[1] Jennifer McCullough, MPH, CWP[2]

[1]Department of Internal Medicine, Ascension Genesys Hospital, Grand Blanc, MI [2]Department of Research, Ascension Genesys Hospital, Grand Blanc, MI

Table 2. Body Mass Index (BMI)-Based Incidence of Dysplasia

	All Patients n=1,999		Nonobese Patients (BMI <30 kg/m^2) n=980		Obese Patients (BMI ≥30 kg/m^2) n=1,019	
Diagnosis	Number of cases	Incidence rate per 1,000 person-years (95% CI)	Number of cases	Incidence rate per 1,000 person-years (95% CI)	Number of cases	Incidence rate per 1,000 person-years (95% CI)
Low-grade dysplasia	47	7.1 (5.3-9.4)	12	3.7 (1.9-6.2)	35	10.5 (7.4-14.4)
High-grade dysplasia	18	2.7 (1.6-4.2)	3	0.9 (0.23-2.5)	15	4.5 (2.6-7.3)
Esophageal adenocarcinoma	1	0.15 (0.008-0.75)	0		1	0.3 (0.02-1.5)
Total	66		15		51	

CI, confidence interval.

We found a **significant increase in the incidence of dysplasia development in obese patients with nondysplastic Barrett esophagus at 3-5-year follow-up compared to nonobese patients**. This finding suggests that more frequent surveillance in obese patients with nondysplastic Barrett esophagus may be warranted for early detection of dysplasia.

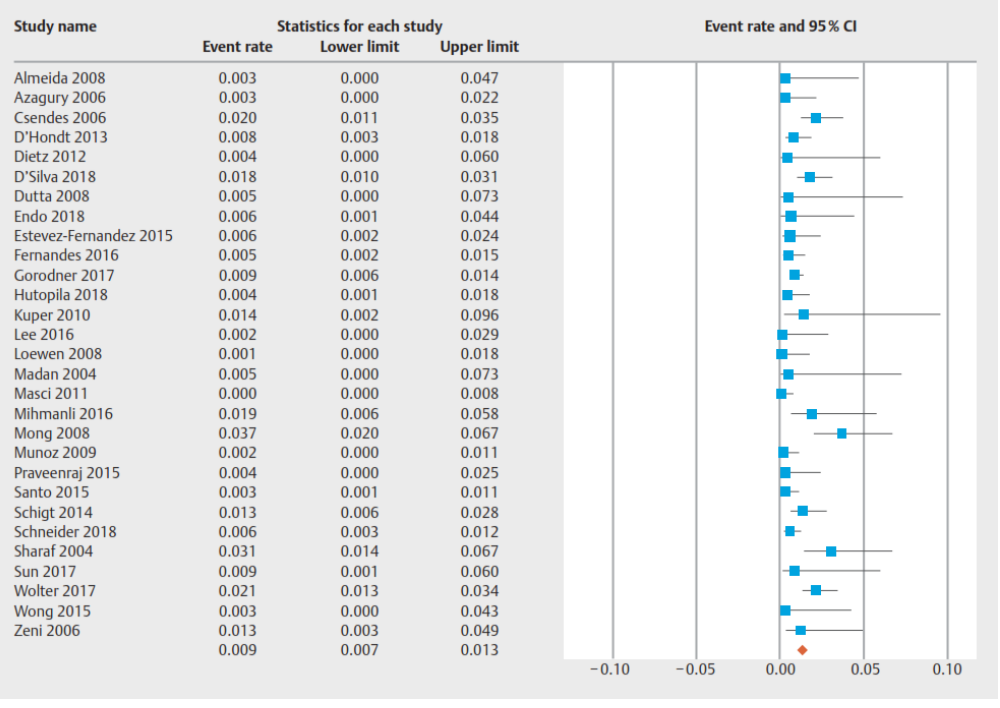
Systematic review

Thieme

Prevalence of Barrett's esophagus in obese patients undergoing pre-bariatric surgery evaluation: a systematic review and meta-analysis

Authors
Bashar Qumseya[1], Sherif Gendy[2], Alexander Wallace[3], Dennis Yang[1], Davis Estores[1], Alexander Ayzengart[4], Peter V. Draganov[1]

13.434 patients who underwent preoperative endoscopy, only 114 cases of BE were reported. Seven of the studies reported a zero prevalence of BE. **The diagnosis of BE was not confirmed on biopsy in 11 of the 29 studies**. Based on random-effects modeling of the 29 studies, the pooled prevalence of BE was 0.9%.



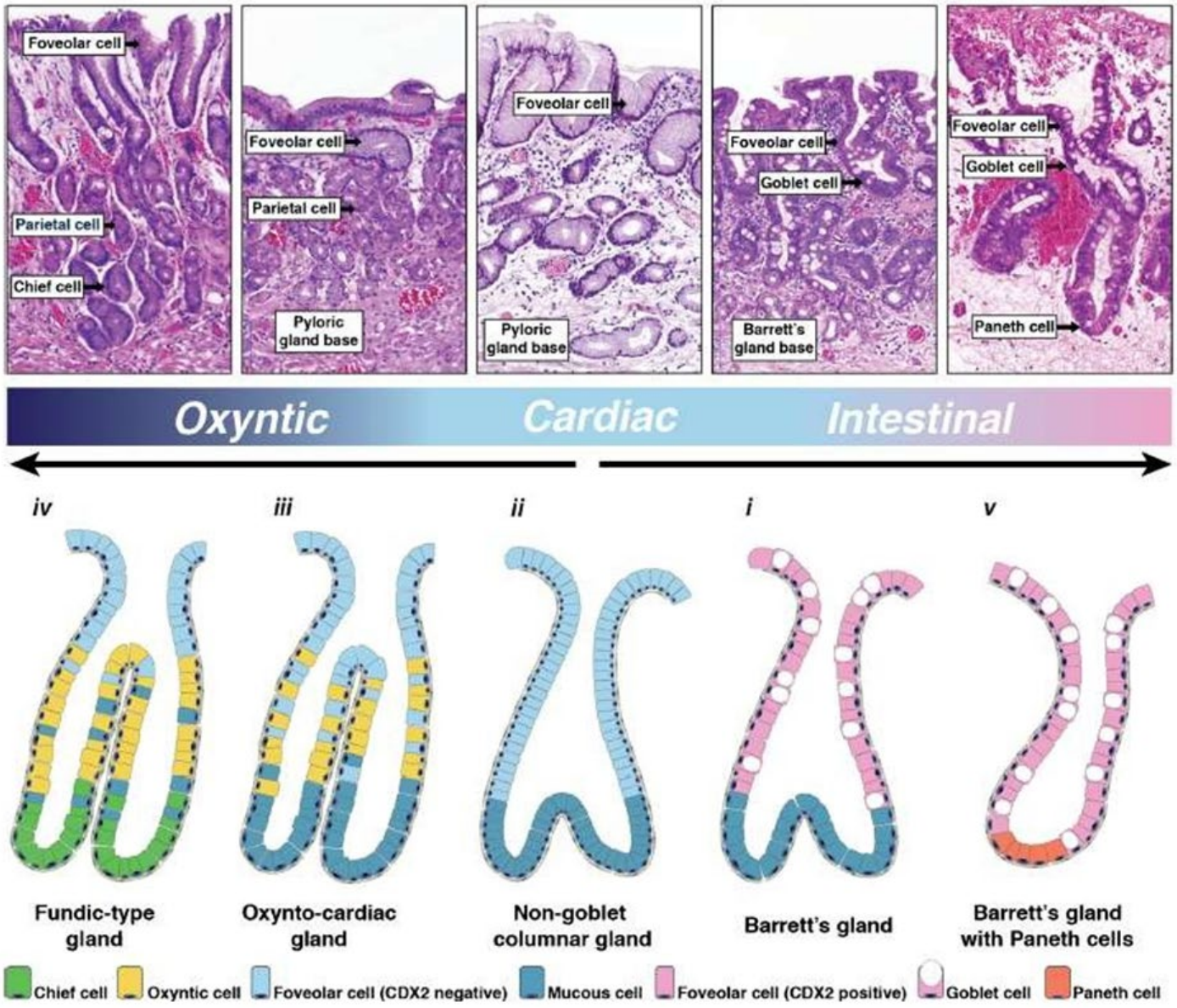
Morbidly obese patients undergoing pre-bariatric surgery evaluation have a very low prevalence of BE. In this patient population, increased BMI is associated with an increase in BE prevalence; however, the magnitude of this risk is very small.

Further studies are required to better understand how obesity interacts with other positive and negative risk factors to produce an individual's overall risk of having BE.

The metaplastic mosaic of Barrett's oesophagus

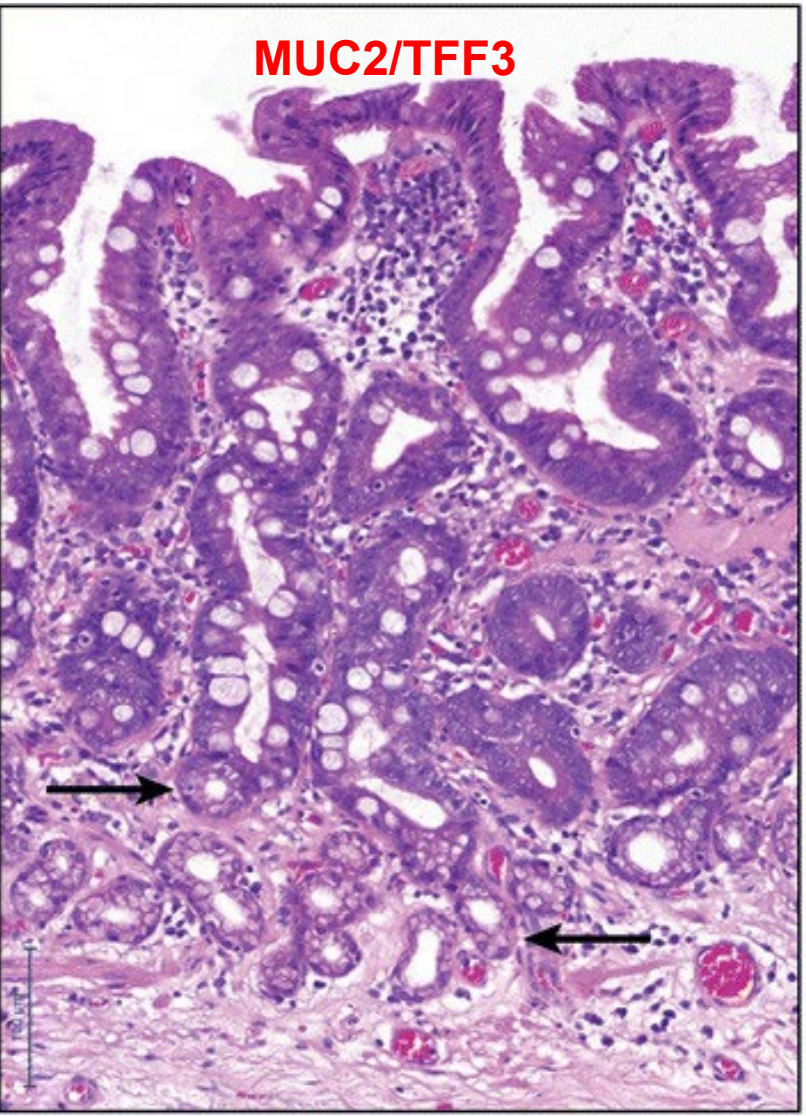
Sujata Biswas[1] · Michael Quante[2] · Simon Leedham[1] · Marnix Jansen[3,4]

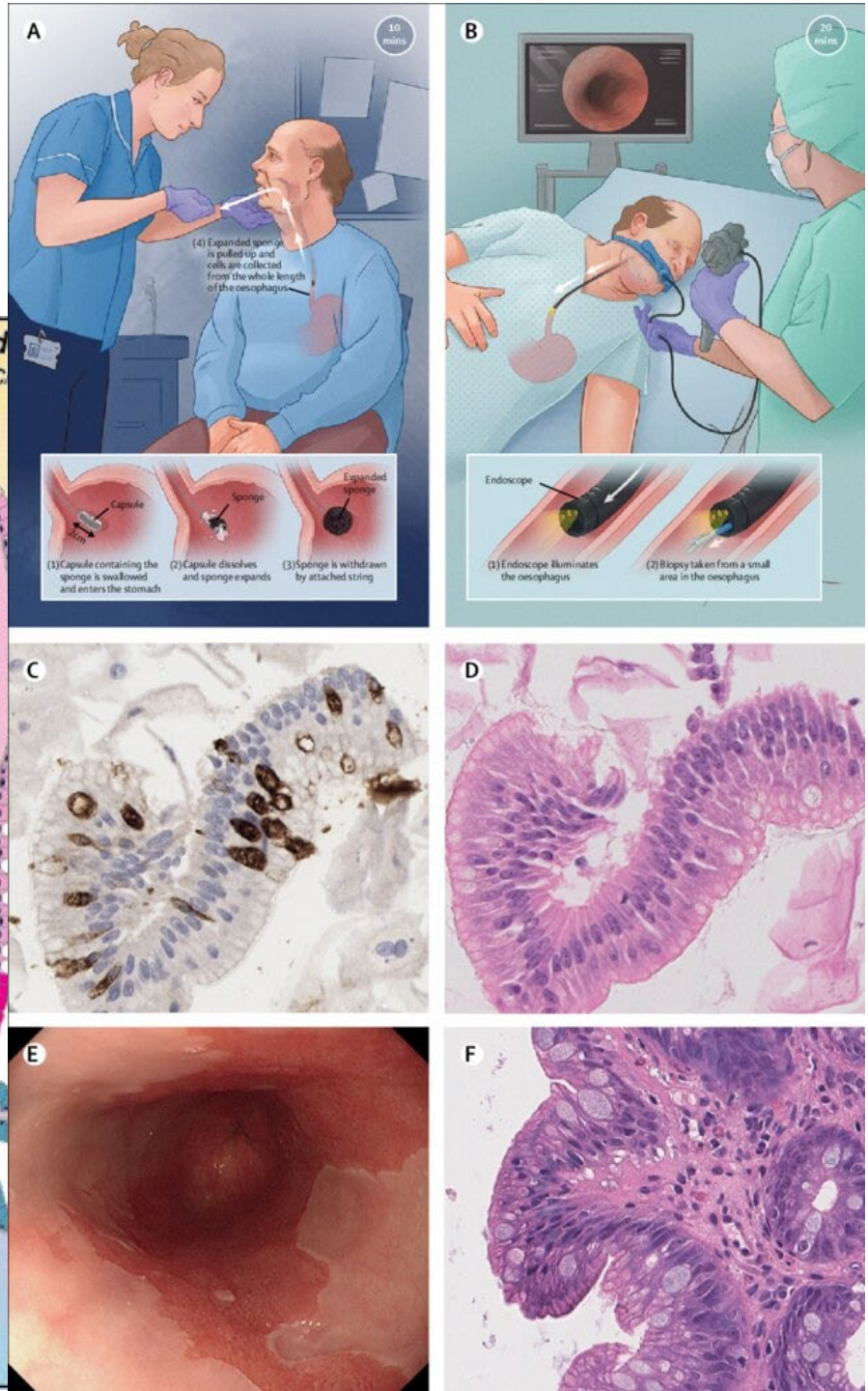
Virchows Arch (2018) 472:43–54



Phenotypic dynamics of Barrett's across time and space

The canonical Barrett's gland

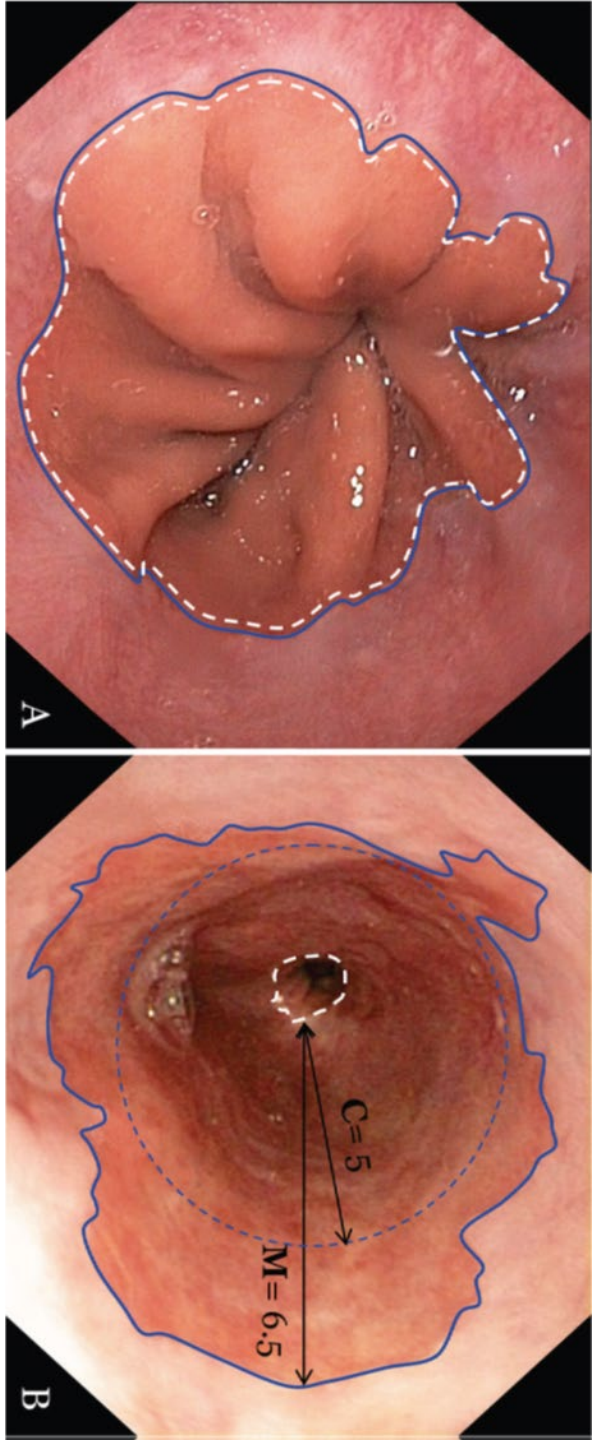




Montreal and Prague classification

- ESEM (Endoscopically Suspected Esophageal Metaplasia) designates the presence of “salmon pink” mucosa in the distal esophagus suspected columnar metaplasia to be confirmed by histology.
- The “C&M” criteria of the Prague classification: ESEM is measured by two descriptors expressed in cm: circumferential extent (C) and maximal extent (M).

- LSBE: Long Segment Barrett’s Esophagus, ≥3 cm;
- SSBE: Short Segment Barrett’s Esophagus, *<3 cm;*
- Irregular SCJ/Z line: irregular SCJ *<1–0.5 cm*



Notizie cliniche

- **Essenziale: <u>indicazione della sede dei prelievi espressa in centimetri dalla linea Z</u>.**
- **Utili:**

1. Quadro endoscopico (iperemia, erosione, ulcerazione, stenosi, mucosa di Barrett, ernia iatale).
2. Precedenti istologici e di terapia.
3. Motivo dell'esame bioptico: sintomatologia esofagea (pirosi, dolore retrosternale, rigurgito) ed extraesofagea (asma non stagionale, senso di soffocamento notturno, raucedine cronica).

- **Facoltative:** test pH-metrico - test manometrico.

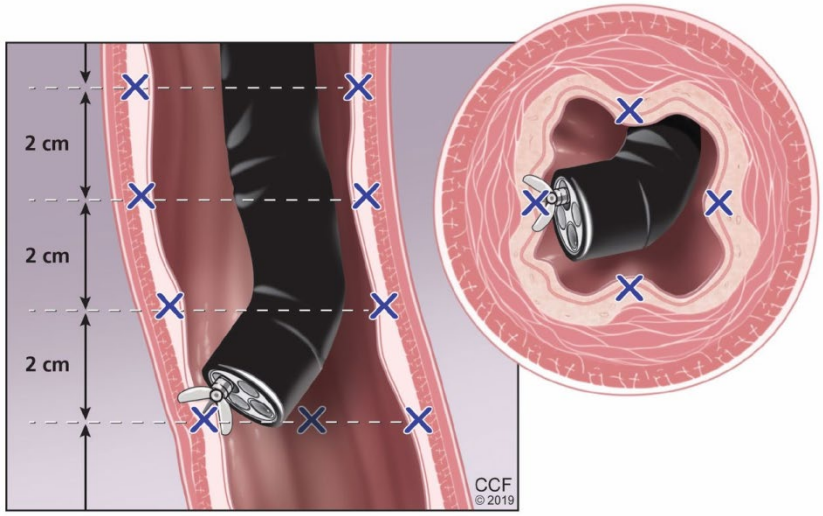
Biopsy sampling

Optimal Approach to Obtaining Mucosal Biopsies for Assessment of Inflammatory Disorders of the Gastrointestinal Tract

Rhonda K. Yantiss, MD[1] and Robert D. Odze, MD, FRCPC[2]

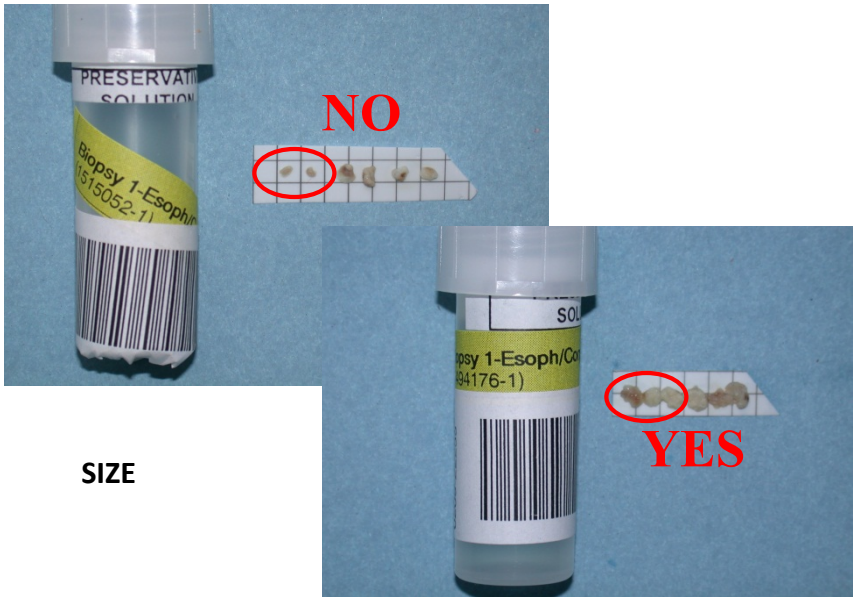
Am J Gastroenterol 2009; 104:774–783; doi: 10.1038/ajg.2008.108

- Multiple biopsies are required in order to characterize ESEM correlated to ESEM length.
- 8 biopsies in the 4 quadrants of the distal esophagus allow detection of intestinal epithelium in 68% of cases, but if biopsies are performed close to squamo-columnar junction, the percentage rises to 94%.

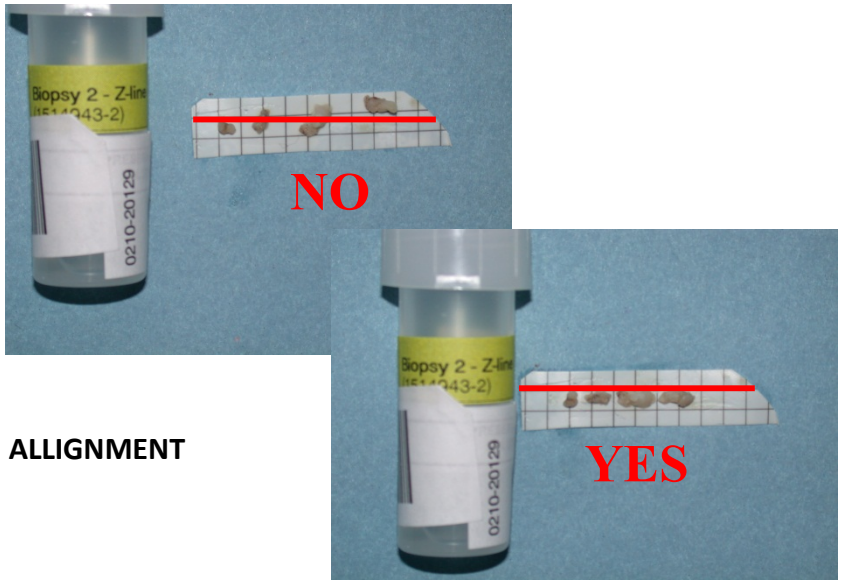


Unfortunately this sampling is not frequently performed in routine practice.

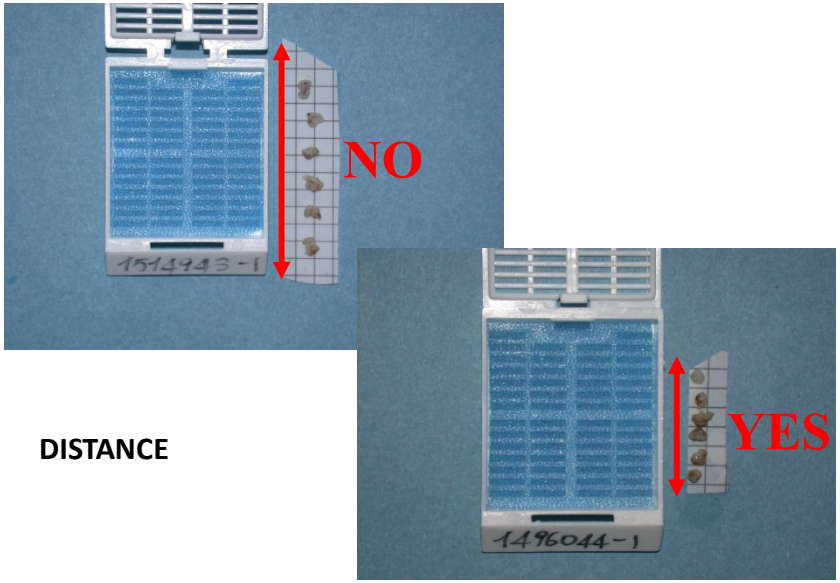
Courtesy of prof. Roberto Fiocca



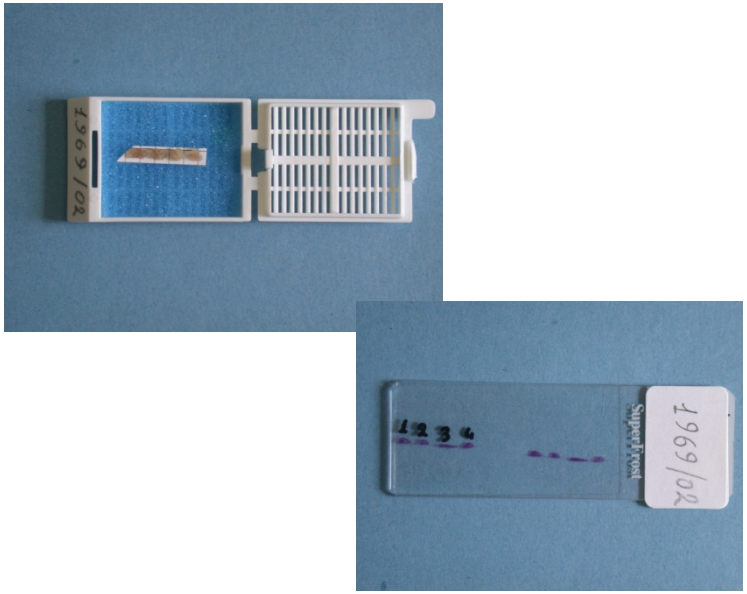
SIZE



ALLIGNMENT



DISTANCE



Allestimento del campione

- Almeno 5 sezioni microtomiche di ogni biopsia.
- Se nessuna lesione viene individuata nelle sezioni iniziali sono raccomandate sezioni semiseriate.

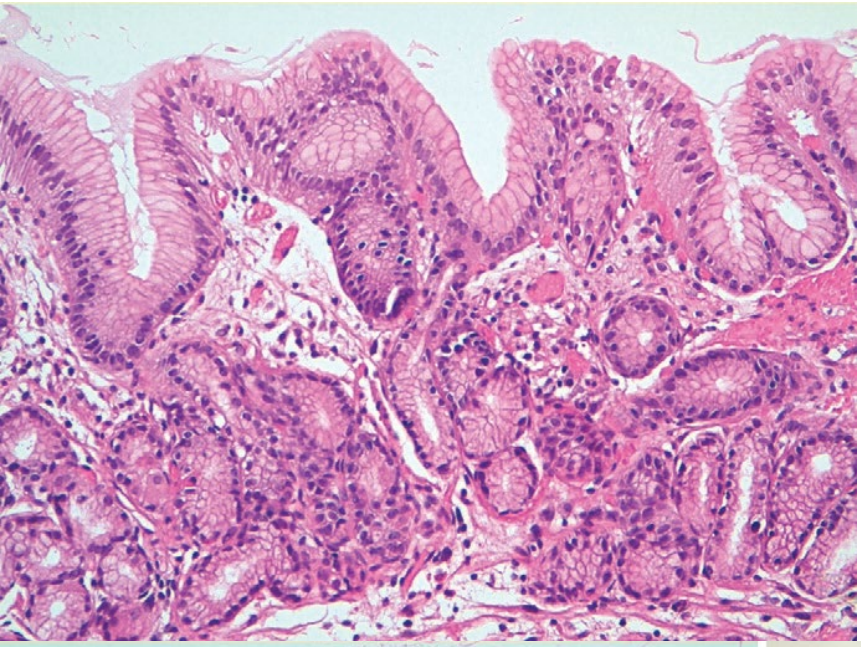
Colorazioni essenziali:

- Ematossilina-eosina
- Giemsa modificato (con esclusione dell'acido acetico) per evidenziazione Helicobacter Pylori.

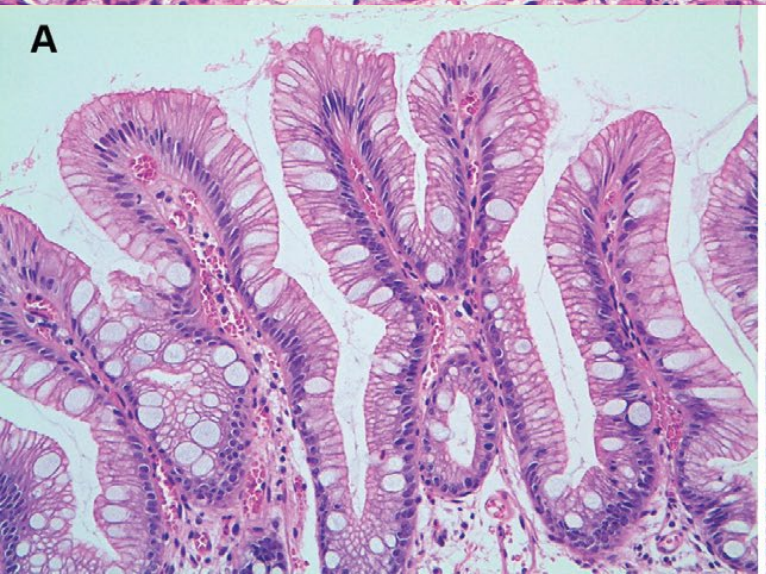
Colorazioni facoltative in presenza di metaplasia intestinale:

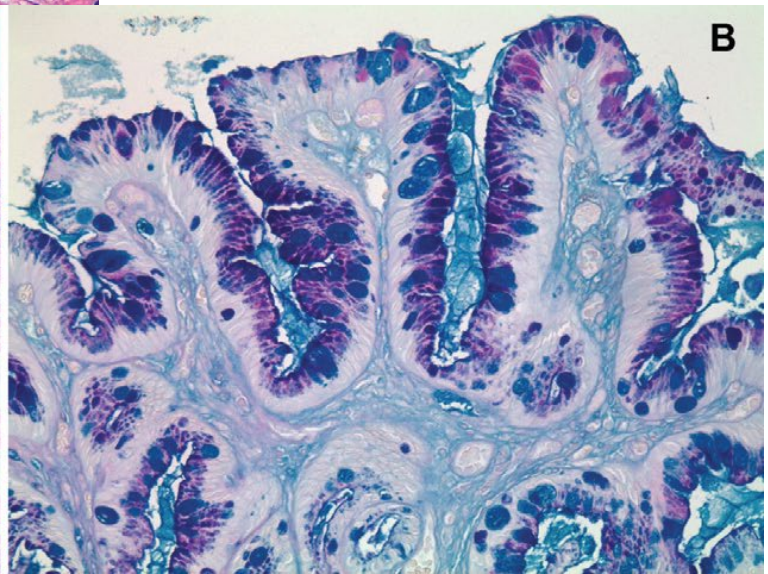
- Alcian Blue pH2,5- Pas (per evidenziare le mucine neutre ed acide)
- HID/ Alcian blue pH 2,5 (per differenziare sialo e solfomucine)

Individual histologic lesions



Cardia epithelium: columnar epithelium characterized by mucous-secreting cells and by PAS+ antral-like glands.





Intestinal epithelium: columnar epithelium characterized by goblet cells storing acid mucins PAS and Alcian blue-positive mucins.

Virchows Arch (2016) 468:159–167
DOI 10.1007/s00428-015-1878-5

ORIGINAL ARTICLE

Interobserver reproducibility in pathologist interpretation of columnar-lined esophagus

Luca Mastracci[1,2] · Nataniele Piol[1,2] · Luca Molinaro[3] · Francesca Pitto[1,2] · Carmine Tinelli[4] · Annalisa De Silvestri[4] · Roberto Fiocca[1,2] · Federica Grillo[1,2] · on behalf of the ABRAM Study Group

Table 4 Overall agreement according to diagnostic categories

Diagnosis	All steps *K* (CI)	Step 1 *K* (CI)	Step 2 *K* (CI)	Step 3 *K* (CI)
BE with intestinal metaplasia	0.5996	0.4847	0.6536	0.6473
	(0.582–0.617)	(0.455–0.514)	(0.624–0.683)	(0.618–0.877)
Intestinal metaplasia of the cardia	0.3667	0.191	0.2774	0.5131
	(0.350–0.384)	(0.161–0.221)	(0.248–0.307)	(0.483–0.543)
Possible BE without intestinal metaplasia	0.1743	0.0182	0.05	0.2742
	(0.157–0.191)	(–0.012–0.048)	(0.02–0.08)	(0.244–0.304)
Site-appropriate gastric mucosa	0.2268	0.1931	0.2993	0.1313
	(0.210–0.241)	(0.163–0.222)	(0.270–0.329)	(0.102–0.161)
Inlet patch	0.8144	0.7764	0.7751	0.8863
	(0.797–0.832)	(0.747–0.806)	(0.745–0.805)	(0.857–0.916)
Non-atrophic oxyntic epithelium (suggestive of hiatus hernia)	0.3561	0.0345	0.4421	0.4993
	(0.339–0.373)	(0.005–0.064)	(0.412–0.472)	(0.470–0.529)

K (CI) Step 3 *K* (CI)
0.6473
–0.683) (0.618–0.877)
0.5131
(0.350–0.384) (0.161–0.221) (0.248–0.307) (0.483–0.543)
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Inlet patch 0.8144 0.7764 0.7751 0.8863
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Non-atrophic oxyntic epithelium (suggestive of hiatus hernia) 0.3561 0.0345 0.4421 0.4993
(0.339–0.373) (0.005–0.064) (0.412–0.472) (0.470–0.529)

Dysplasia (or non-invasive neoplasia) in BE

Unequivocal **neoplastic change that does not extend beyond the basal membrane:**

1. Cytological abnormalities

2. Architectural abnormalities

3. Epithelial maturation

4. Presence of associated inflammation

Dysplasia requires exclusion of regenerative lesions

BE is divided into three diagnostic categories :

- **Low Grade Dysplasia = *scanty architectural distortion and* mild cytological atypia (lower half of the crypts)**
- **High Grade Dysplasia = more complex glandular distortion, nuclear pleomorphism, hyperchromasia and nuclear stratification are more severe**
- **Indefinite for dysplasia = hyperplastic/regenerative or neoplastic in nature.**

Caveat by Fiocca, Villanacci and Rugge

– dysplasia must extend to the surface epithelium;

– the presence of **erosion and/or active inflammation requires caution**

Barrett's esophagus and esophageal cancer: An overview

VINCENZA CONTEDUCA[1], DOMENICO SANSONNO[1], GIUSEPPE INGRAVALLO[2], STEFANIA MARANGI[3], SABINO RUSSI[1], GIANFRANCO LAULETTA[1] and FRANCO DAMMACCO[1]

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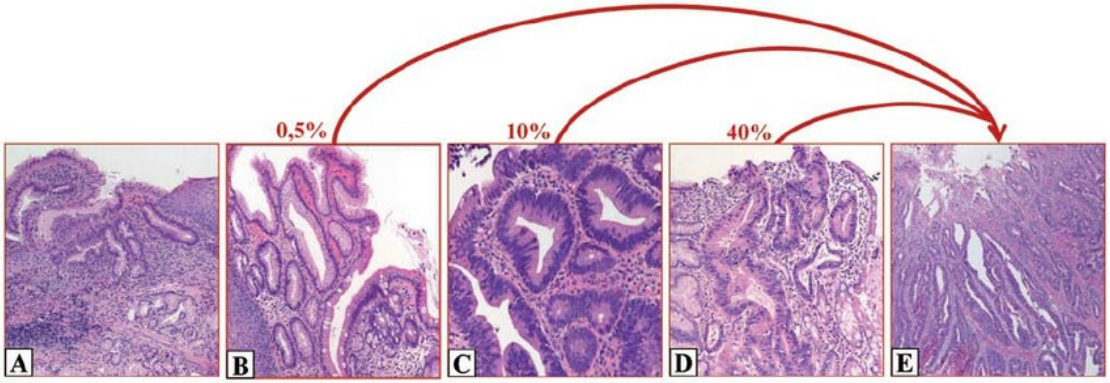

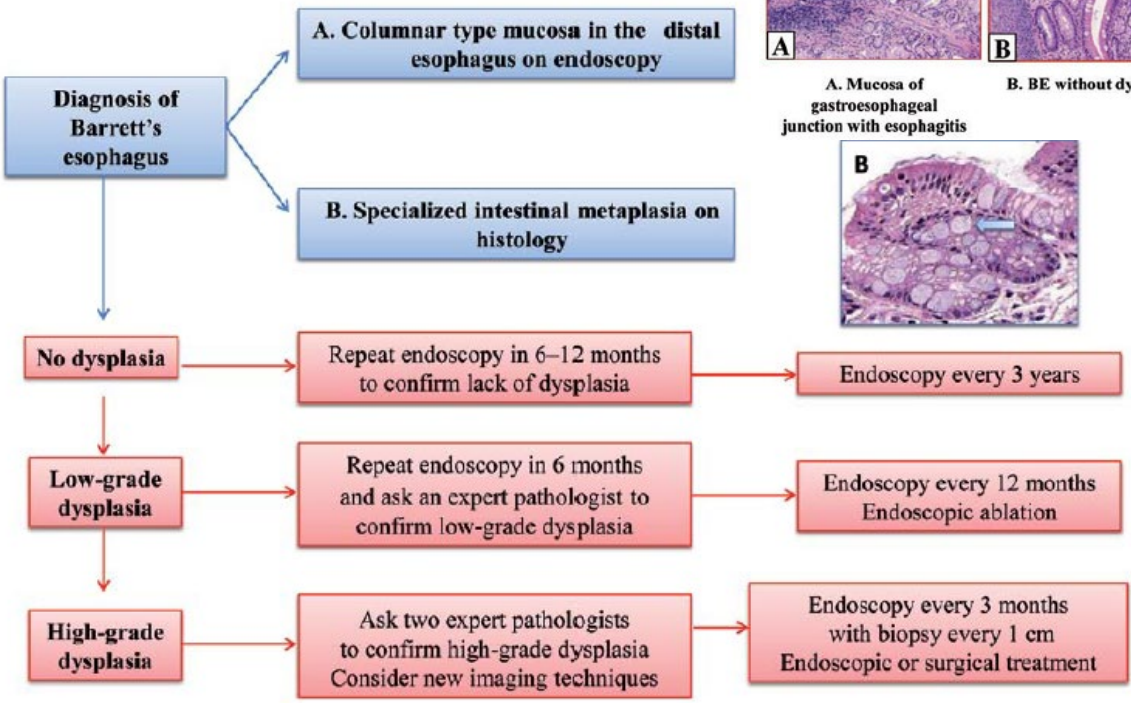

Current Management of Low-Grade Dysplasia in Barrett Esophagus

Gary W. Falk, MD, MS

Gastroenterology & Hepatology Volume 13, Issue 4 April 2017

American Gastroenterological Association 2011[10]	American Society for Gastrointestinal Endoscopy 2012[11]	British Society of Gastroenterology 2014[12]	American College of Gastroenterology 2016[13]
Confirmation needed by 1 additional pathologist with expertise in esophageal pathology	Confirmation needed by expert gastrointestinal pathologist	Confirmation needed by 2 independent pathologists	Confirmation needed by 1 additional pathologist with expertise in Barrett esophagus
Perform surveillance every 6-12 months.	Repeat EGD within 6 months to confirm the diagnosis.	Perform EGD every 6 months until 2 in a row have negative findings.	Repeat EGD after optimizing proton pump inhibitor therapy.
Radiofrequency ablation is an option if low-grade dysplasia is confirmed.	Consider ablation in select patients or perform annual surveillance.	Radiofrequency ablation may be used in patients with low-grade dysplasia.	For confirmed low-grade dysplasia without life-limiting comorbidity, the preferred treatment modality is endoscopic therapy. However, an acceptable alternative is endoscopic surveillance every 12 months.

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Article

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Enabling large-scale screening of Barrett's esophagus using weakly supervised deep learning in histopathology

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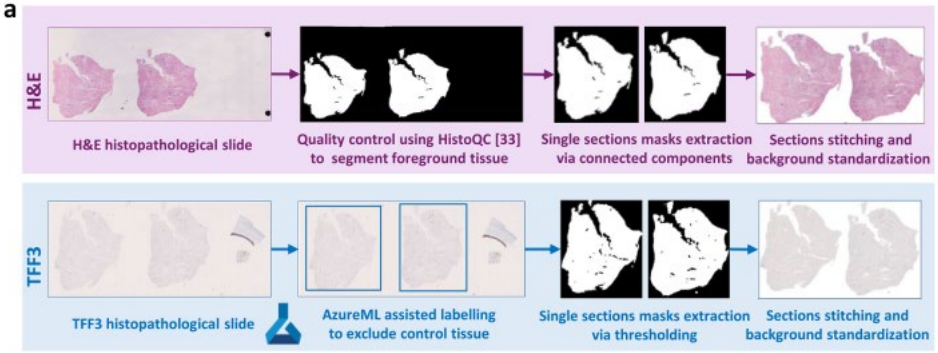

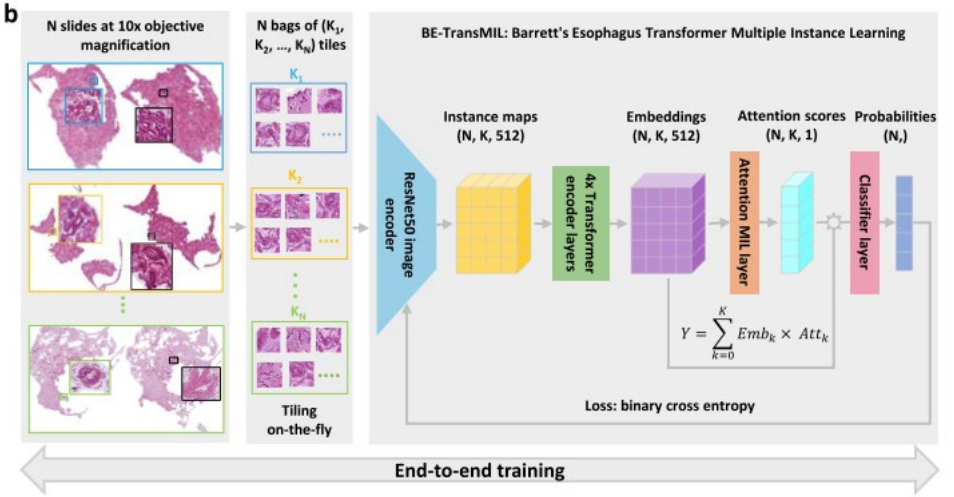

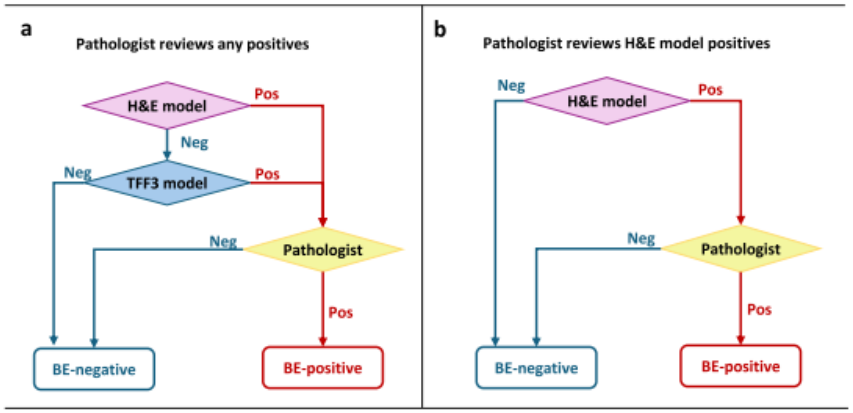

This configuration can achieve 1.00 sensitivity and 1.00 specificity on the discovery dataset with respect to the pathologists' diagnosis alone, suggesting that the two models and pathologist are complementary

In this scenario, **only 48% (41–55%) of samples would need manual review**, reduction in pathologist's workload.