# NON-CUTANEOUS EXTRA-NODAL MARGINAL ZONE LYMPHOMAS AND ITS DIFFERENTIALS (PT2)

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# EXTRANODAL MARGINAL ZONE LYMPHOMA
# Differential Diagnosis

- Lymphoma vs Reactive

# IS IT LYMPHOMA?

ACQUIRED vs NEOPLASTIC MALT

- Morphology
- Immunophenotype
- Molecular (clonality) studies

# IS IT LYMPHOMA?

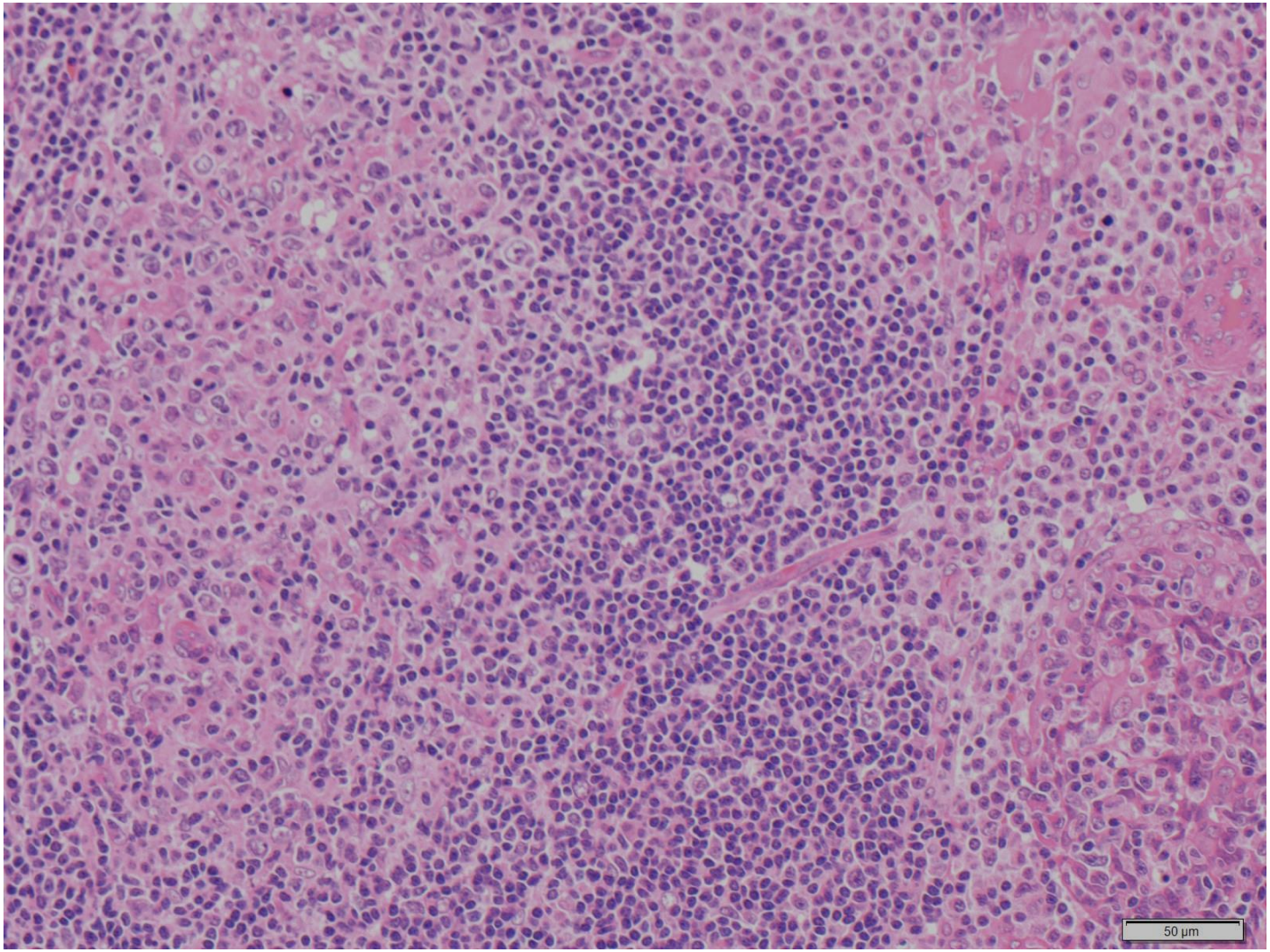
## ACQUIRED vs NEOPLASTIC MALT

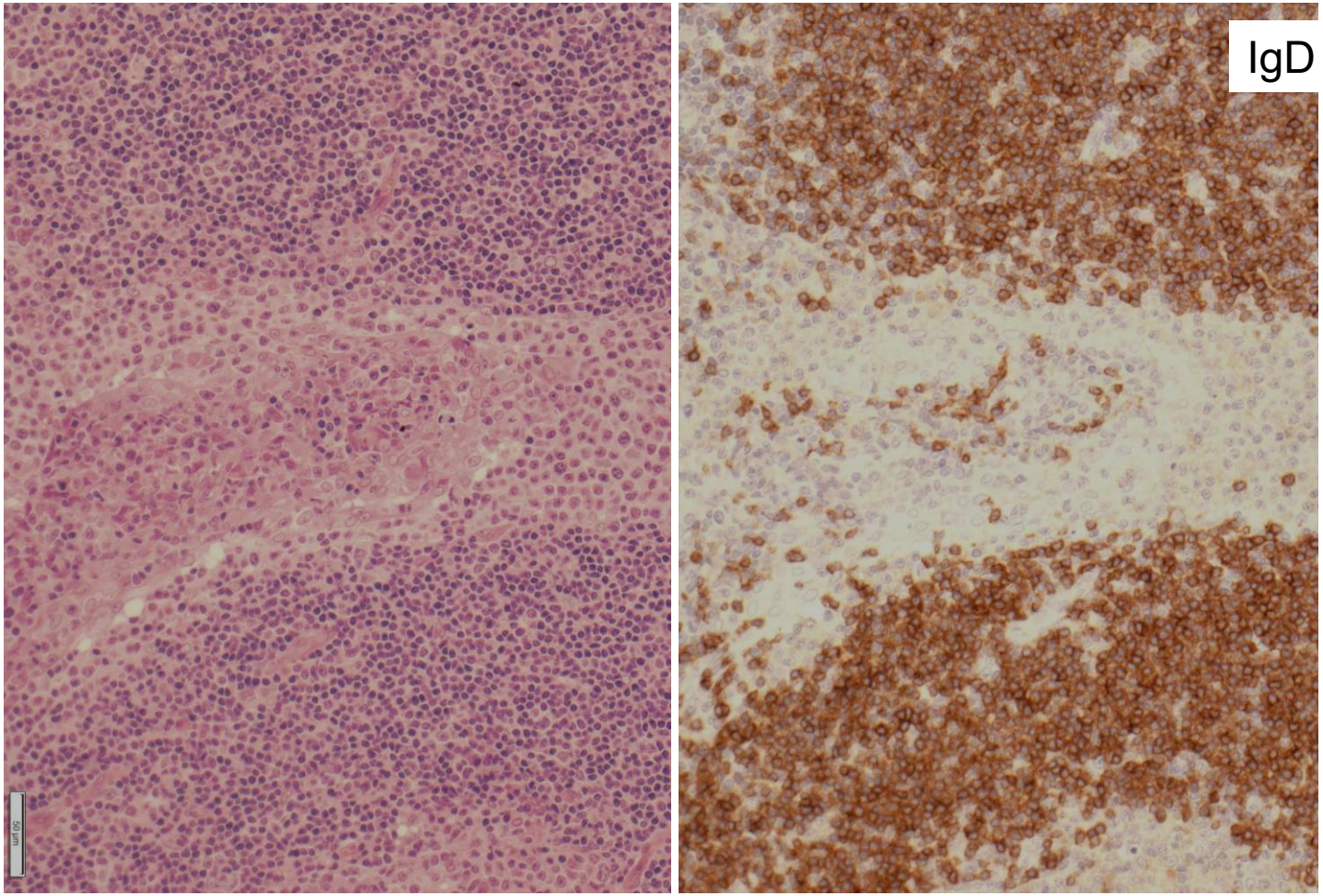
- Morphology

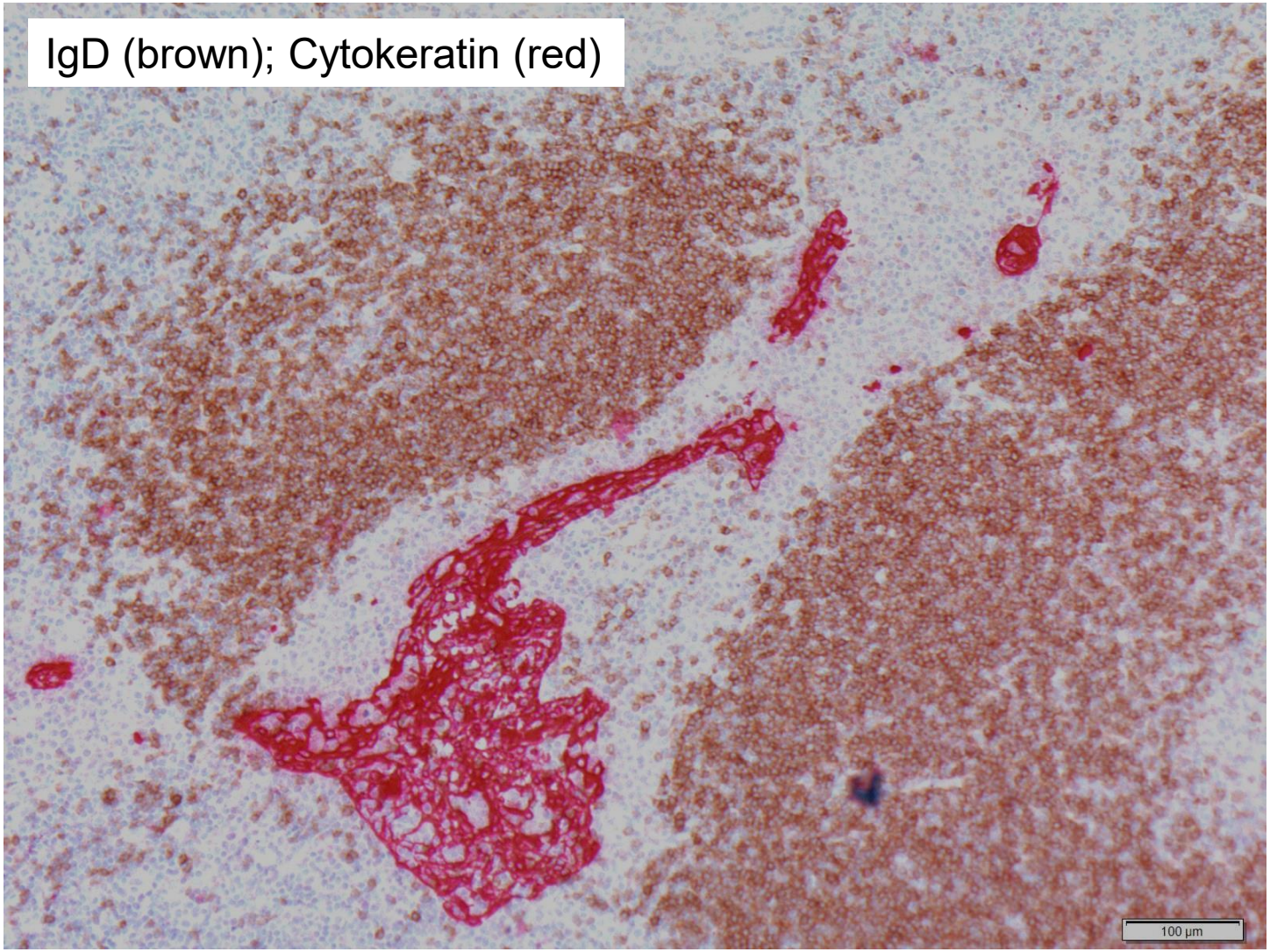
# IS IT LYMPHOMA?

## ACQUIRED vs NEOPLASTIC MALT

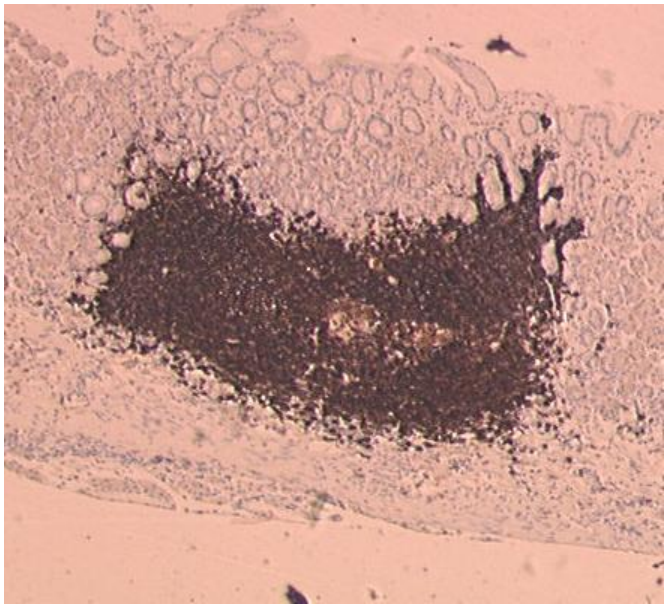
- Morphology
  - Early changes

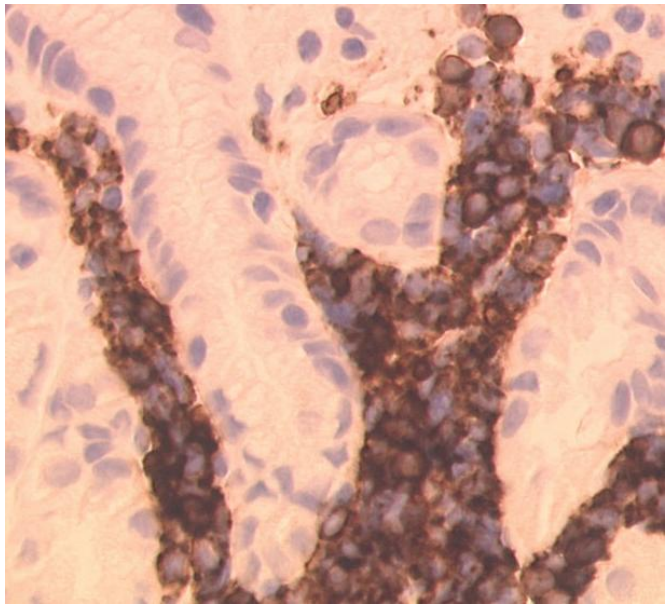

50 µm


IgD


IgD (brown); Cytokeratin (red)
100 µm

# Histological features associated with early gastric MALT lymphoma

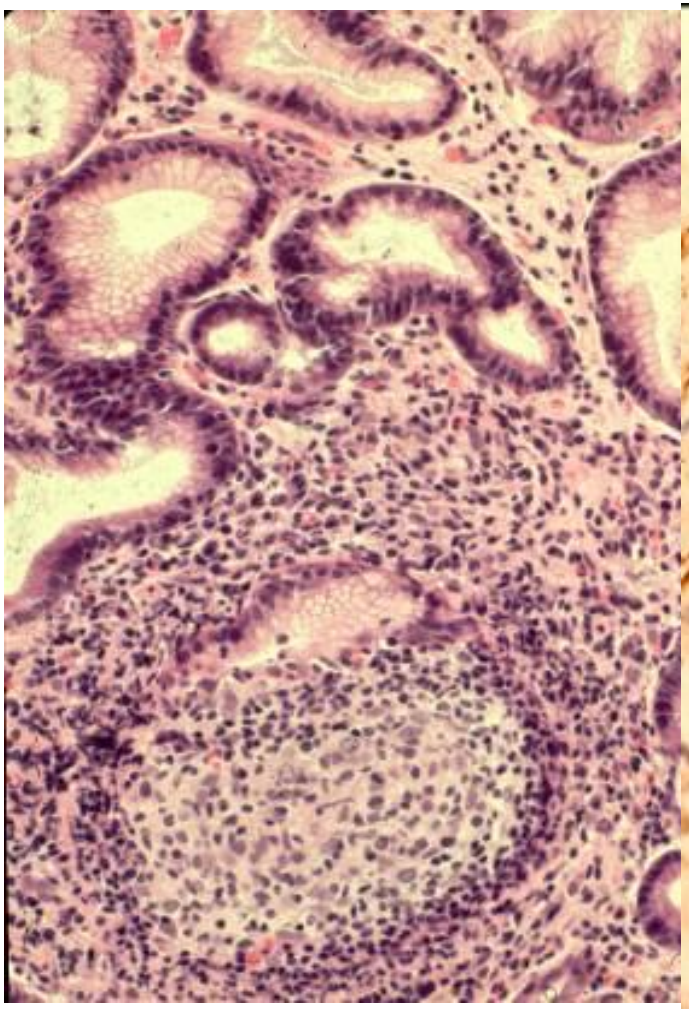


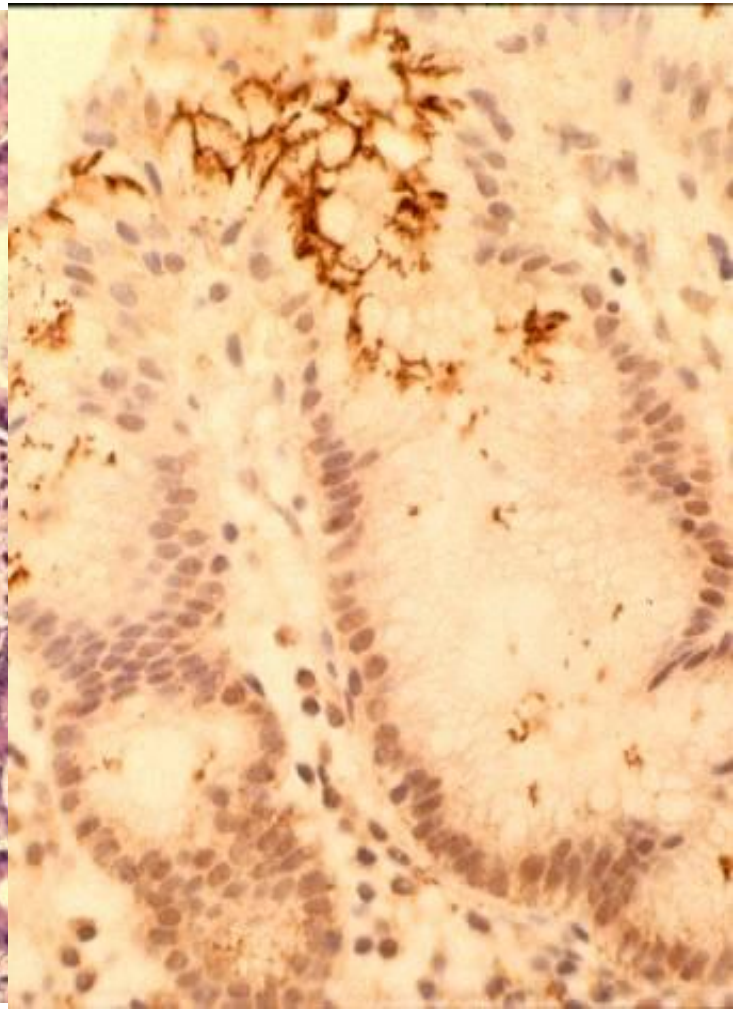


# IS IT LYMPHOMA?

## ACQUIRED vs NEOPLASTIC MALT

- Morphology
  - Early infiltration
  - Lymphoepithilum vs lymphoepithelial lesion

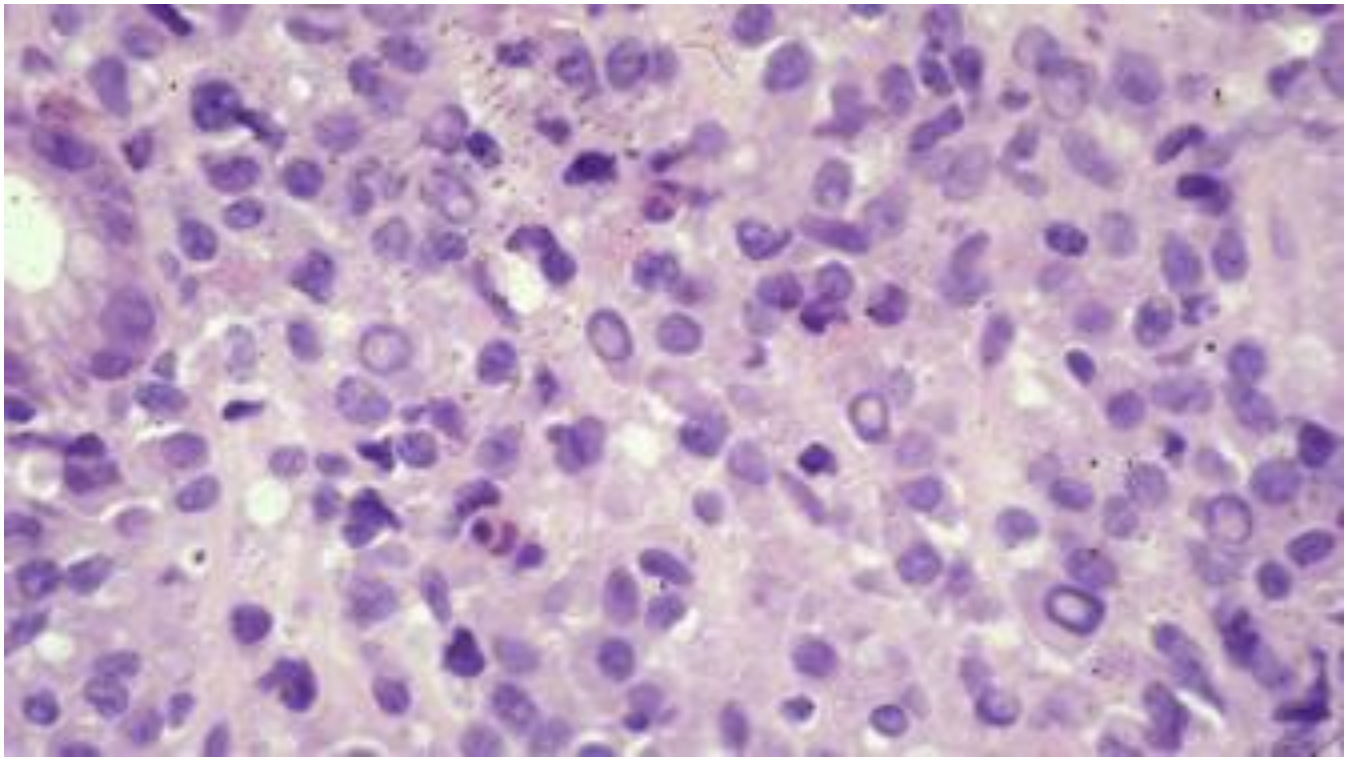




# IS IT LYMPHOMA?

## ACQUIRED vs NEOPLASTIC MALT

- Morphology
  - Early infiltration
  - Lymphoepithilum vs lymphoepithelial lesion
  - Dütcher body



# Lymphoid Infiltrates in the Stomach
## Zukerberg et al Am J Surg Pathol 1990 14; 1087-1099

| | LYMPHOMA | GASTRITIS |
|---|---|---|
| Prominent LEL | 8/24 (33%0 | 0/58 |
| Dutcher bodies | 3/25 (12% | 0/58 |
| Moderate cytological atypia (small cleaved cells) | 9/25 (36%) | 0/58 |
| | | |
| Dense lymphoid infiltrate | 25/25 (100%) | 5/58 (9%) |
| Rare/questionable LEL | 11/16 (69%) | 17/58 (29%) |
| Ulceration | 12/24 (50%) | 5/58 (9%) |
| Infiltration of muscularis mucosae | 20/20 (100%) | 20/47 (43%) |
| Mild cytological atypia | 8/16 (50%) | 6/58 (10%) |
| | | |
| Prominent acute inflammation | 2/25 (8%) | 27/58 (47%) |

Not discriminatory: Germinal centres, crypt abscesses, reactive epithelia

# IS IT LYMPHOMA?

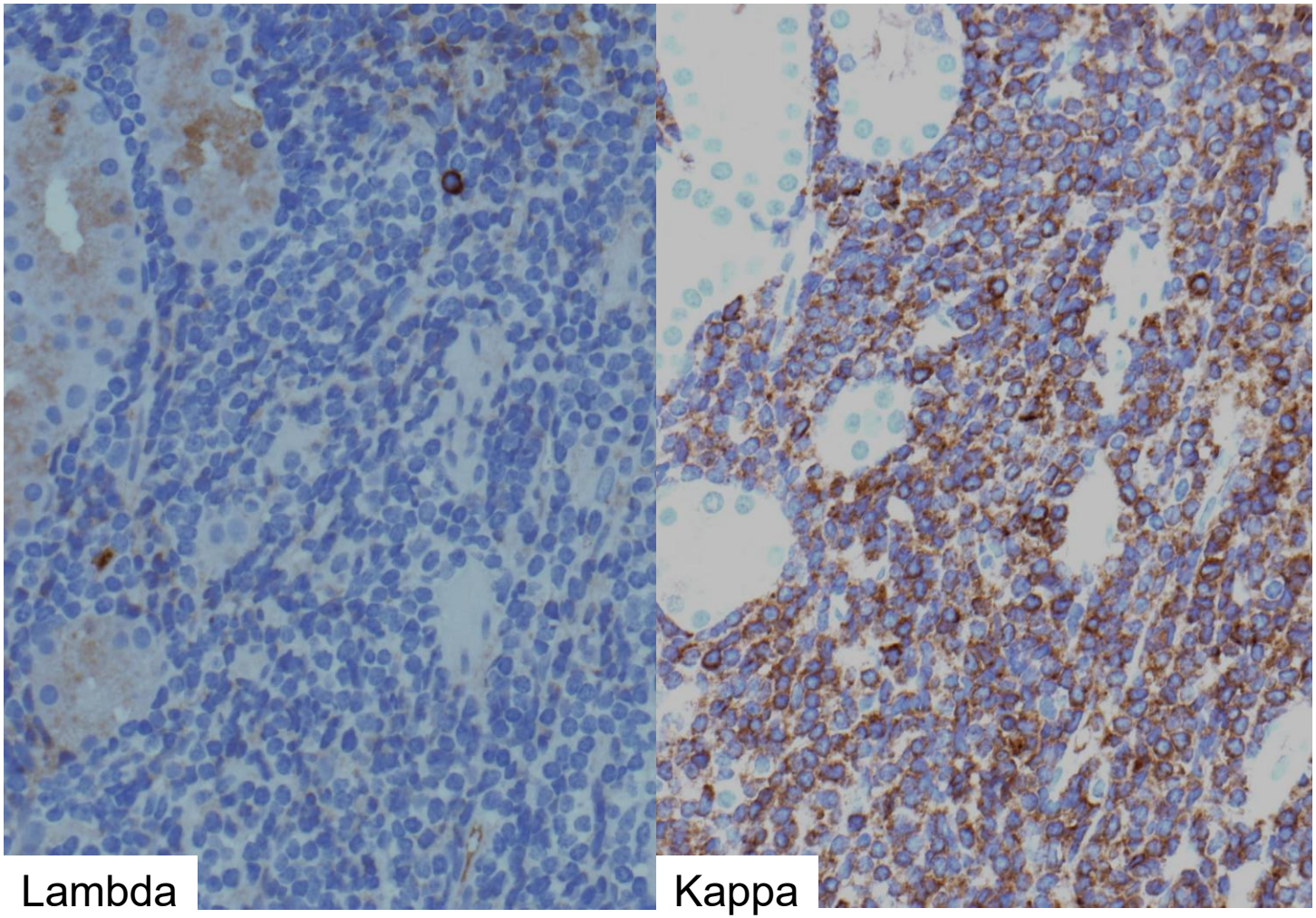
## ACQUIRED vs NEOPLASTIC MALT

- Immunophenotype
  - CD43

# IS IT LYMPHOMA?

## ACQUIRED vs NEOPLASTIC MALT

- Immunophenotype
  - CD43
  - Immunoglobulin light chain restriction


Lambda
Kappa

# IS IT LYMPHOMA?

## ACQUIRED vs NEOPLASTIC MALT

- Immunophenotype
  - CD43
  - CD5
  - Immunoglobulin light chain restriction
    - May be difficult to interpret particularly in small biopsies that are partly crushed
    - Reactive plasma cells in background

# IS IT LYMPHOMA?

## ACQUIRED vs NEOPLASTIC MALT

- Molecular (clonality) studies
  - BIOMED-2/Euroclonality IGH FR1-3 and IGK
    - False negative rate <5%
  - IGH alone
    - False negative rate +15%

**Significantly improved PCR-based clonality testing in B-cell malignancies by use of multiple immunoglobulin gene targets. Report of the BIOMED-2 Concerted Action BHM4-CT98-3936**

PAS Evans[1], Ch Pott[2], PJTA Groenen[3], G Salles[4], F Davi[5], F Berger[6], JF Garcia[7], JHJM van Krieken[3], S Pals[8], Ph Kluin[9], E Schuuring[9], M Spaargaren[8], E Boone[10], D González[11], B Martinez[12], R Villuendas[7], P Gameiro[13], TC Diss[14], K Mills[15], GJ Morgan[1], GI Carter[16], BJ Milner[17], D Pearson[18], M Hummel[19], W Jung[20], M Ott[21], D Canioni[22], K Beldjord[23], C Bastard[24], MH Delfau-Larue[25], JJM van Dongen[26], TJ Molina[27] and J Cabeçadas[28]

# IS IT LYMPHOMA?

## ACQUIRED vs NEOPLASTIC MALT

- Molecular (clonality) studies
  - Spurious false positive rate occur
    - Rates vary between laboratories
    - May be related to techniques used

Clonality studies must be interpreted with caution and should only be reported with a supportive histological context

# IS IT LYMPHOMA?

## ATYPICAL MARGINAL ZONE HYPERPLASIA vs MARGINAL ZONE LYMPHOMA

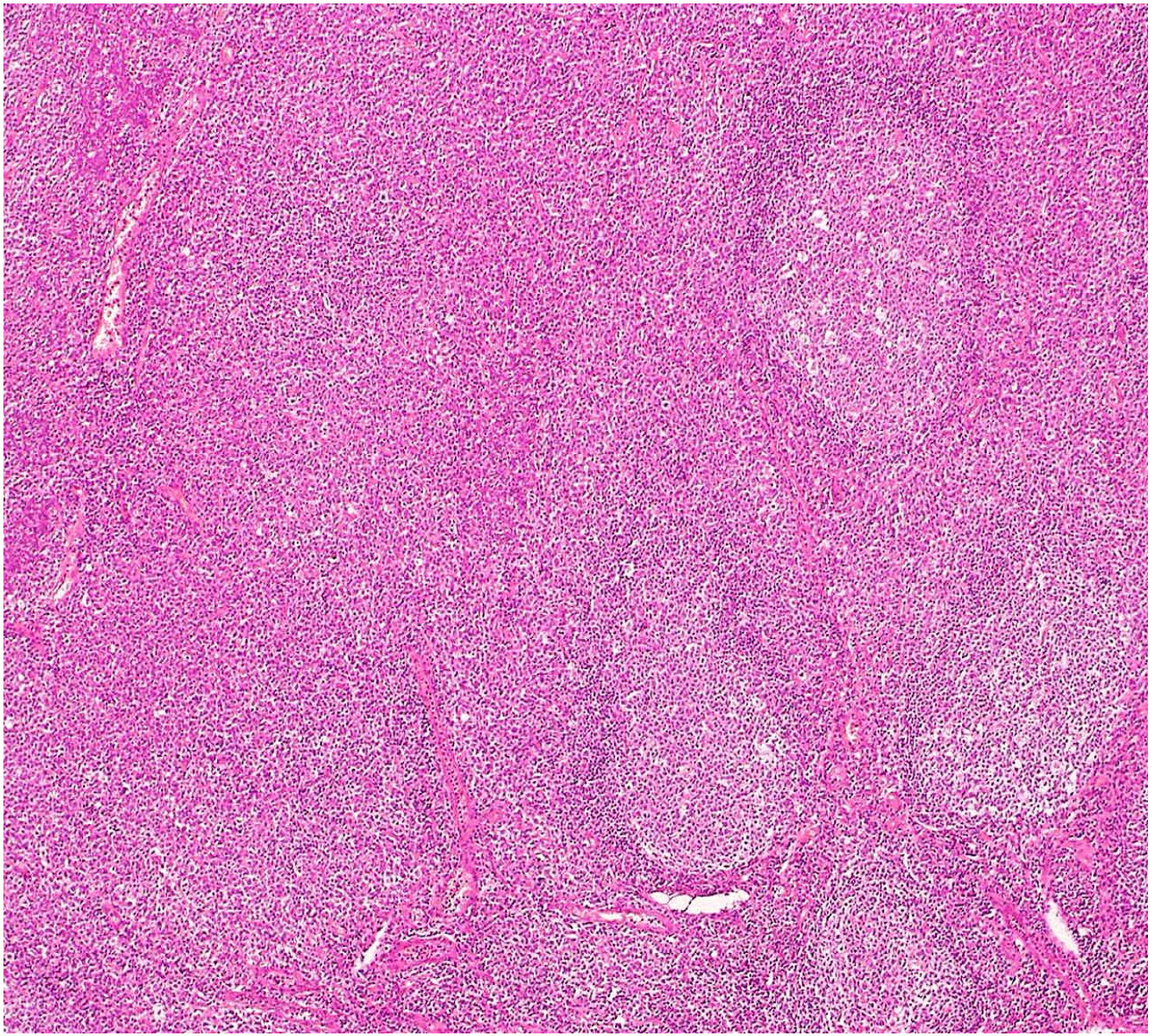
Atypical marginal zone hyperplasia of mucosa-associated lymphoid tissue: a reactive condition of childhood showing immunoglobulin lambda light-chain restriction

Ayoma D. Attygalle, Hongxiang Liu, Sima Shirali, Timothy C. Diss, Christoph Loddenkemper, Harald Stein, Ahmet Dogan, Ming-Qing Du, and Peter G. Isaacson

- 6 cases (4 tonsil, 2 appendix)

- Histopathology
  - Follicular hyperplasia
    - Some motheaten consistent with partial colonisation
  - Expanded marginal zone
  - B cells in epithelium
    - In tonsil – increased B cells in crypt epithelium
    - In appendix – focal invasion of crypt epithelium reminiscent of lymphoepithelial lesions

BLOOD 200



# IRTA1

- Surface B cell receptor that is related to the Fc receptor and cell adhesion molecule families
- In tonsil expression is confined to intra-epithelial and subepithelial B cells (Falini et al, BLOOD; 2003).
- Expressed in intra-epithelial B cells of acquired MALT
- In MALT lymphoma expression is restricted to cells forming lymphoepithelial

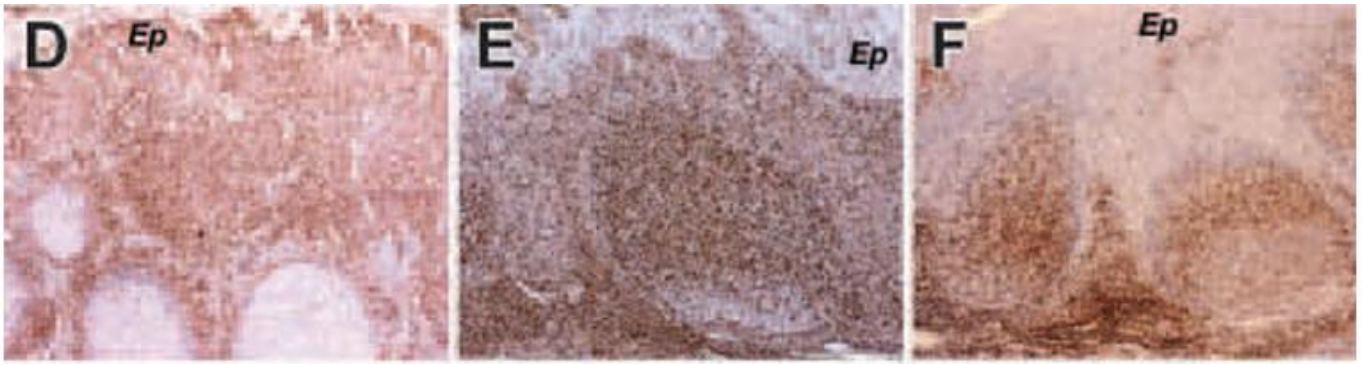
# CD27 in subepithelial B cells

- Two populations have been described
  - High expression mutated
  - Low expression unmutated

- In atypical marginal zone hyperplasia
  - Intra-epithelial B cells are **unmutated B cells** (CD27-)

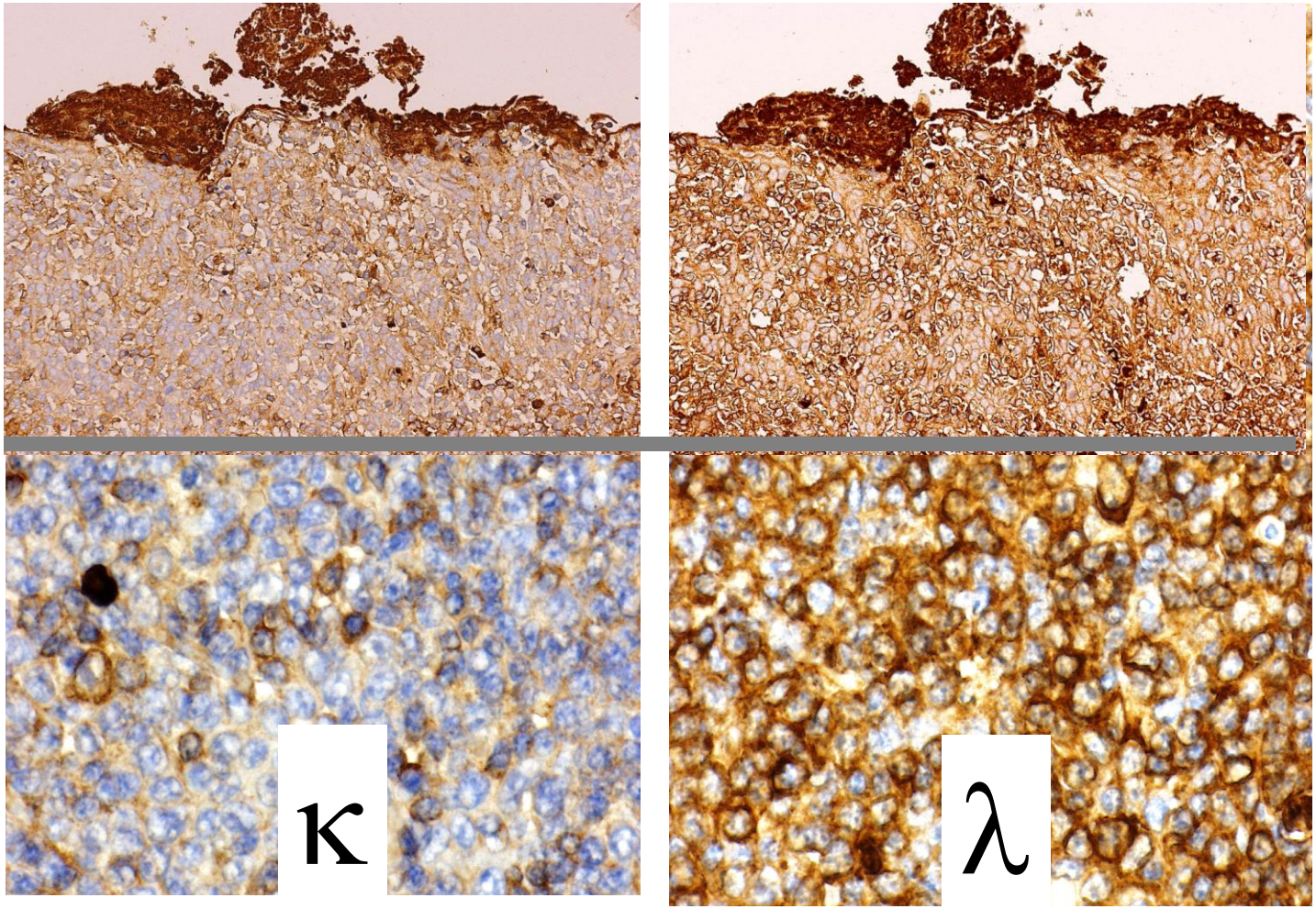
# Atypical marginal zone hyperplasia of mucosa-associated lymphoid tissue: a reactive condition of childhood showing immunoglobulin lambda light-chain restriction

Ayoma D. Attygalle, Hongxiang Liu, Sima Shirali, Timothy C. Diss, Christoph Loddenkemper, Harald Stein, Ahmet Dogan, Ming-Qing Du, and Peter G. Isaacson




D IRTA1 +
E CD43 +
F CD27 -

BLOOD 200


κ
λ

Atypical marginal zone hyperplasia of mucosa-associated lymphoid tissue: a reactive condition of childhood showing immunoglobulin lambda light-chain restriction

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| POSITIVE | NEGATIVE |
|---|---|
| CD20 | CD27 |
| IRTA1 | CD10 |
| CD43 | MUM1 |
| CD21 | |
| IgM, IgD (weak) | |
| bcl-2 | |
| | |
| **Lambda light chain restriction** | |

BLOOD 200

Atypical marginal zone hyperplasia of mucosa-associated lymphoid tissue: a reactive condition of childhood showing immunoglobulin lambda light-chain restriction

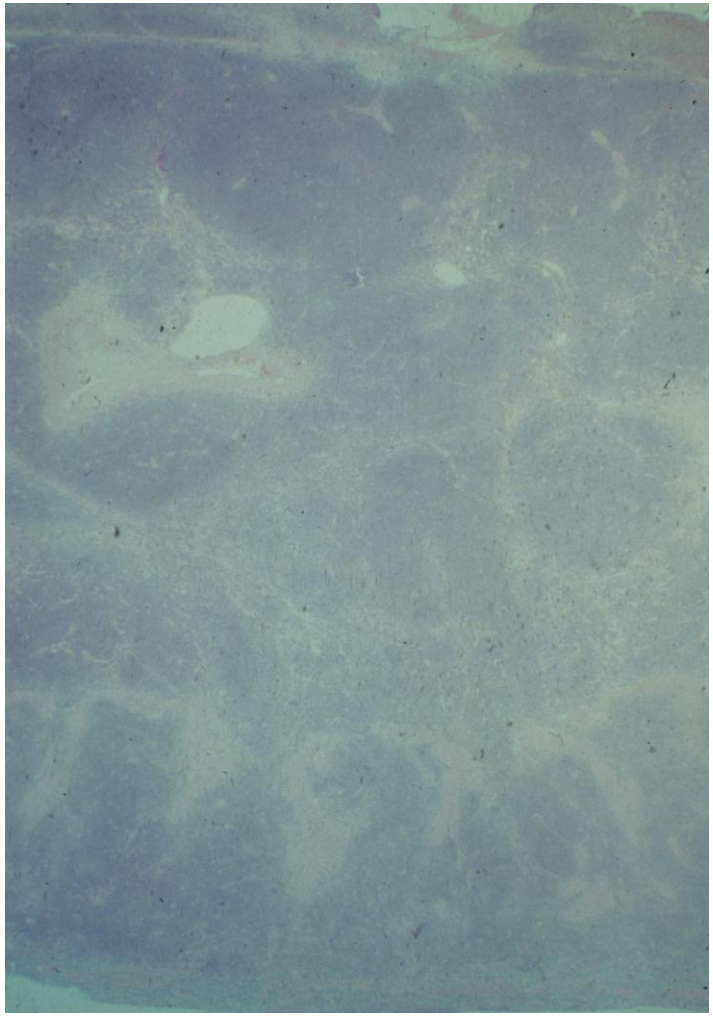
Ayoma D. Attygalle, Hongxiang Liu, Sima Shirali, Timothy C. Diss, Christoph Loddenkemper, Harald Stein, Ahmet Dogan, Ming-Qing Du, and Peter G. Isaacson

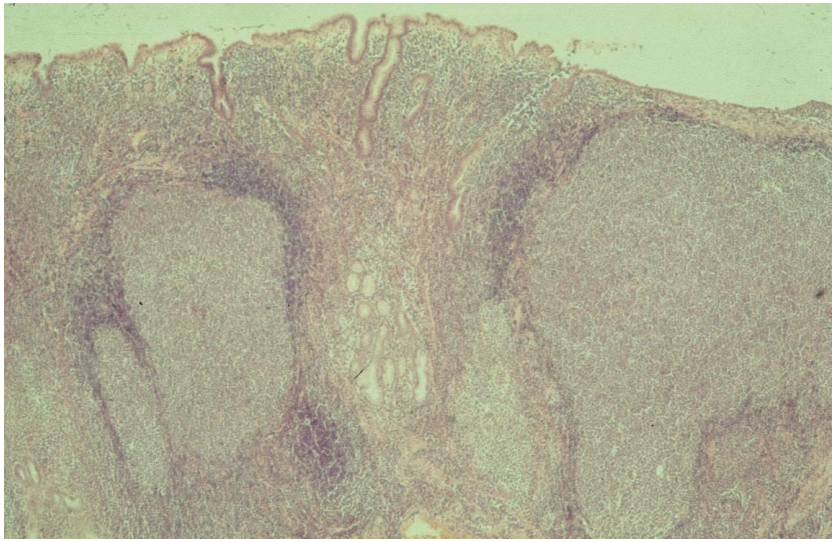
Blood 2004;104: 3343-3348

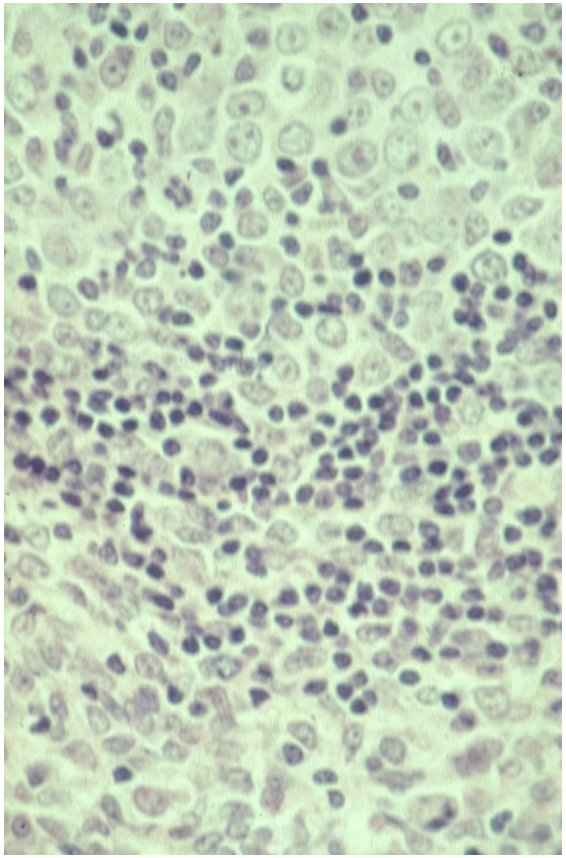
| | Extranodal marginal zone hyperplasia | Extranodal marginal zone lymphoma |
|---|---|---|
| Site | Tonsil, appendix | Rare at sites of natural MALT |
| | | |
| Age | Children | Adults, rare in children |
| | | |
| IHC | | |
| CD43 | + | +/- |
| CD27 | - | + |
| IgL | Lambda | Kappa or Lambda |
| | | |
| Clonality | Polyclonal | Monoclonal |

# EXTRANODAL MARGINAL ZONE LYMPHOMA
## Differential Diagnosis

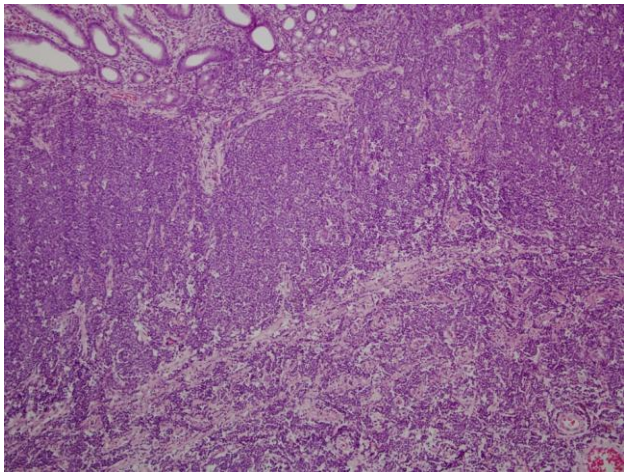
- Lymphoma vs Reactive
- Other low grade B cell lymphomas

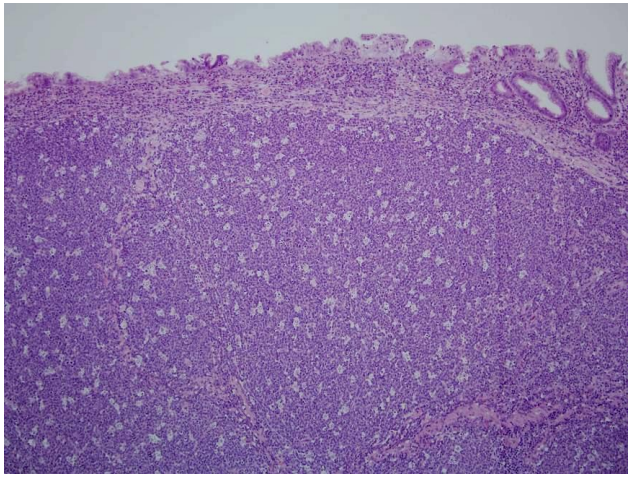


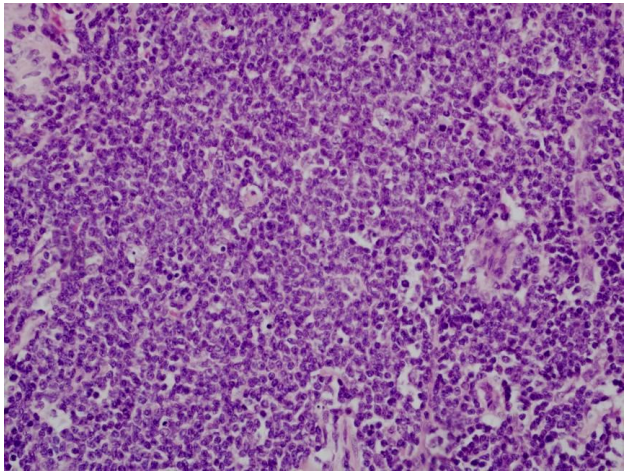




Follicular lymphoma

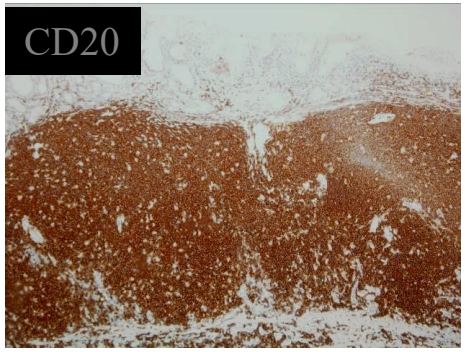


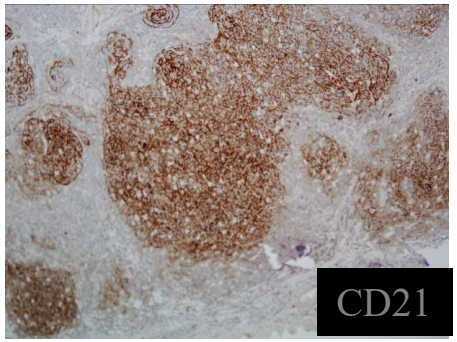


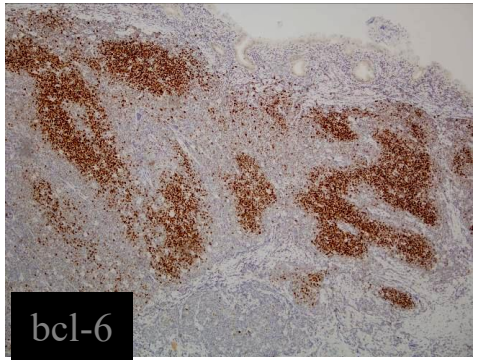


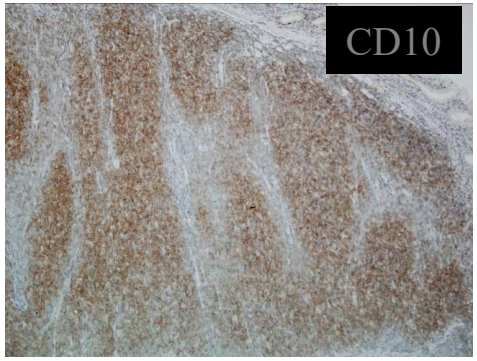
# Follicular lymphoma

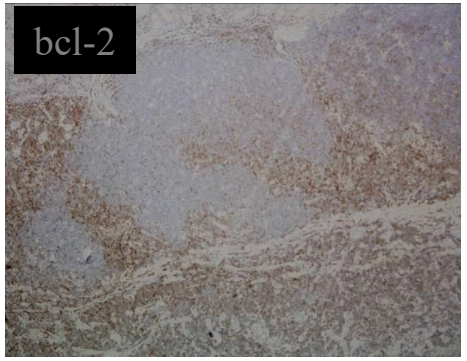
CD20 + CD5 -
CD10 + CD23 -
bcl-6 + CyclinD1 -
bcl-2 +/-

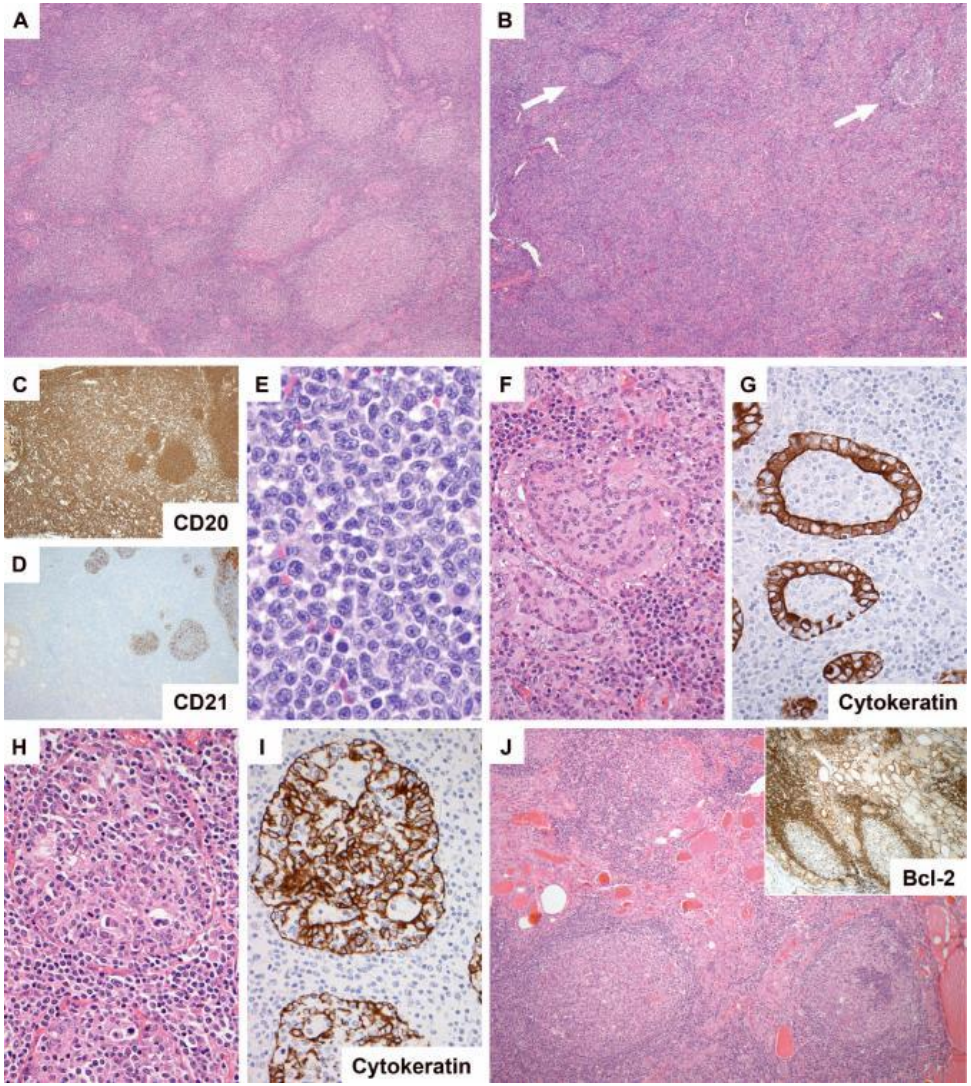





Follicular Lymphoma of the Thyroid Gland
Bacon CM et al
Am J Surg Pathol 2009; 33: 22-34

# EXTRANODAL MARGINAL ZONE LYMPHOMA
# Differential Diagnosis

- Lymphoma vs Reactive
- Other low grade B cell lymphomas
- TFH lymphoma

# Expansion of PD1-positive T Cells in Nodal Marginal Zone Lymphoma:

## A Potential Diagnostic Pitfall

**Caoimhe Egan, MB, BCh, BAO[*], Camille Laurent, MD, PhD[†], Julie C. Alejo, BS[*], Stefano Pileri, MD, PhD[‡], Elias Campo, MD, PhD[§], Steven H. Swerdlow, MD[‖], Miguel Piris, MD, PhD[¶], Wing C. Chan, MD[#], Roger Warnke, MD[**], Randy D. Gascoyne, MD[††], Liqiang Xi, MD[*], Mark Raffeld, MD[*], Stefania Pittaluga, MD, PhD[*], Elaine S. Jaffe, MD[*]**

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## Abstract

The diagnosis of nodal marginal zone lymphoma (NMZL) can be challenging, with the differential diagnosis including other low-grade B-cell lymphomas, reactive hyperplasia, and even some cases of peripheral T-cell lymphoma (PTCL). PTCL may have a perifollicular growth pattern mimicking NMZL. We and others have noted an atypical distribution of T-follicular helper ($T_{FH}$) cells in some cases of NMZL. This study was prompted by the diagnosis of NMZL in several cases in which a marked increase of $T_{FH}$ cells, as determined by staining for programmed death-1 (PD1), had prompted suspicion for a diagnosis of PTCL. We analyzed PD1 staining in 48 cases of NMZL to characterize the extent and pattern of the PD1-positive infiltrate. Three main patterns of PD1 staining were identified: follicular pattern (peripheral, n= 16; central, n = 9; mixed, n = 3), diffuse pattern (n = 4), and a reduced or normal staining pattern in residual follicles (n = 16). A

Am J Surg Pathol 2020 44: 657-6

Histopathology

*Histopathology* 2019, **75**, 287–290. DOI: 10.1111/his.13858

# Lesson of the month

## Florid T follicular helper cell hyperplasia associated with extranodal marginal zone lymphoma: a diagnostic pitfall which may mimic T cell lymphoma

DOI: 10.1111/his.13858

VROOBEL KM et al

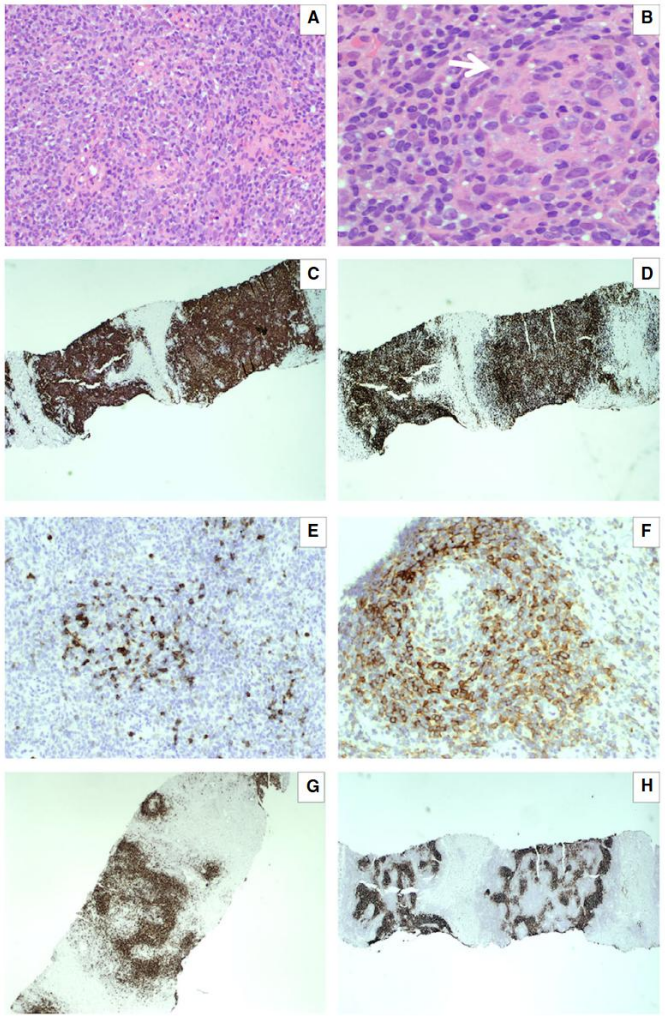
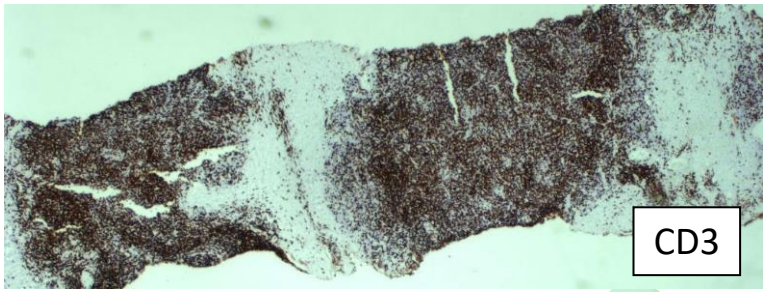
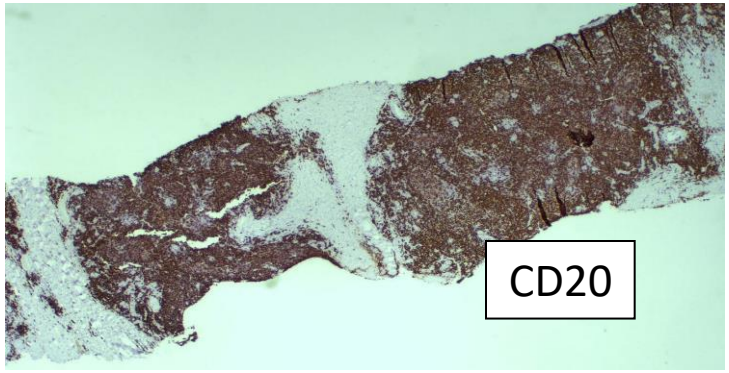
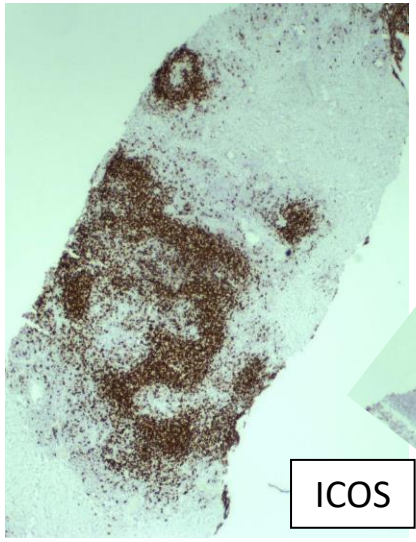


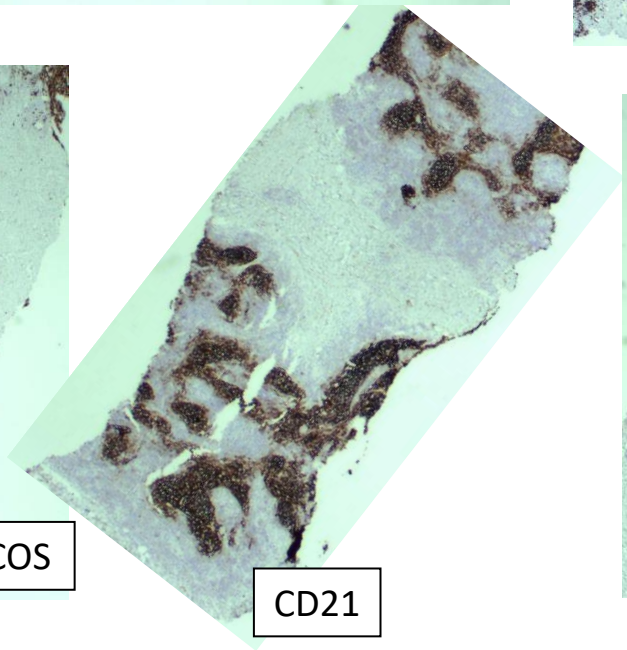

**Figure 1.** **A**, Haematoxylin and eosin (H&E). Polymorphous lymphoid infiltrate with some plasma cells and a degree of vascular proliferation. **B**, H&E. Polymorphous infiltrate with small regressed follicle (arrow). **C**, There was a dense CD20-positive small B cell population (×4) although there was a corresponding prominent CD3-positive T cell population (×4) **D**. T cells within the regressed follicle and spilling outside of it expressed CD10 (subset) (**E**), PD-1 (**F**) and ICOS (**G**). CD21 showed an expanded follicular dendritic cell meshwork **(H)**, which was closely related to the ICOS-positive population.

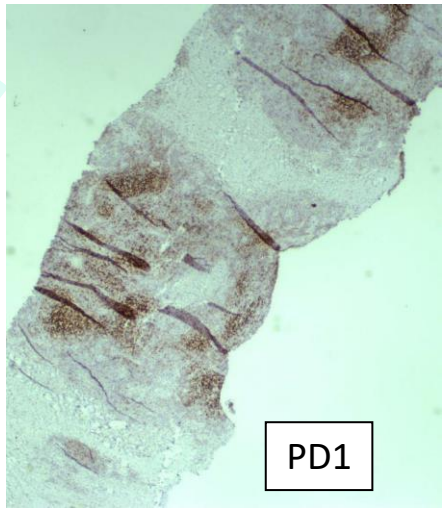
**BEWARE!!!** **Expansion of TFH cells in histologically low grade B-cell lymphomas**




62-year old female
Groin mass biopsy

Initial misdiagnosis: TFHL-AI

**Diagnosis: Extranodal marginal zone lymphoma of soft tissue**

***Vroobel et al 2019***

# NON-MARGINAL ZONE B CELL LYMPHOMAS OF THE GASTROINTESTINAL TRACT

Andrew Wotherspoon
Royal Marsden Hospital
London,  UK

# NON-MARGINAL ZONE B CELL LYMPHOMAS OF THE GASTROINTESTINAL TRACT

- Duodenal-type follicular lymphoma
- Mantle cell lymphoma
- Small lymphocytic lymphoma/chronic lymphocytic leukaemia
- Diffuse large B cell lymphoma
- Burkitt lymphoma

# Primary Gastrointestinal Follicular Lymphoma

1-3% of GI NHL

- Age 50-60yrs
- Sex F:M 2:1

# Primary Gastrointestinal Follicular Lymphoma

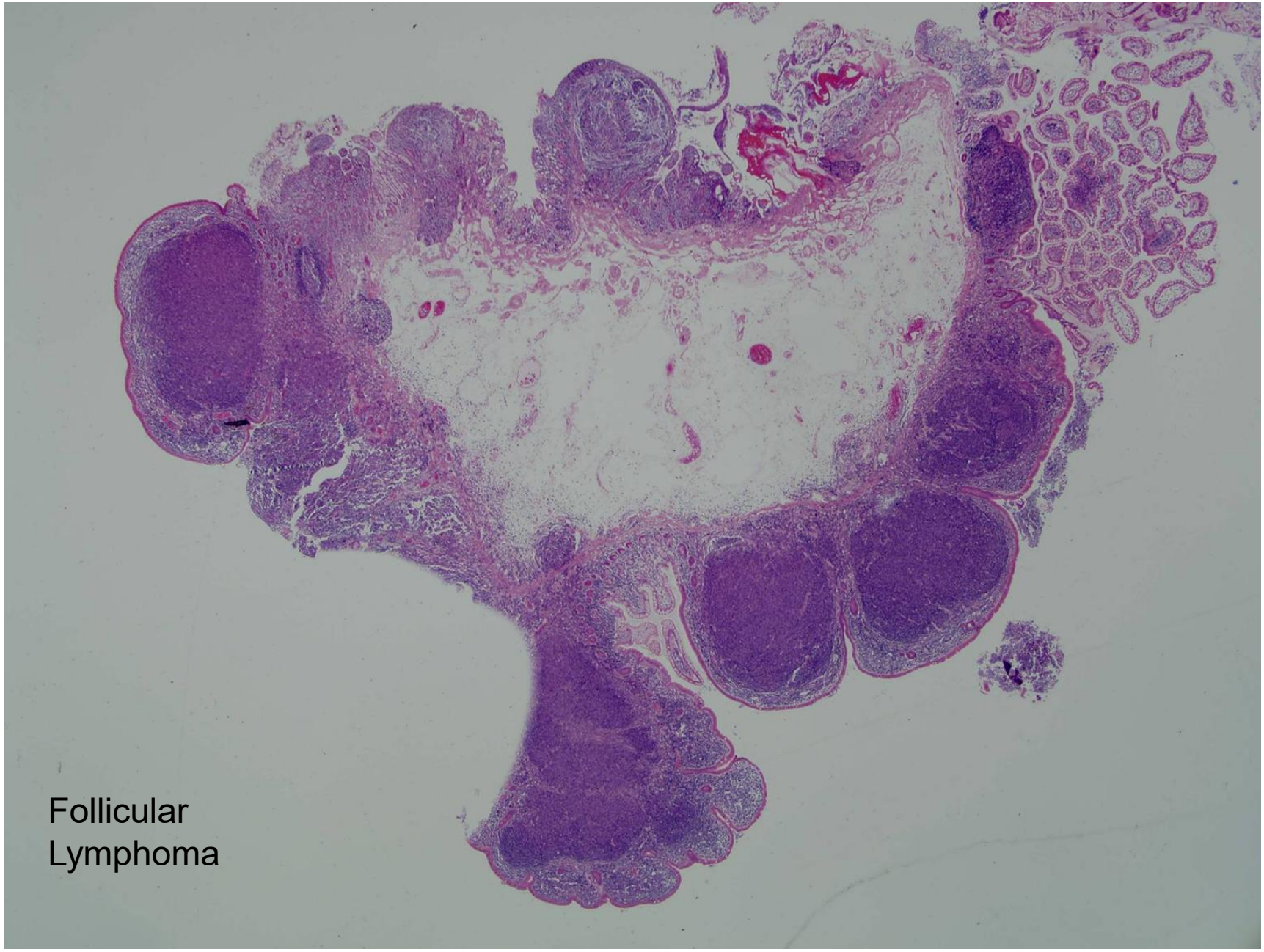
Symptoms

- Abdominal pain
- Intestinal obstruction

# Primary Gastrointestinal Follicular Lymphoma

Presentation

- Small polyps  - most frequent presentation in colon
- Diffuse obstructing lesion – most frequent presentation in SI


Follicular
Lymphoma

# Primary Gastrointestinal Follicular Lymphoma

## Location

| | Stomach | SI | Colo-rectum | Multiple |
|---|---|---|---|---|
| Yoshino et al 2000 | 1 | 5 | 1 | 1 |
| Shia et al 2002 | 0 | 13 | 4 | 3 |
| Damaj et al 2003 | 0 | 13 | 2 | 10 |

In SI duodenum is favoured site (16/31)

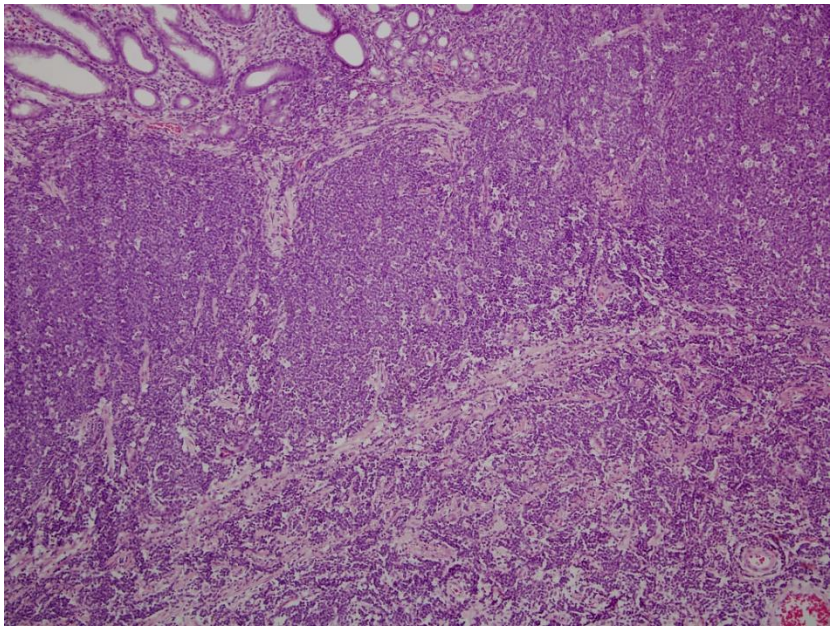
# Primary Gastrointestinal Follicular Lymphoma

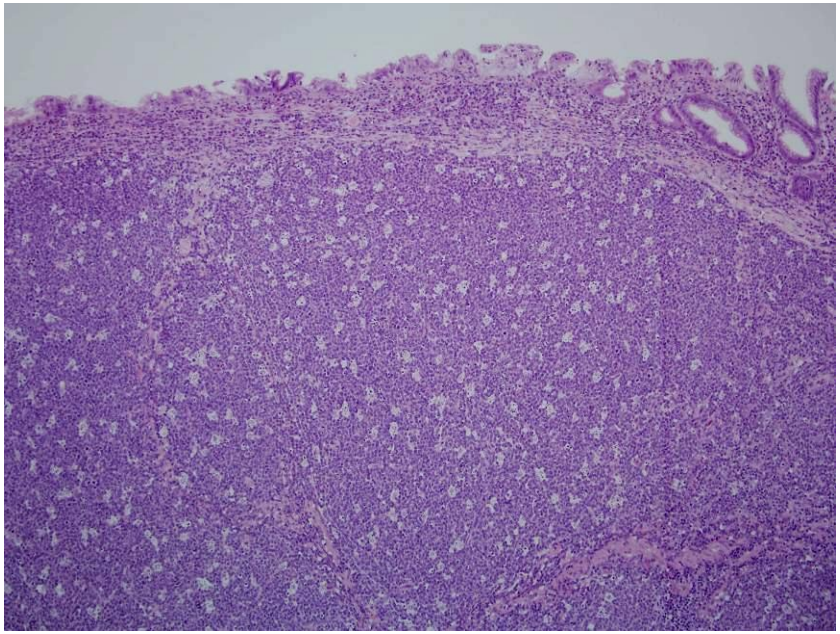
Distribution

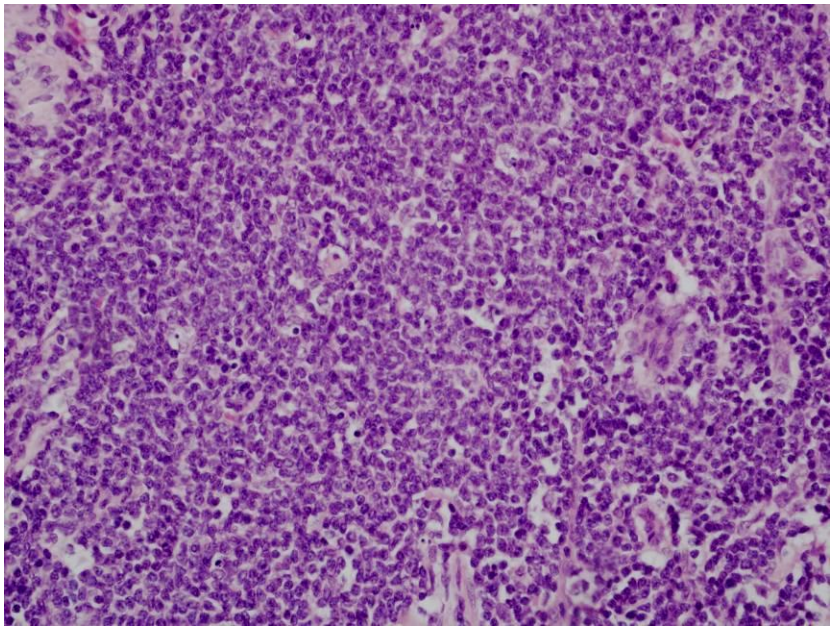
| | Unifocal | Multifocal | MLP-like |
|---|---|---|---|
| Stomach | 0 | 3 | |
| Duodenum | 4 | 5 | 2 |
| Jejunum | 2 | 4 | |
| Ileum | 7 | 6 | |
| Colon | 1 | 4 | 4 |
| Rectum | 1 | 4 | 1 |
| Anus | 0 | 1 | |

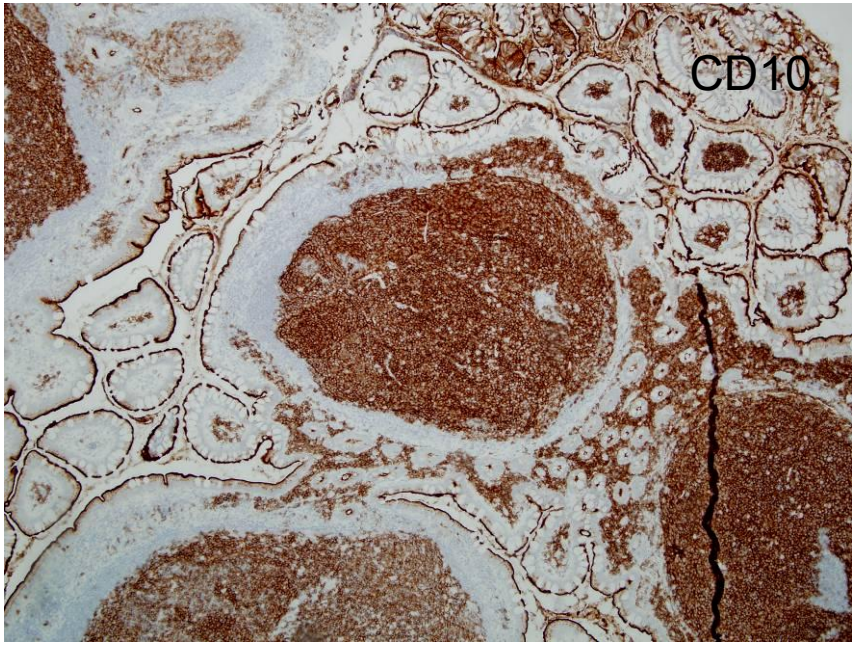
Damaj et al 2003

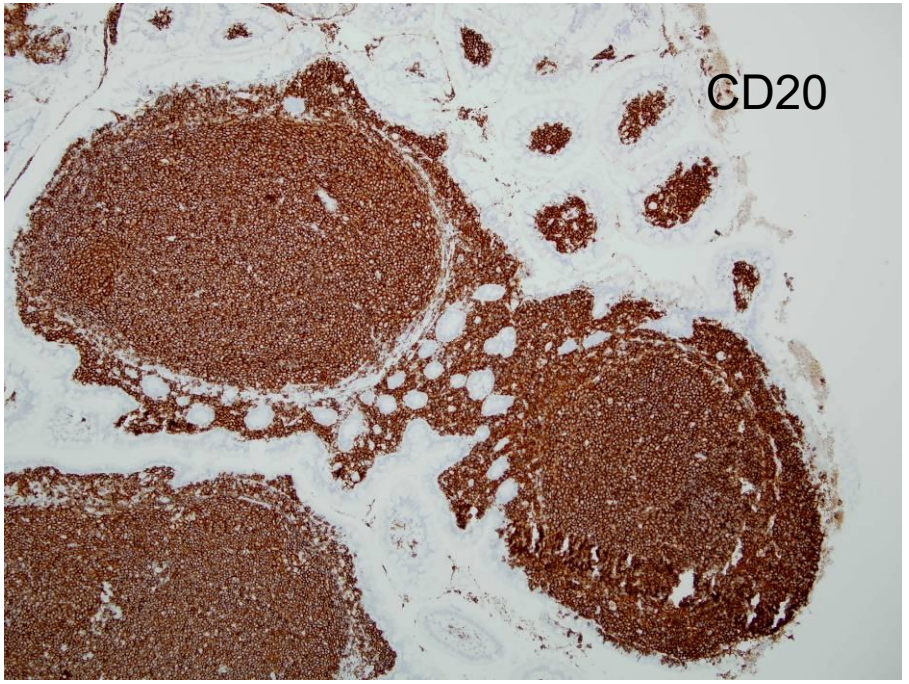
# Follicular lymphoma








CD10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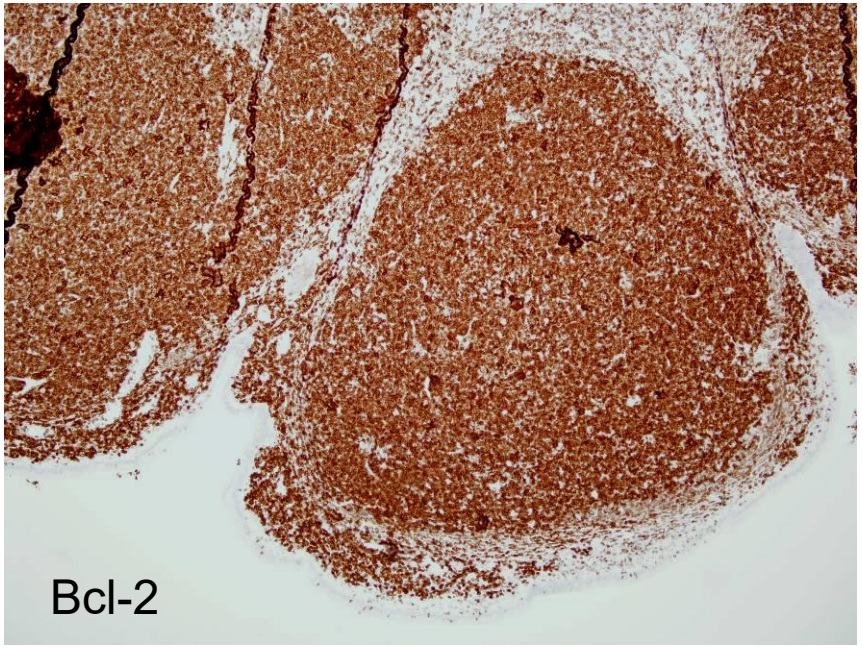
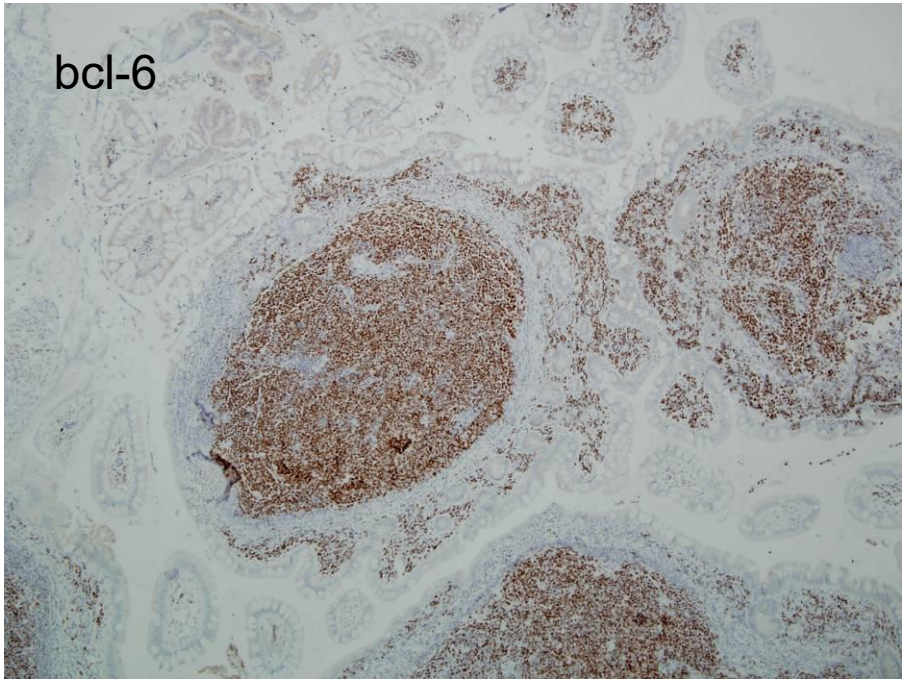
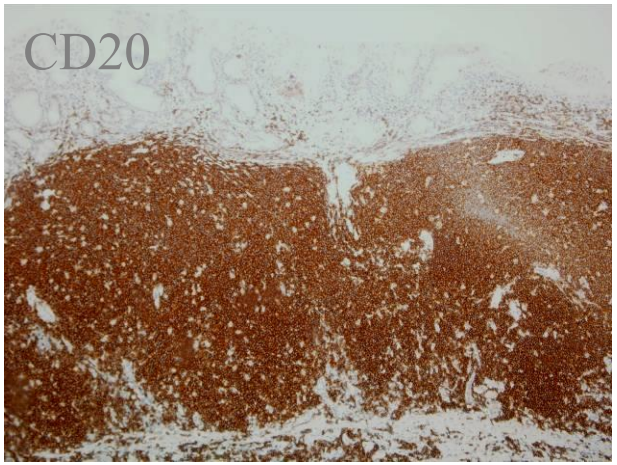

Bcl-2

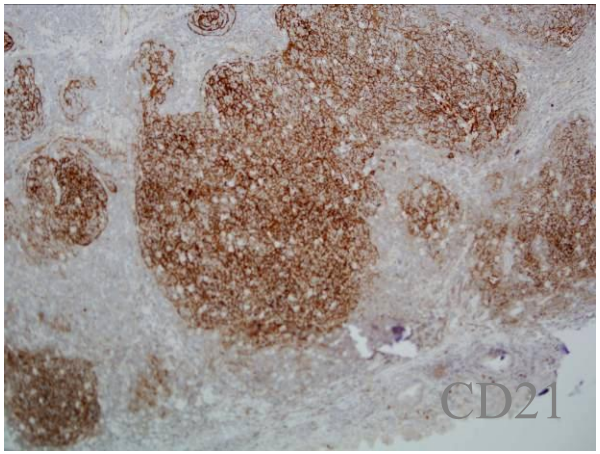

bcl-6

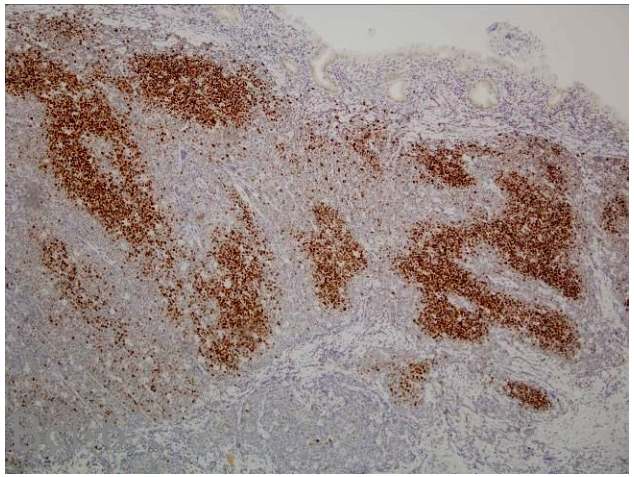
# Follicular lymphoma

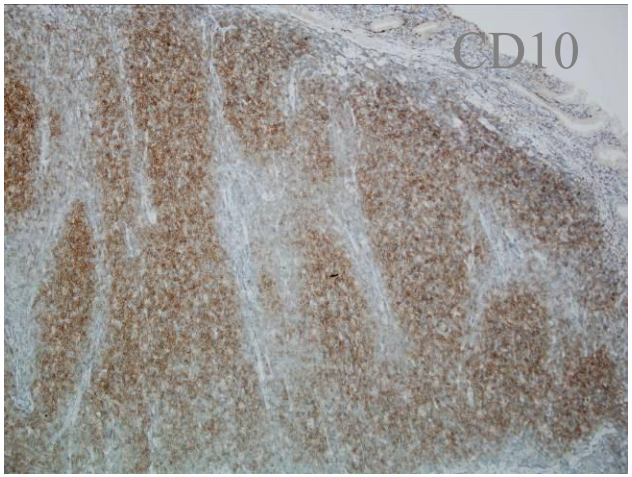
CD20 +
CD10 +
bcl-6 +
bcl-2 +/-

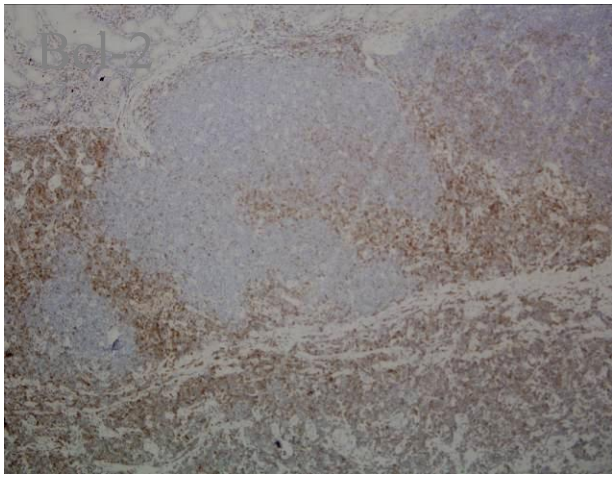
CD5 -
CD23 -
CyclinD1 -





# Primary Gastrointestinal Follicular Lymphoma

Morphology

- Most are grade 1
  - Grade 1 23/25
  - Grade 2 2/25
  - Grade 3 0/25

Damaj et al 2003

Immunophenotype

- As for nodal lymphoma

| | |
|---|---|
| CD10+ | 18/20 |
| Bcl-2+ | 23/23 |
| CD5- | 20/20 |

Damaj et al 2003

# Primary Gastrointestinal Follicular Lymphoma

BCL-2 expression

| | |
|---|---|
| Stomach | 2/6 (33%) |
| SI | 10/11 (91%) |
| Ileocaecal | 2/2 (100%) |
| Colon | 4/5 (80%) |

Le Brun et al 1992

# Primary Gastrointestinal Follicular Lymphoma

Expression of IgA

3/4 cases (Bende et al 2003)

Expression of α4β7

Mediates migration to intestinal mucosa by binding to Mad-CAM-1 on mucosal vascular endothelium

4/4 (100%) cases GI FL

2/21 (9.5%) cases nodal FL

(Bende et al 2003)

# Primary Gastrointestinal Follicular Lymphoma

Genetics

t(14;18) frequent finding

| | |
|---|---|
| Poggi et al 2002 | 1/1 |
| Bende et al 2003 | 4/4 |
| Damaj et al 2003 | 11/14 |

# Primary Gastrointestinal Follicular Lymphoma

Stage – majority stage 1/11

| | | | |
|---|---|---|---|
| I | 12/25 | (48%) | |
| II | 10/25 | (40%) | |
| IV | 3/25 | (12%) | [minimal BM disease] |

Normal LDH and $B_2M$

# Primary Gastrointestinal Follicular Lymphoma

Behaviour

- Indolent
- Low frequency of dissemination

# Primary Gastrointestinal Follicular Lymphoma

Outcome

Damaj et al 2003 - 25 patients

**7pts no further treatment (5 unifocal)**

Progression in 4

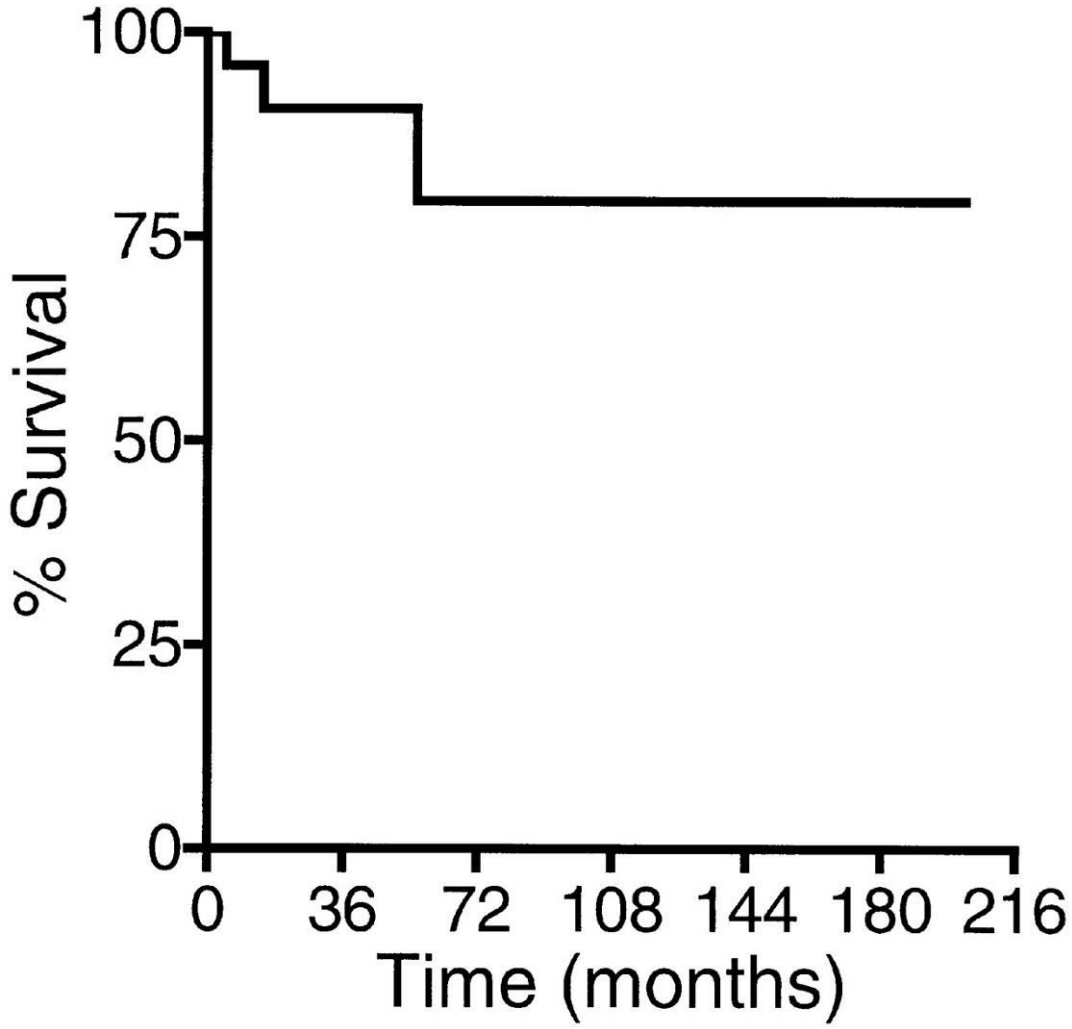
Median time to progression 37.5m (range 4-87m)

One developed CNS involvement @ 4m and died

6 alive with stable disease

Median FU 25m (range 8-87m)

**Survival curve of all patients with primary follicular lymphoma of the gastrointestinal tract**




**Damaj, G. et al. Ann Oncol 2003 14:623-629;**



Annals of Oncology

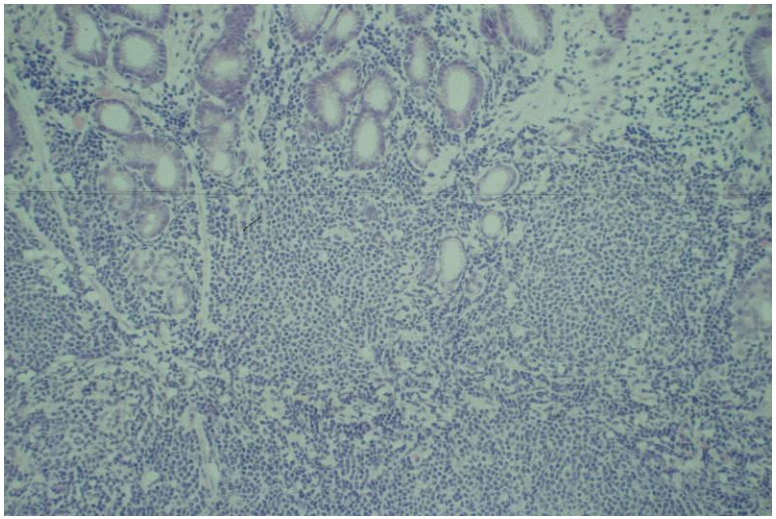
# Primary Gastrointestinal Mantle Cell Lymphoma

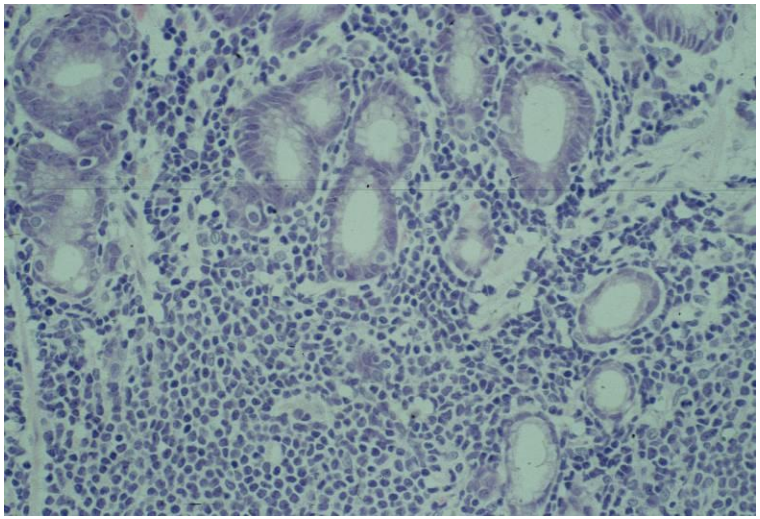
Age range 50-70

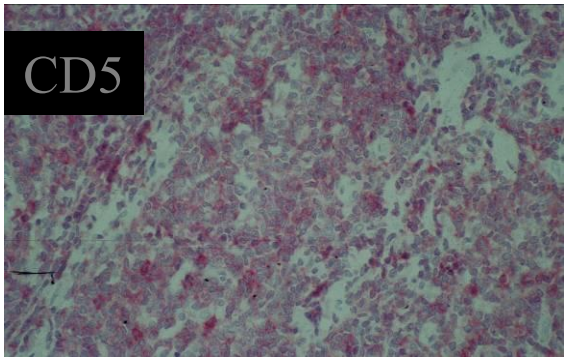
Presentation

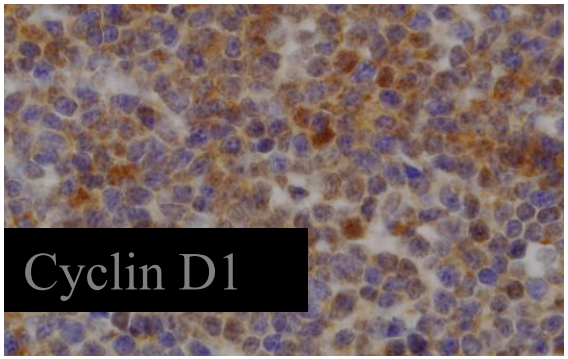
- Abdominal pain
- Diarrhoea
- Rectal bleeding

# Mantle cell lymphoma








| | |
|---|---|
| CD20 + | CD23 - |
| CD5 + | CD10 - |
| Cyclin D1 + | bcl-6 - |
| bcl-2 + | |

# Primary Gastrointestinal Mantle Cell Lymphoma

Immunophenotype

Similar to nodal MCL

CD5+, CyclinD1+

Genetics

Similar to nodal MCL

t(11;14)

# Primary Gastrointestinal Mantle Cell Lymphoma

Survival

5yr overall survival <50%

# Multiple Lymphomatous Polyposis

2% of primary GI lymphomas

- Mantle cell lymphoma

- Follicular lymphoma
- MALT lymphoma
- B-CLL

# Frequency of Gastrointestinal Involvement and Its Clinical Significance in Mantle Cell Lymphoma

**Jorge E. Romaguera, M.D.**[1]
**L. Jeffrey Medeiros, M.D.**[2]
**Frederick B. Hagemeister, M.D.**[1]
**Luis E. Fayad, M.D.**[1]
**Maria A. Rodriguez, M.D.**[1]
**Barbara Pro, M.D.**[1]
**Anas Younes, M.D.**[1]
**Peter McLaughlin, M.D.**[1]
**Andre Goy, M.D.**[1]
**Andreas H. Sarris, M.D., Ph.D.**[1]
**Nan H. Dang, M.D., Ph.D.**[1]
**Felipe Samaniego, M.D.**[1]
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**Harish K. Gagneja, M.D.**[2]
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[3] Department of Gastroenterology, The University of Texas M. D. Anderson Cancer Center, Houston, Texas.

**BACKGROUND.** The reported frequency of gastrointestinal (GI) tract involvement in patients with mantle cell lymphoma (MCL) is 15–30%. However, this figure most likely is an underestimate because most patients with MCL involving the GI tract previously reported were examined endoscopically only if they had GI tract symptoms. The impact of endoscopic assessment on the management of MCL patients is unknown.

**METHODS.** From March 1998 to May 2001 baseline upper and lower endoscopy of the GI tract was performed in consecutive untreated patients with MCL as part of a prospective therapeutic trial. Biopsies were performed on abnormal as well as macroscopically normal mucosa. Endoscopy was repeated during treatment and as part of follow-up evaluations.

**RESULTS.** Only 26% of patients presented with GI symptoms at the time of diagnosis. MCL was present histologically in the lower GI tract of 53 of 60 patient (88%) and in the upper GI tract of 28 of 58 patients (43%). Microscopic evidence of MCL was found in 84% of patients with normal visual (macroscopic) findings by lower endoscopy and in 45% of patients with macroscopically normal findings by upper endoscopy. Despite this high frequency of GI tract involvement, the use of upper and lower endoscopy with biopsies in this group of patients resulted in changes in clinical management in only three (4%) patients.

**CONCLUSIONS.** Gastrointestinal tract involvement was found to be present in most patients with MCL, usually at a microscopic level involving macroscopically normal mucosa. The use of aggressive staging evaluation of the GI tract was found to have little impact on patient management decisions in the current study. ***Cancer* 2003;97:586–91.** 
DOI 10.1002/cncr.11096

# Frequency of Gastrointestinal Involvement and Its Clinical Significance in Mantle Cell Lymphoma

- Baseline upper and lower endoscopy in consecutive untreated patients with MCL as part of a clinical trial
- 14/54 (26%) who underwent upper and lower endoscopy had symptoms

# Frequency of Gastrointestinal Involvement and Its Clinical Significance in Mantle Cell Lymphoma

- Lower GI tract (67 patients)
  - 7 no biopsy evaluable
  - 53/60 (88%) had pathological evidence of MCL
  - 26/31(84%) with normal endoscopy had evidence of MCL
- Upper GI tract (62 patients)
  - 4 no biopsy evaluable
  - 28/58 (43%) had pathological evidence of MCL
  - 10/22 (45%) with normal endoscopy had evidence of MCL

Castellino et al. *Blood Cancer Journal* (2021)11:8
https://doi.org/10.1038/s41408-020-00394-z

Blood Cancer Journal

ARTICLE Open Access

# Clinical characteristics and outcomes of primary versus secondary gastrointestinal mantle cell lymphoma

Alessia Castellino[1,2], Aung M. Tun[1,3], Yucai Wang[1], Thomas M. Habermann[1], Rebecca L. King[4], Kay M. Ristow[1], James R. Cerhan[5], David J. Inwards[1], Jonas Paludo[1], Stephen M. Ansell[1], Thomas E. Witzig[1] and Grzegorz S. Nowakowski[1]

**Abstract**

Primary gastrointestinal (GI) mantle cell lymphoma (MCL) is rare and the optimal management is unknown. We reviewed 800 newly diagnosed MCL cases and found 22 primary (2.8%) and 79 (9.9%) secondary GI MCL cases. Age, sex, and performance status were similar between primary and secondary cases. Secondary cases had more elevations in lactate dehydrogenase (28% vs 0%, $P = 0.03$) and a trend for a higher MCL international prognostic index ($P = 0.07$). Observation or local therapy was more common for primary GI MCL (29% vs 8%, $P < 0.01$), and autologous stem-cell transplant was more common for secondary GI MCL (35% vs 14%, $P < 0.05$). The median follow-up was 85 months. Primary and secondary GI MCL had similar 5-year progression-free survival (PFS) (30% vs 28%, $P = 0.59$) and overall survival (OS) (65% vs 66%, $P = 0.83$). The extent of GI involvement in primary GI MCL affected treatment selection but not outcome, with a 5-year PFS of 43% vs 14% vs 31% ($P = 0.48$) and OS of 57% vs 71% vs 69% ($P = 0.54$) in cases with single lesion vs multiple lesions in 1 organ vs multiple lesions in ≥2 organs. Less aggressive frontline treatment for primary GI MCL is reasonable. It is unknown whether more aggressive treatment can result in improved outcomes.

# Clinical characteristics and outcomes of primary versus secondary gastrointestinal mantle cell lymphoma

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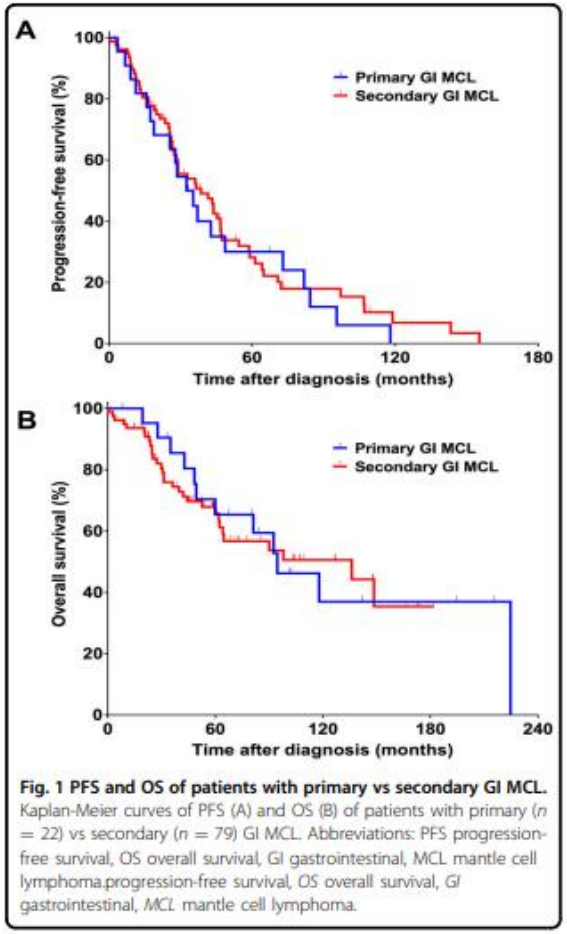



**Fig. 1 PFS and OS of patients with primary vs secondary GI MCL.** Kaplan-Meier curves of PFS (A) and OS (B) of patients with primary ($n$ = 22) vs secondary ($n$ = 79) GI MCL. Abbreviations: PFS progression-free survival, OS overall survival, GI gastrointestinal, MCL mantle cell lymphoma.progression-free survival, *OS* overall survival, *GI* gastrointestinal, *MCL* mantle cell lymphoma.

# Primary Gastrointestinal Small Lymphocytic Lymphoma (B-CLL)

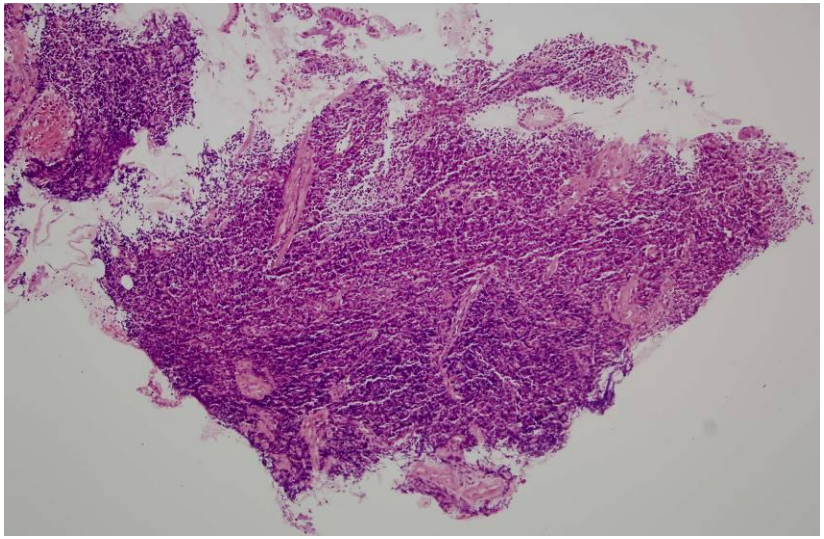
Isolated SLL is very rare

Secondary involvement of the GIT is probably common although no accurate data is available

Prolla et al 1964

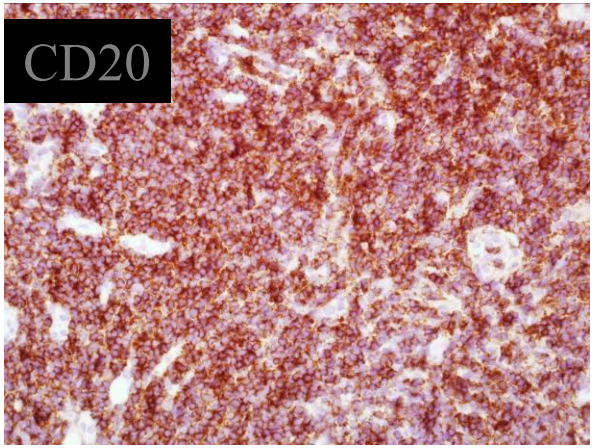
Autopsy data – 3/18 cases with *gross* involvement of GIT

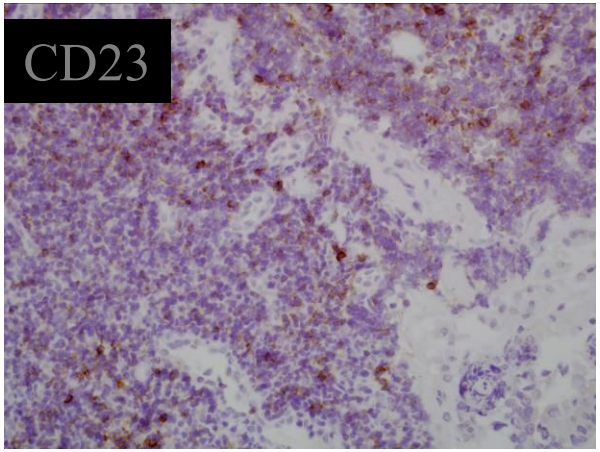
# B chronic lymphocytic leukaemia

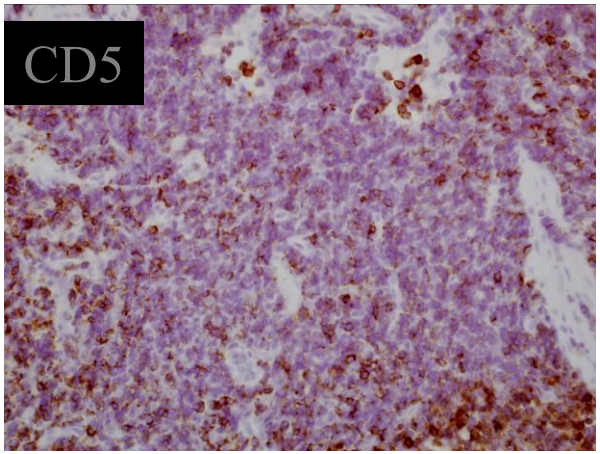


CD20 +
CD5 +
CD23 +
bcl-2 +

Cyclin D1 -
CD10 -
bcl-6 -



# Primary Gastrointestinal Diffuse Large B Cell Lymphoma

Most common GI Lymphoma

- 50-60% gastric lymphoma
- 20-30% SI

Age  Usually >60yrs

# PRIMARY GASTRIC DLBCL

M > F

Median age 50-60yrs

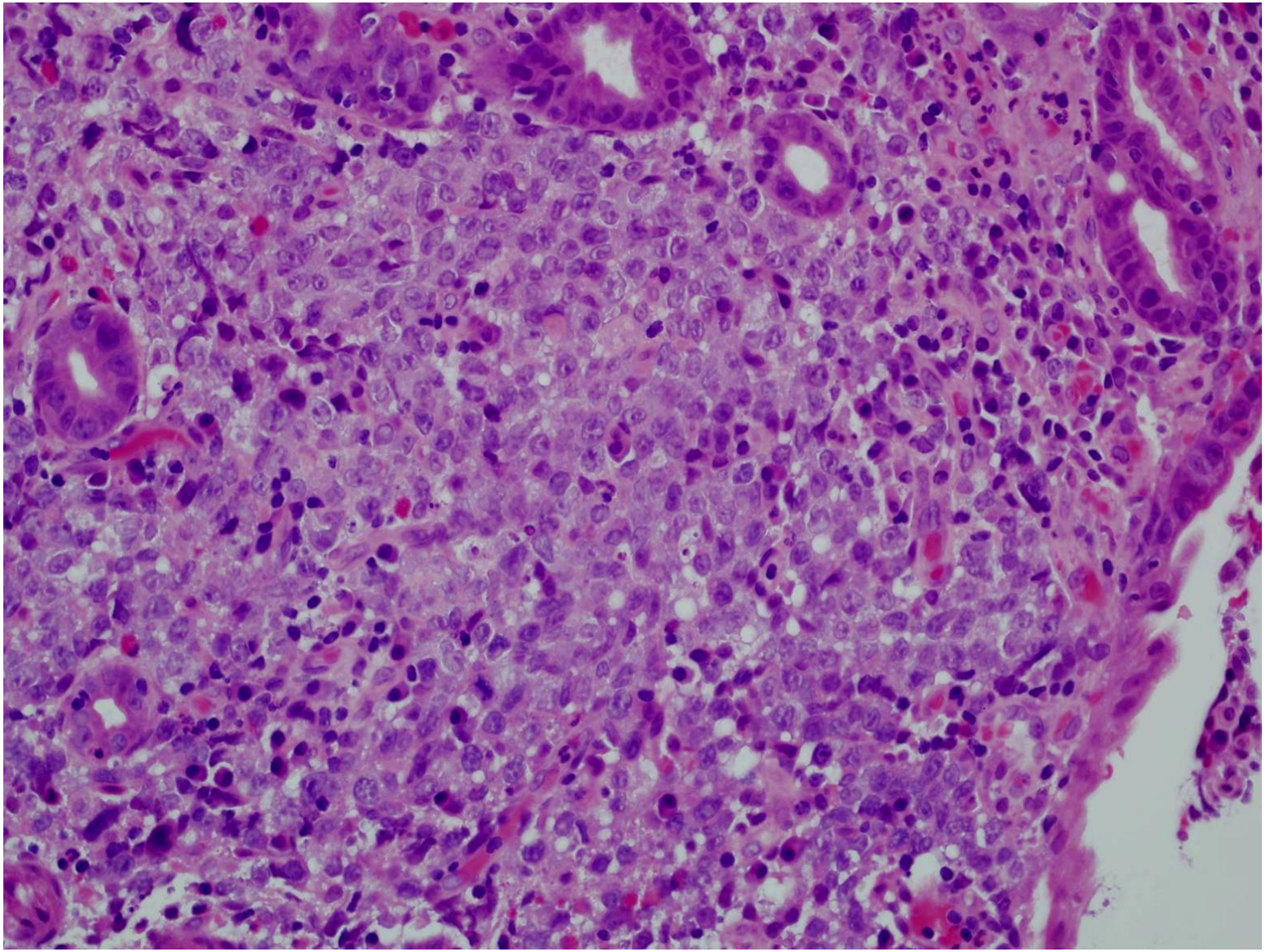
Symptoms

| | |
|---|---|
| Epigastric pain | 70% |
| Dyspepsia | 30% |
| Weight loss | 40% |

Immunophenotype

| | |
|---|---|
| GC-Type | CD10+ bcl-6+ bcl-2+(/-) |
| Transformed MALT | CD10- bcl-6-/+ bcl-2+/- |

# DIFFUSE LARGE B CELL LYMPHOMA



# Primary Gastrointestinal Diffuse Large B Cell Lymphoma

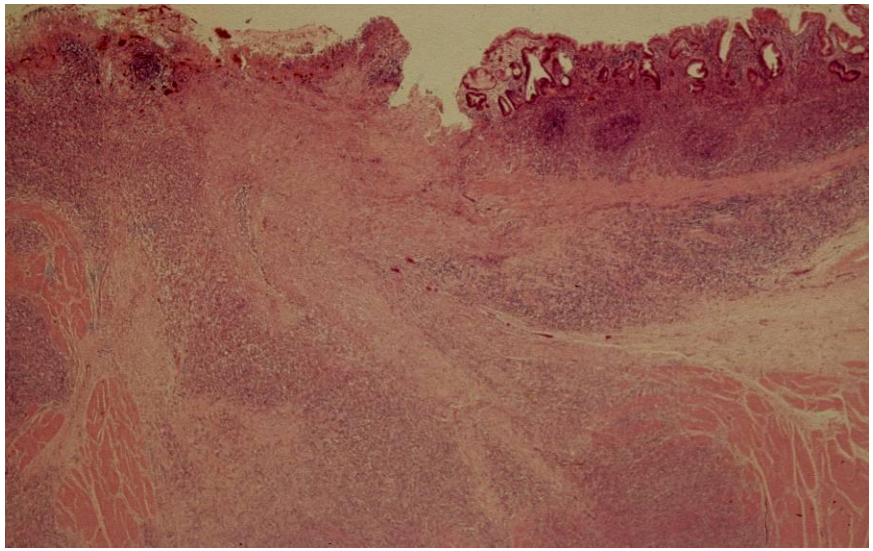
Morphology

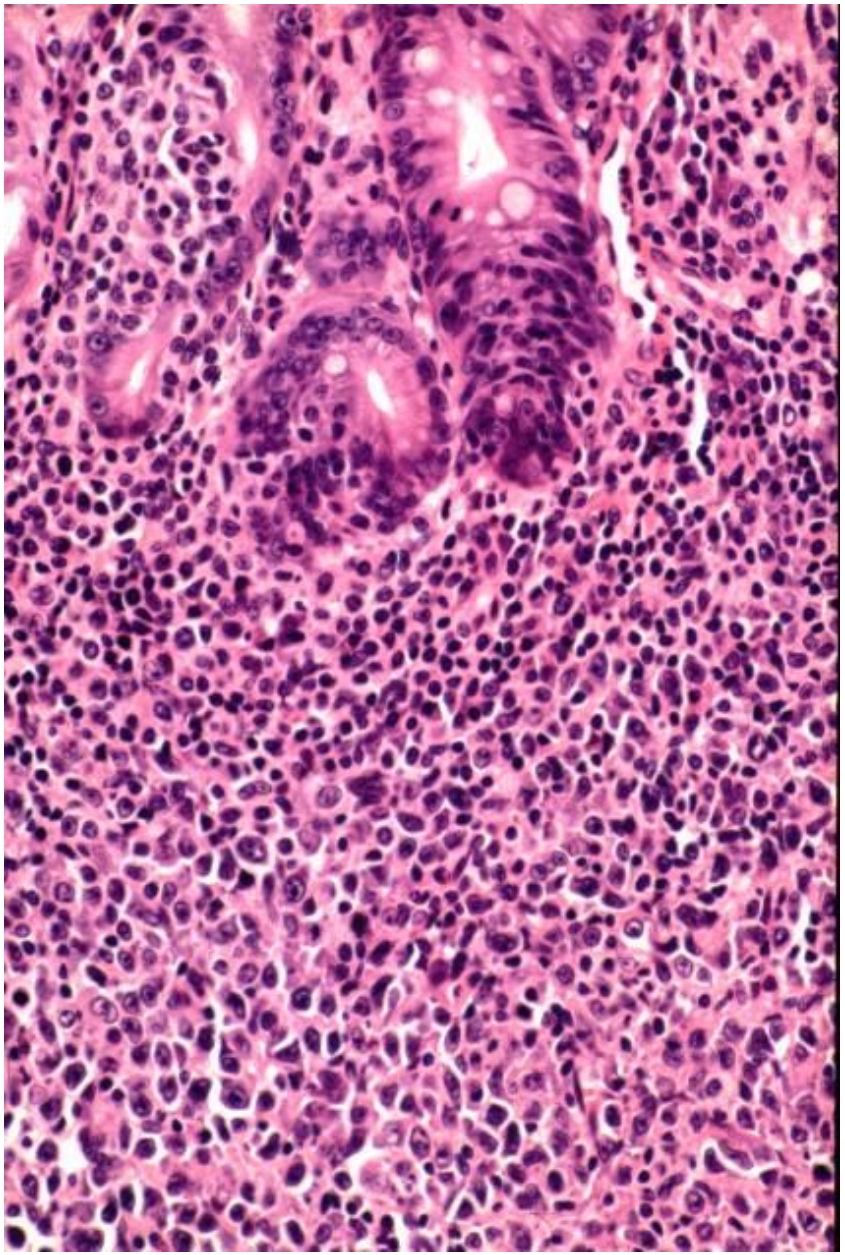
- Most Centroblastic

Immunoblastic

Anaplastic

T cell rich B cell lymphoma is rare

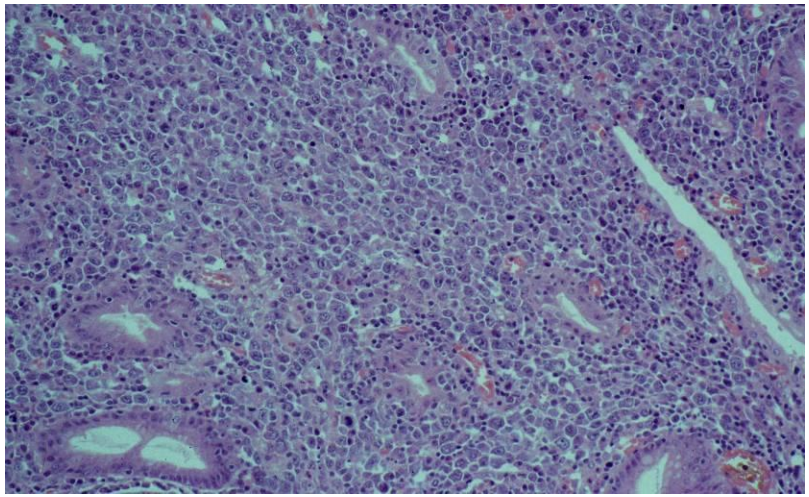


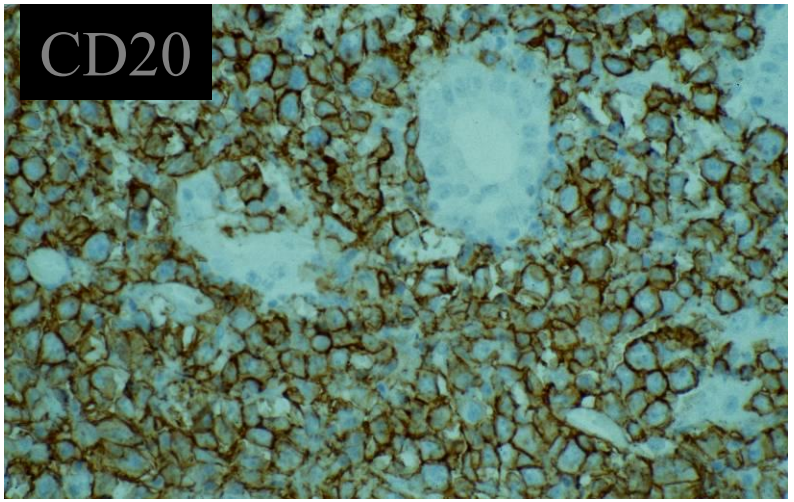


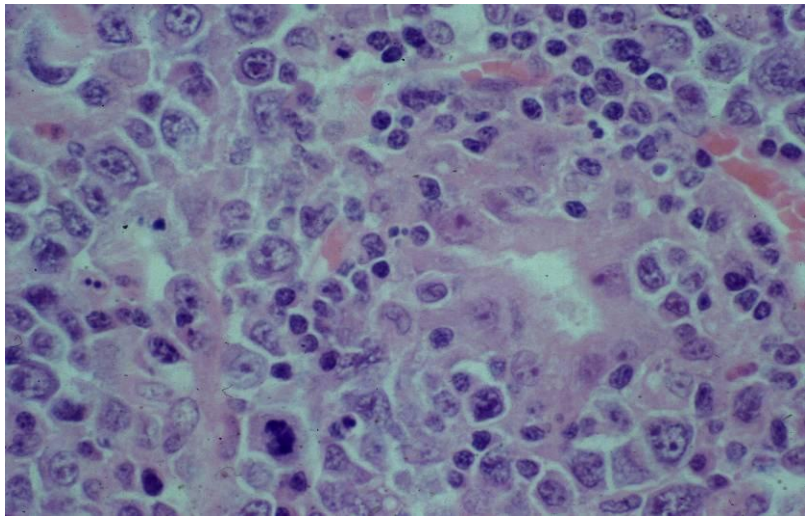
## Gastric lymphoma

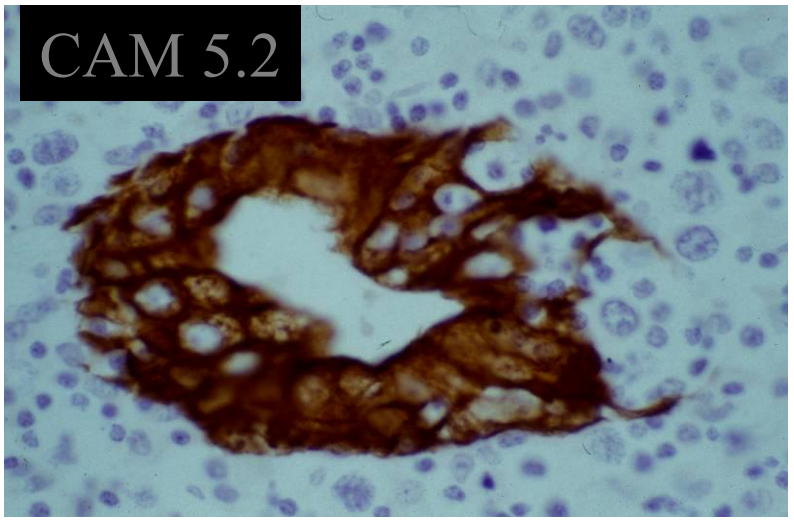
Diffuse large B cell lymphoma with residual MALT lymphoma

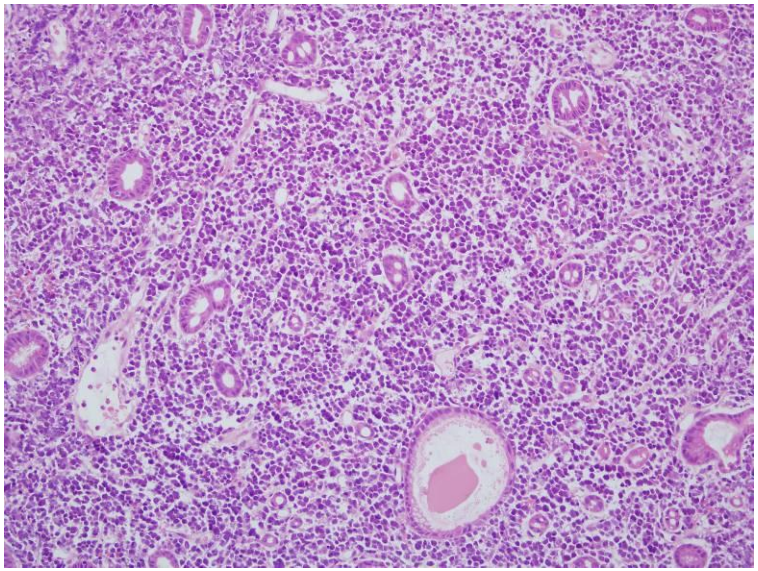
Diffuse large B cell lymphoma
Infiltration of glandular epithelium

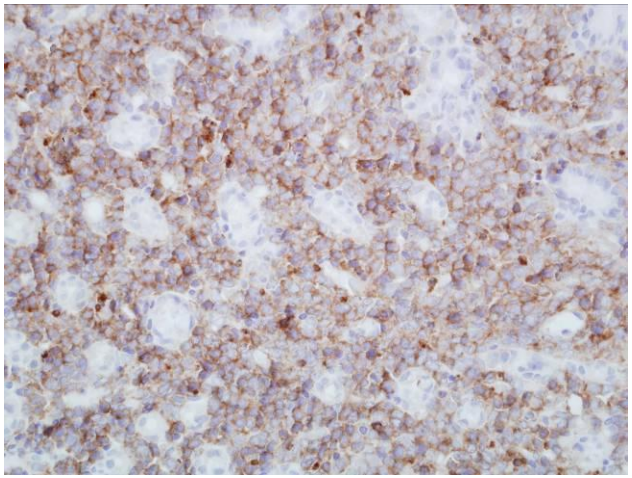


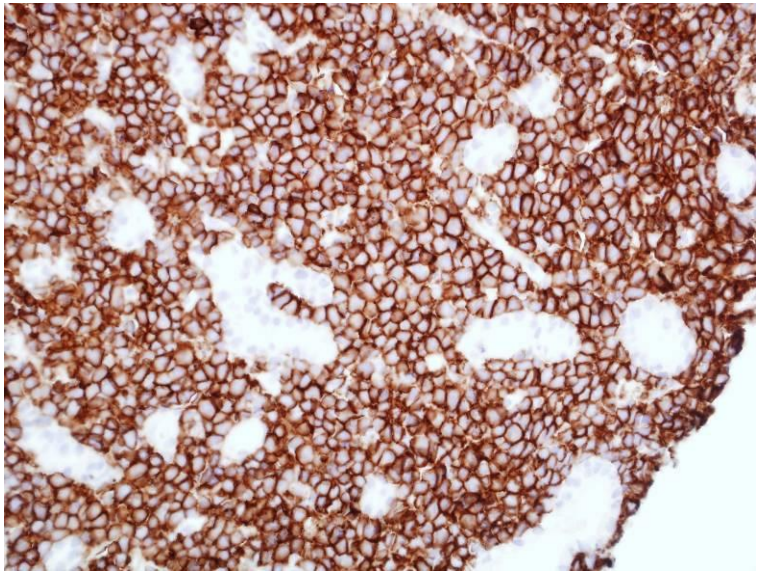


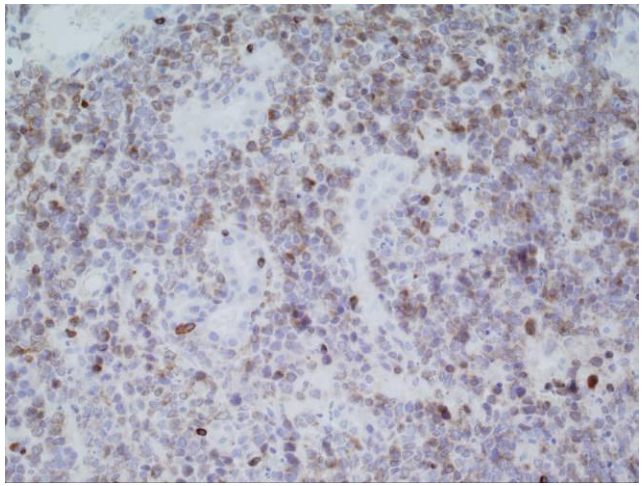



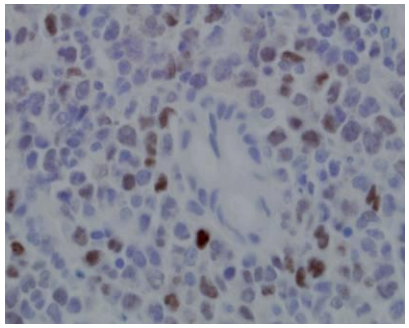












CD20 +  bcl-2 +
CD10 +  bcl-6 +
p53 +/-

Germinal centre phenotype

Diffuse large B cell lymphoma

# Primary Gastrointestinal Diffuse Large B Cell Lymphoma

Genetics

Clonal re-arrangement of BCL6

48% GI

17% Nodal

# H Pylori eradication in gastric DLBCL

**Morgner et al 2001**

- 8 patients (26-85yrs)
  - DLBCL = 6;  DLBCL & MALT = 2
  - Stage I = 6;  Stage II = 2
- CR 7/8 patients;  PR 1/8

**Chen et al 2001**

- 16 patients (21-83yrs)
  - DLBCL;  Stage I
- CR 10/16

# Regression of early stage gastric DLBCL in combination with MALT lymphoma following Hp eradication
# Chen et al 2005

- 24 patients  All Hp positive
- Stage IE

A Confluent clusters/sheets of large cells with predominantly LG infiltrate (13 cases)

B Predominantly high grade lymphoma with only a small residual low grade component (11 cases)

# Regression of early stage gastric DLBCL in combination with MALT lymphoma following Hp eradication
# Chen et al 2005

| | Hp+ | Erad | CR |
|---|---|---|---|
| A | 13 | 11 | 7 |
| B | 11 | 11 | 7 |

Depth of wall involvement known in 17 pts

| | |
|---|---|
| 7 Submucosa and above | CR in 7/7 |
| 10 Muscularis propria and beyond | CR in 3/10 |

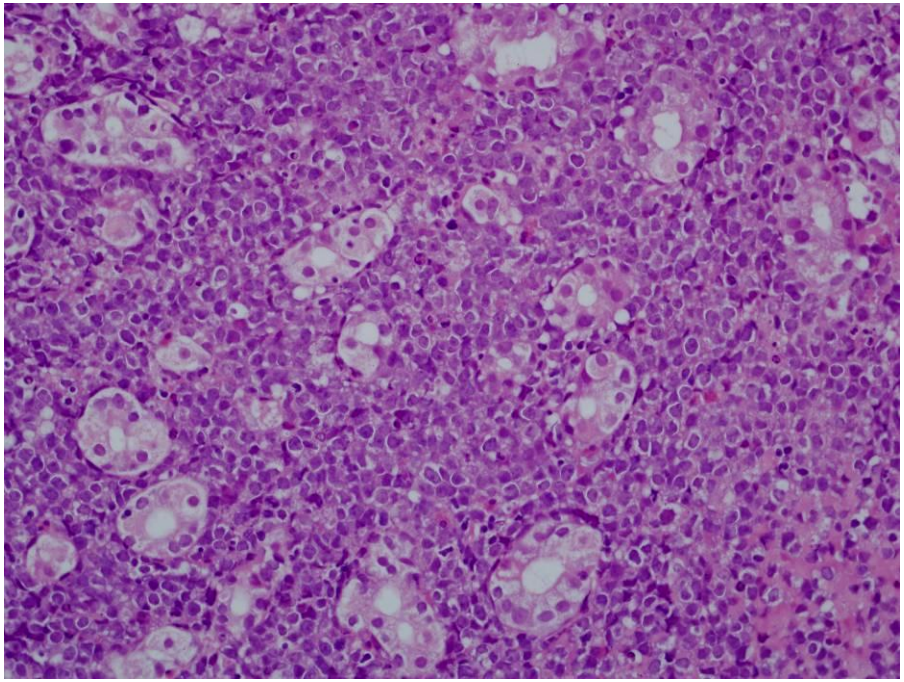
# Primary Gastrointestinal Burkitt Lymphoma

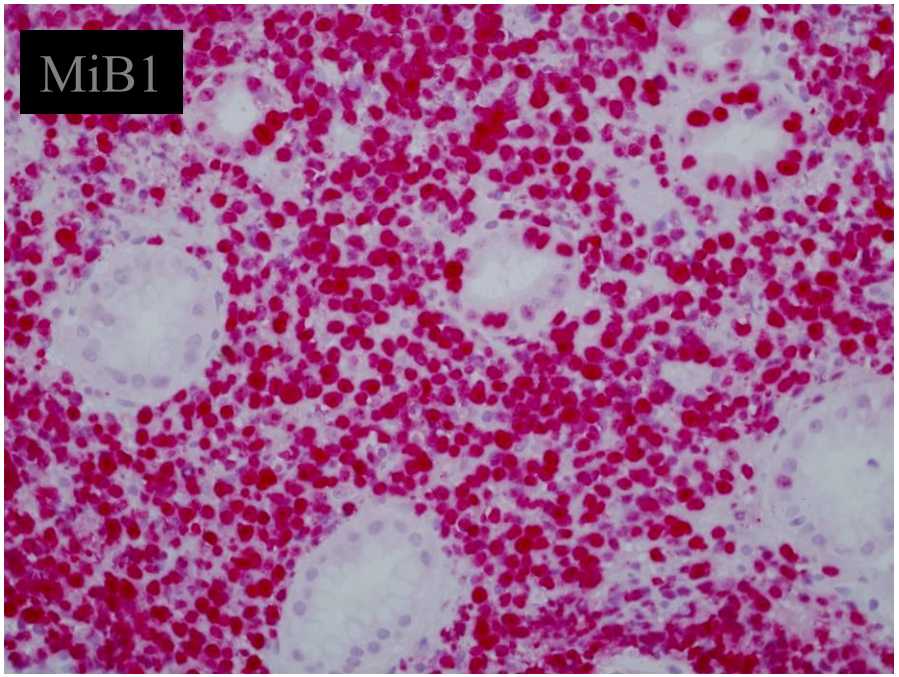
Incidence

- Middle East
  - 46.5% of all childhood NHL of which 60% arise in the intestine
- Western
  - Childhood GI NHL rare but BL is commonest
  - Increasing incidence in HIV+ population

# Burkitt lymphoma

| | |
|---|---|
| CD20 + | CD5 - |
| CD10 + | CD23- |
| bcl-6 + | Cyclin D1 - |
| MiB1 100% | bcl-2 - |





# Thank you