Hafiz Anas Yahya, MD
Hematopathology Fellow
Fox Chase Cancer Center
Philadelphia, PA

FOX CHASE CANCER CENTER
TEMPLE HEALTH

CASE 1

74-year-old Male

Clinical:

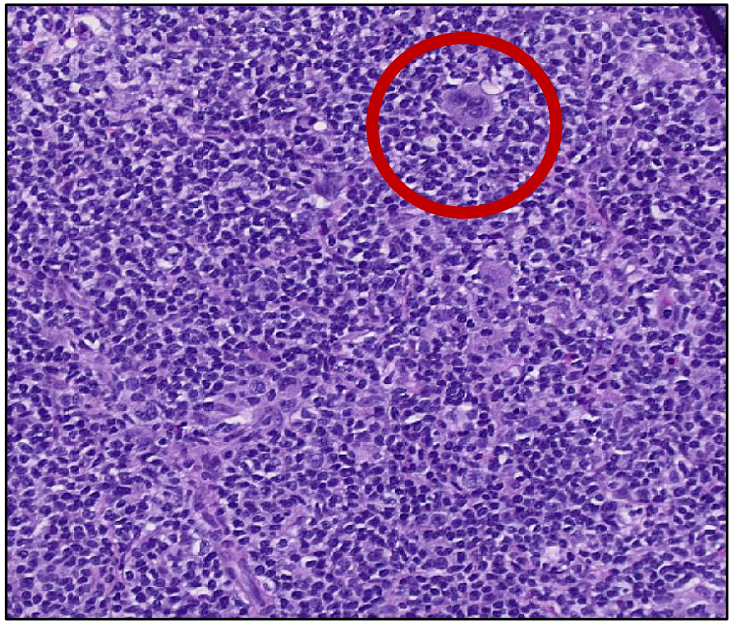
- H/o CLL diagnosed in 2017; treated with bendamustine-rituximab (chemo + targeted monoclonal antibody – anti CD20) and ibrutinib (BTK inhibitor).
- Presented again in 2025 with right axillary fullness.

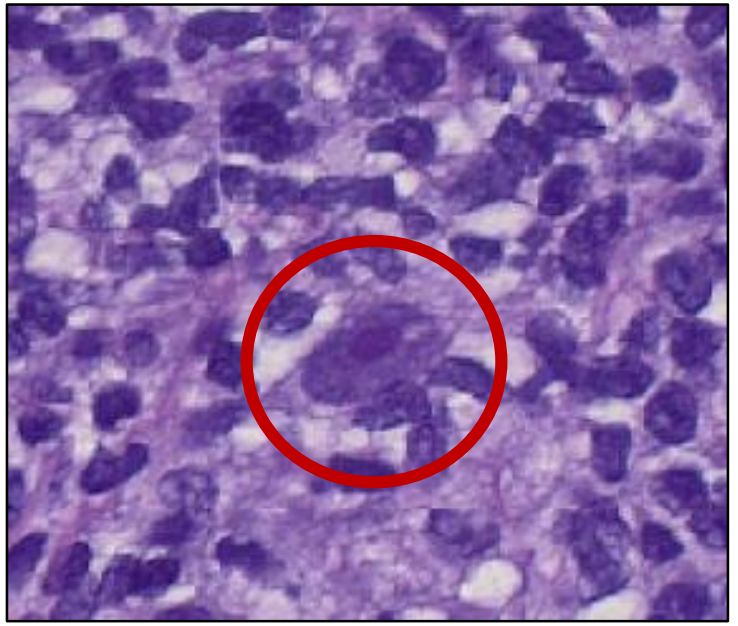
PET CT:

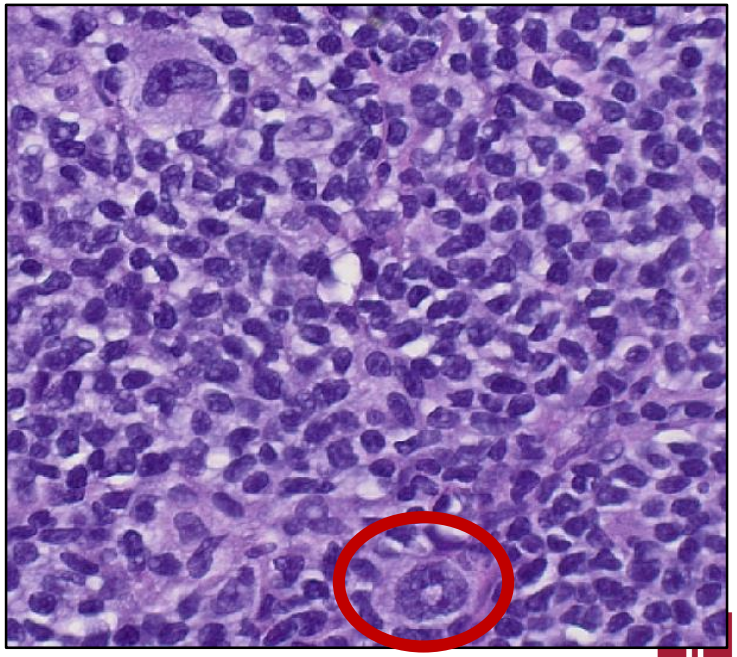
Bulky mediastinal and >7 cm right axillary lymphadenopathy (SUV max 17).

Procedure:

Ultrasound-guided core biopsy of the right axillary lymph node performed.

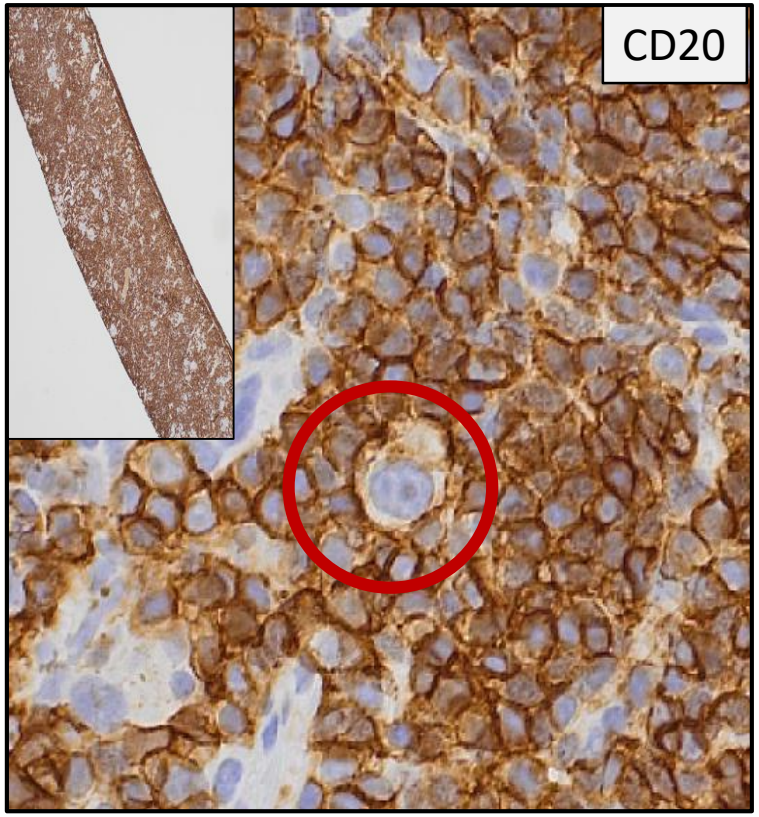


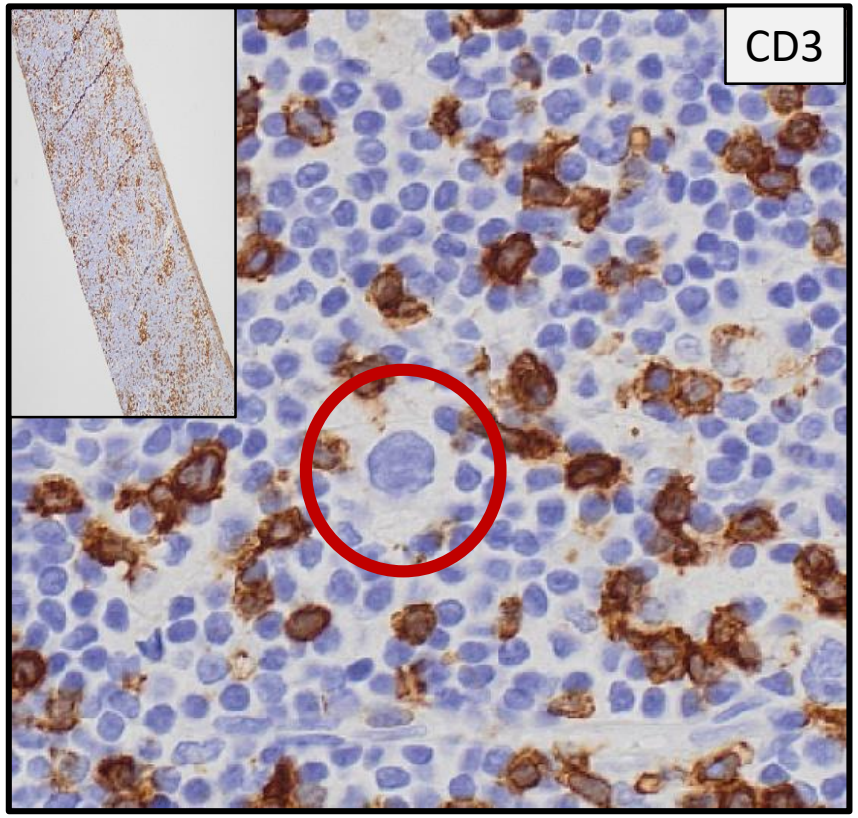


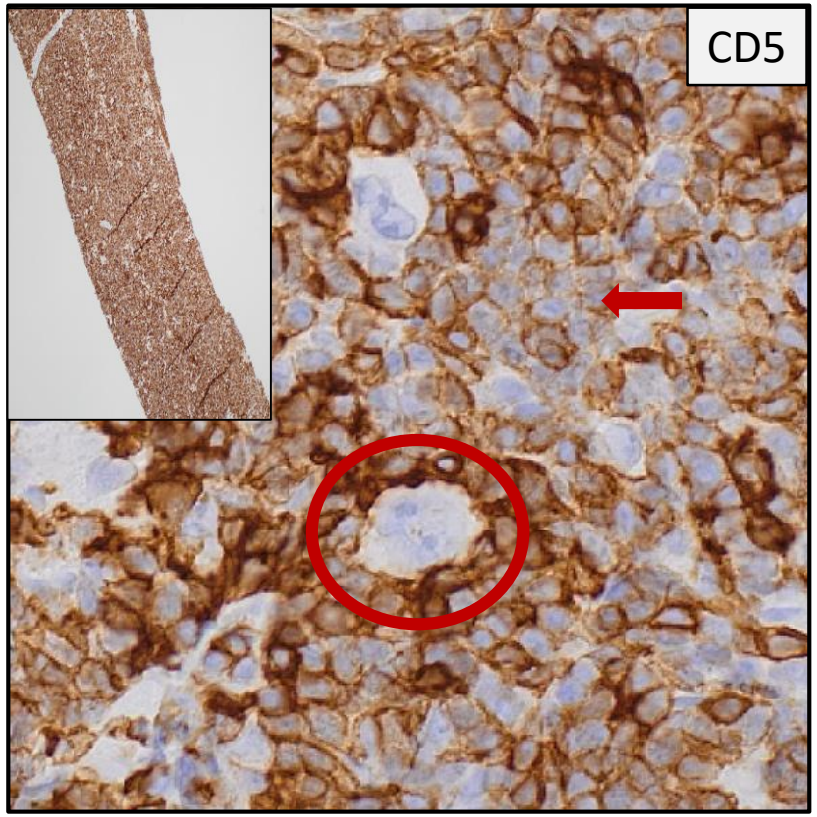


FOX CHASE
CANCER CENTER
TEMPLE HEALTH

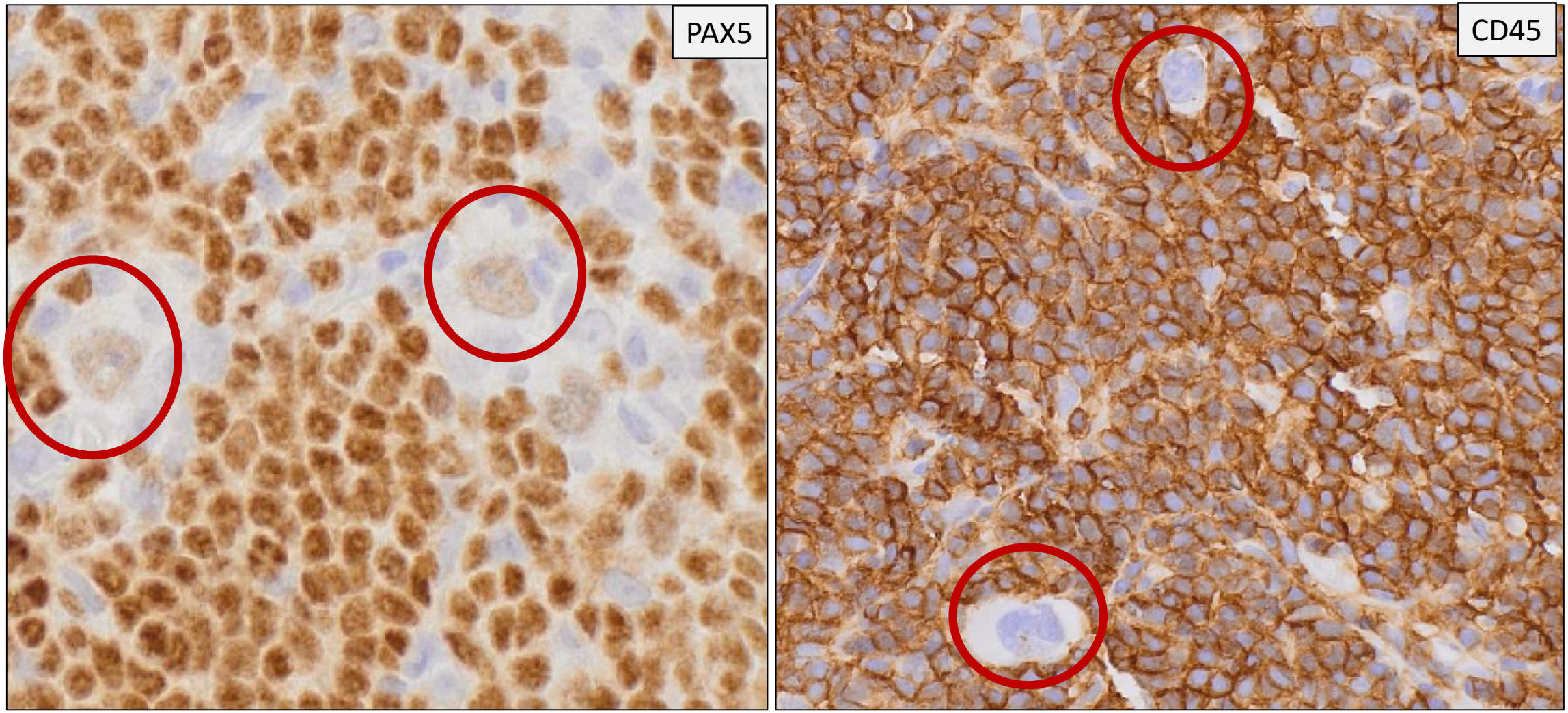
IHCs



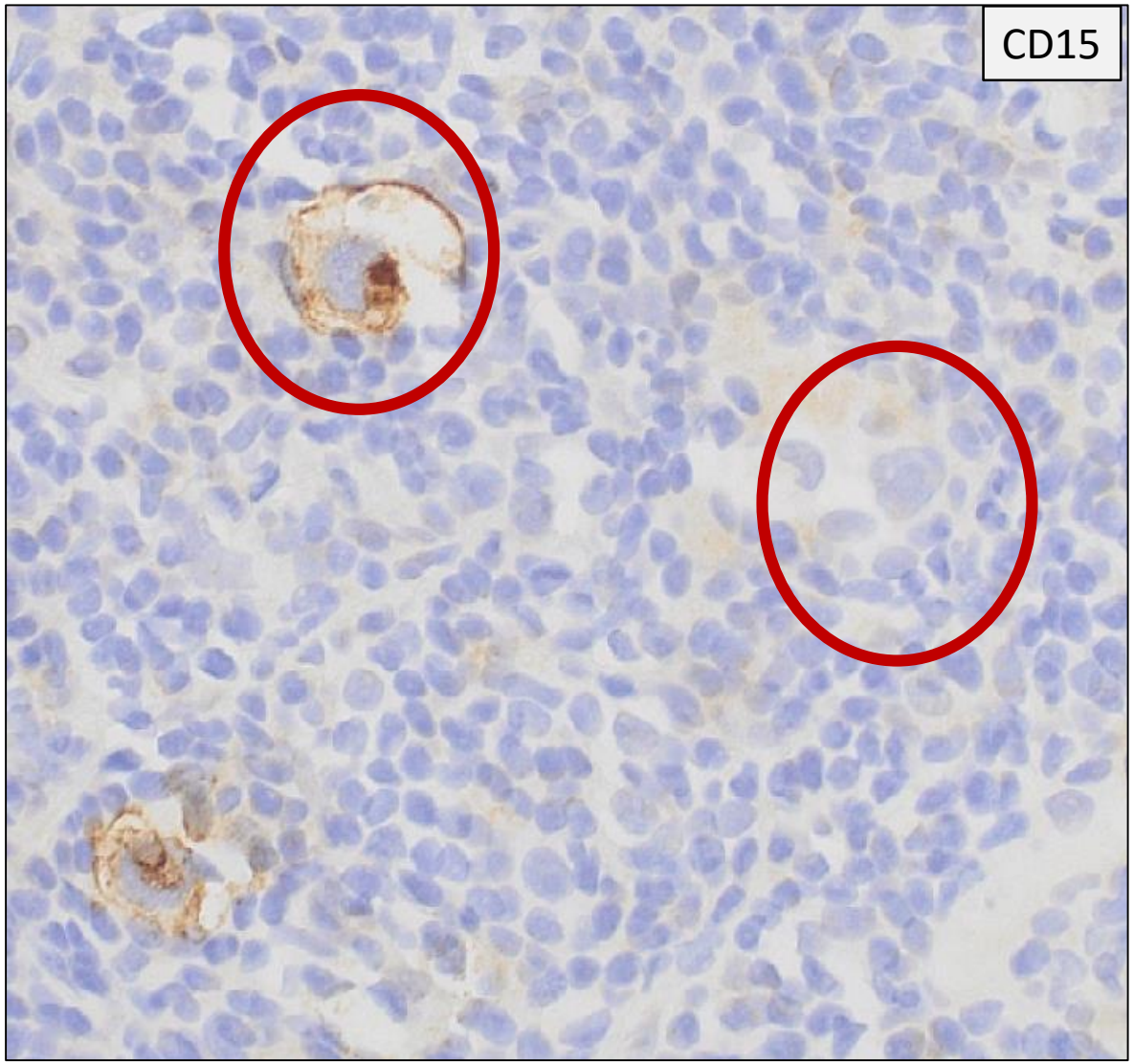


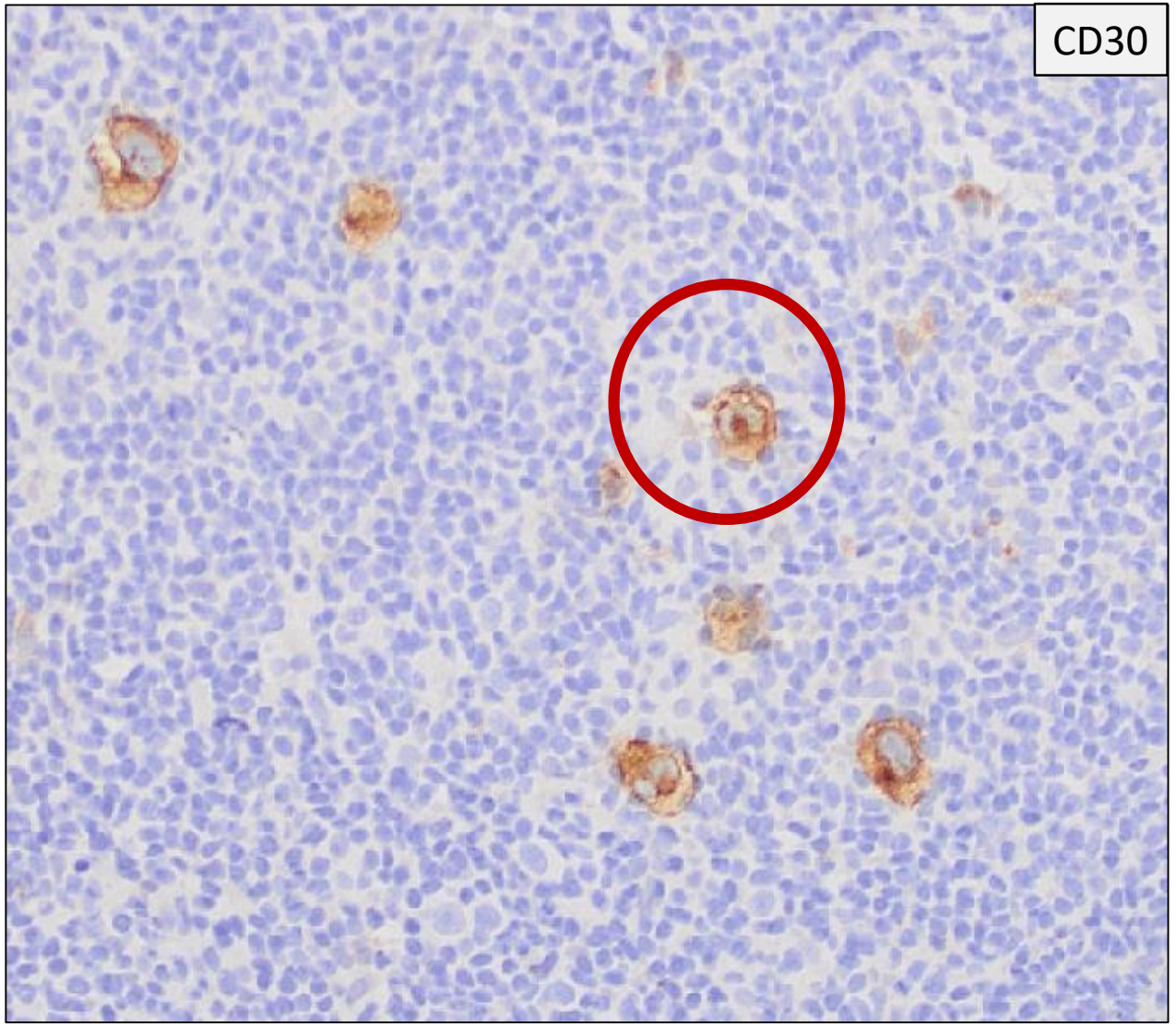


IHCs



IHCs





Additional IHCs:

Small neoplastic cells:

Positive for CD23 and BCL2.

Negative for CD10 and Cyclin D1.

Large neoplastic cells:

Positive for c-MYC, Ki67 and MUM1.

Negative for CD10.

EBER ISH: Negative

Ancillary studies:

- **Flow cytometry:** Lambda light chain restricted B-cell population, positive for CD19, CD20, CD5 and CD23 while negative for CD10.
- **FISH:** Positive for 17p (p53) deletion and trisomy 12.

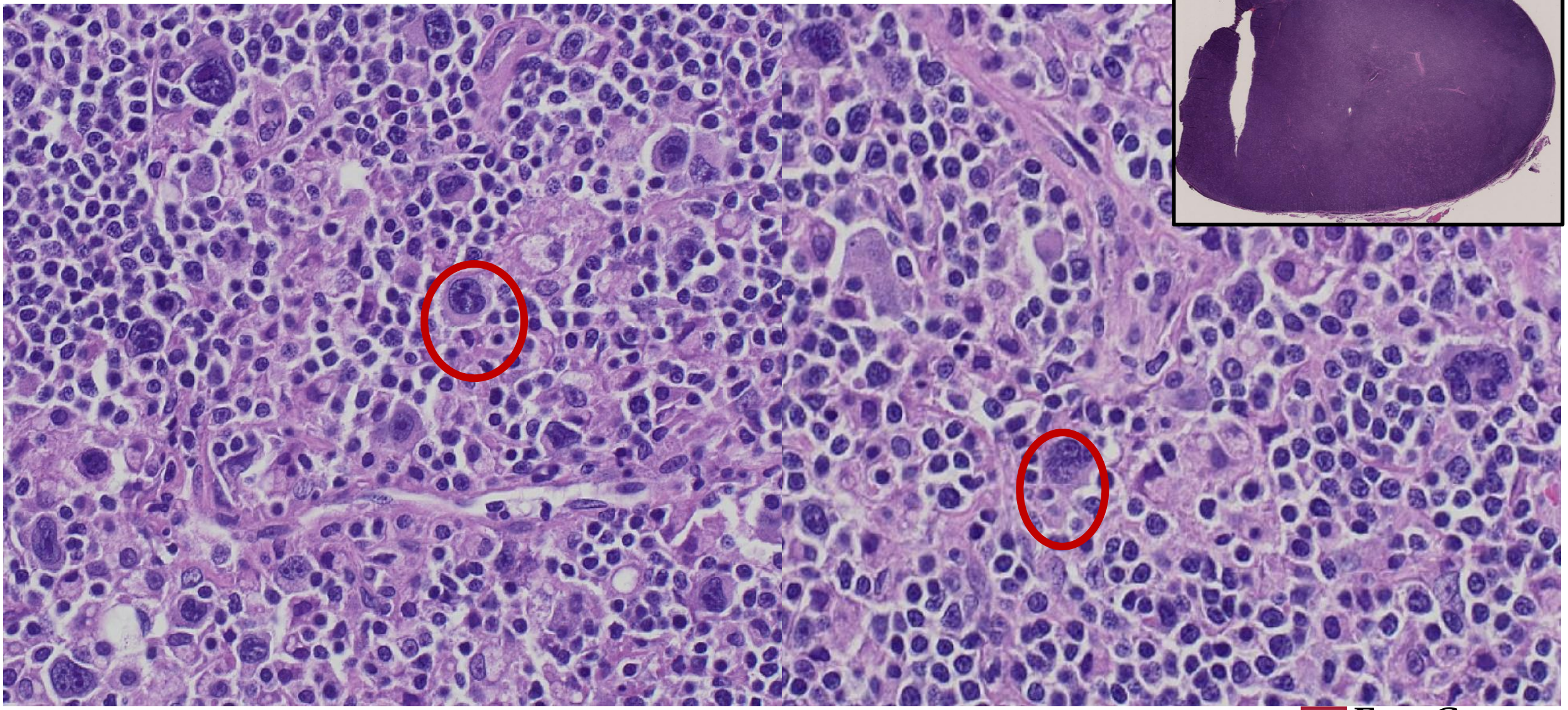
Summary:

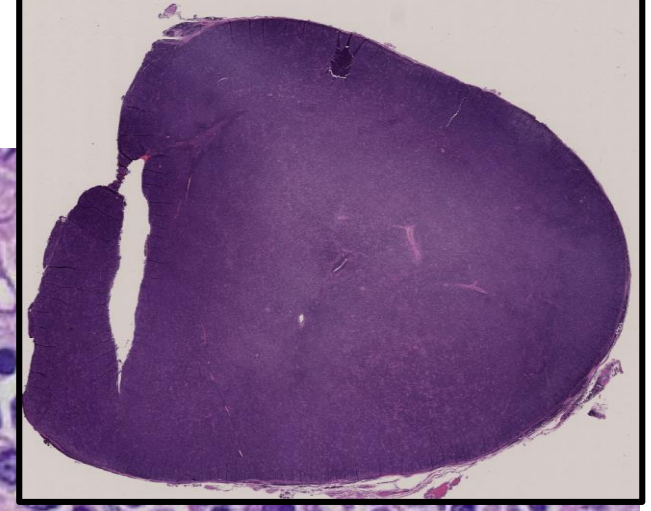
Category	Results
Morphology	Scattered HRS like cells in a background of small neoplastic B cells
IHCs	HRS-like cells: PAX5 (dim)+, CD15 (subset)+, CD30+, MUM1+. Ki67+, CD20-, CD45- Small neoplastic B cells: CD20+, CD5 (dim)+, CD23+, BCL2+, CD10-
Flow cytometry	Lambda light chain restricted B-cell population, positive for CD19, CD20, CD5 and CD23 while negative for CD10
FISH	Positive for 17p (p53) deletion and trisomy 12.
IgH clonality testing	Positive

DIAGNOSIS:

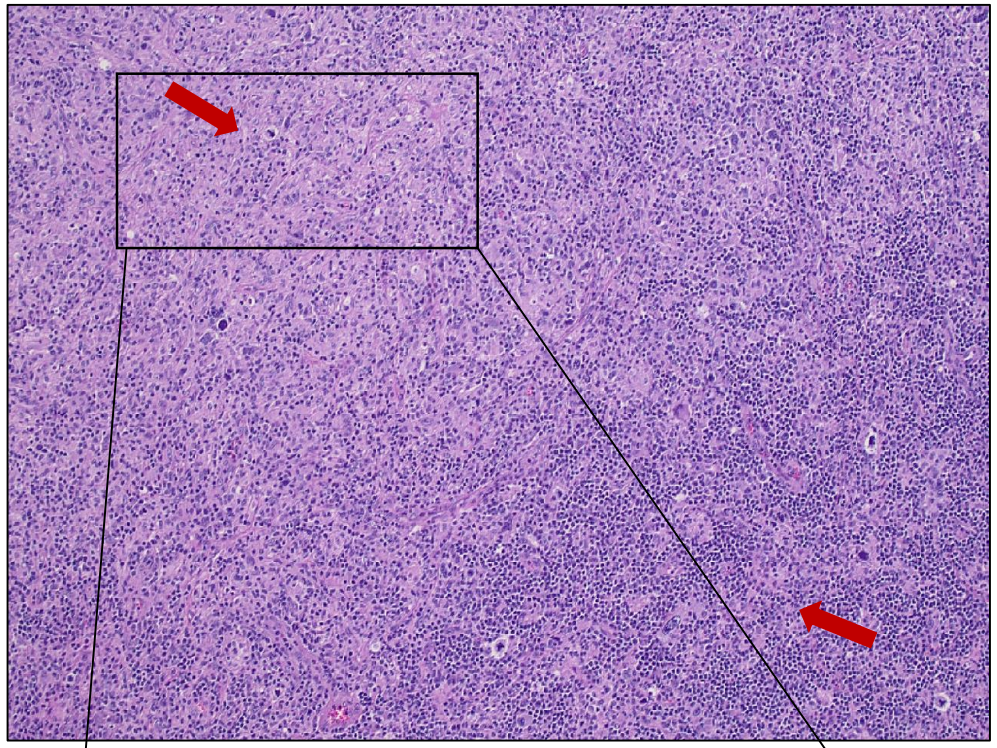
Chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL) with Hodgkin/Reed–Sternberg like cells (CLL-HRS) and TP53 deletion.

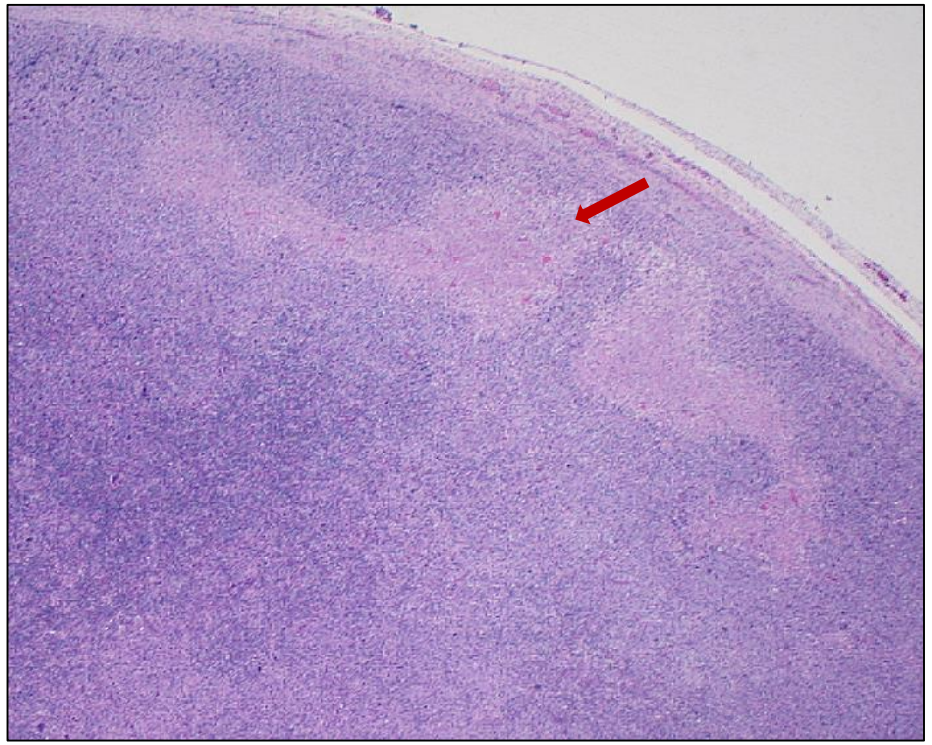
Follow up (after 2 weeks):

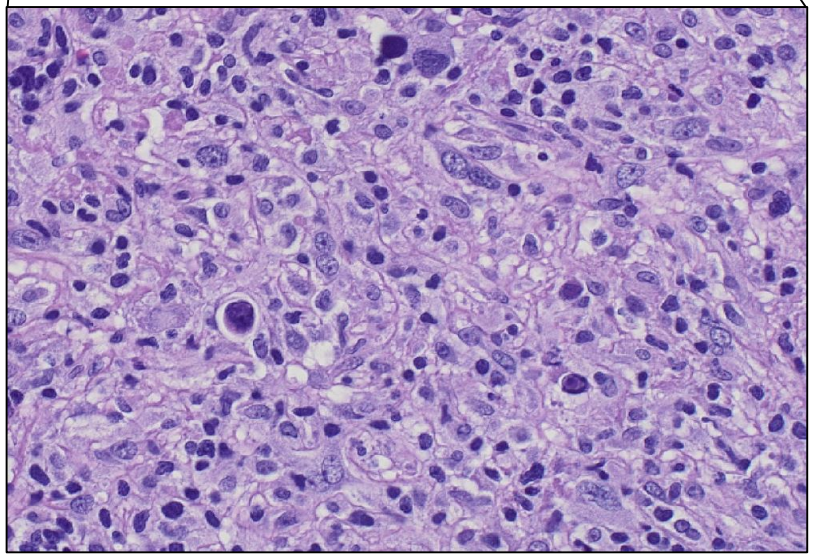




FOX CHASE CANCER CENTER
TEMPLE HEALTH

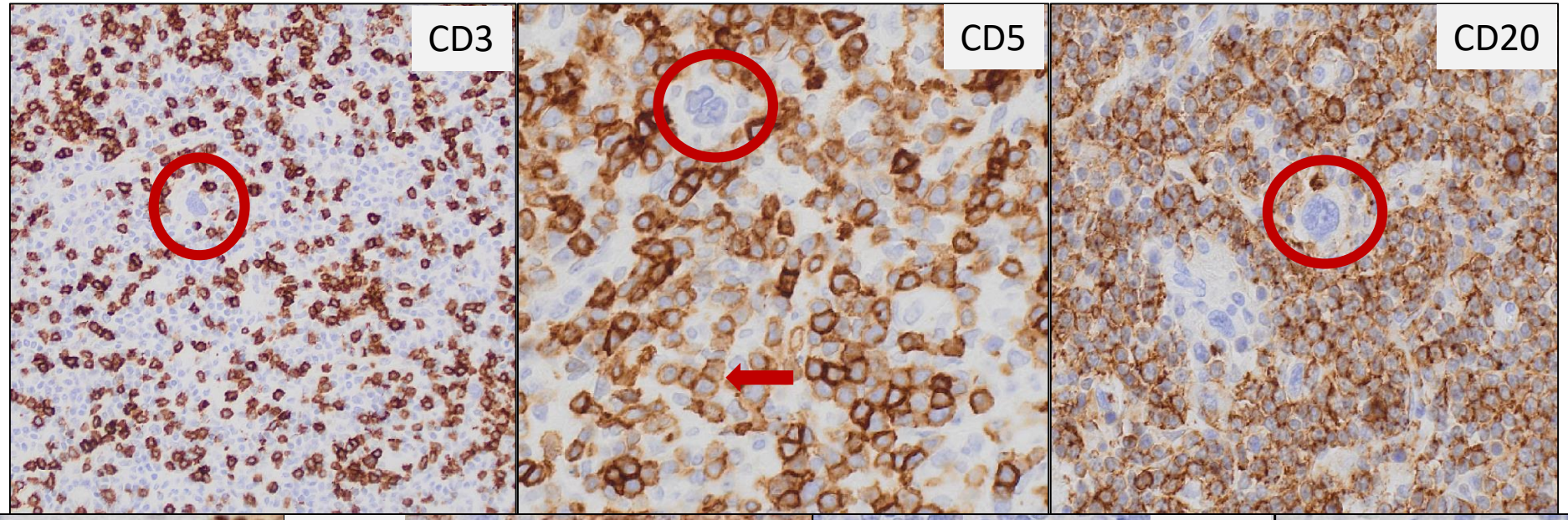


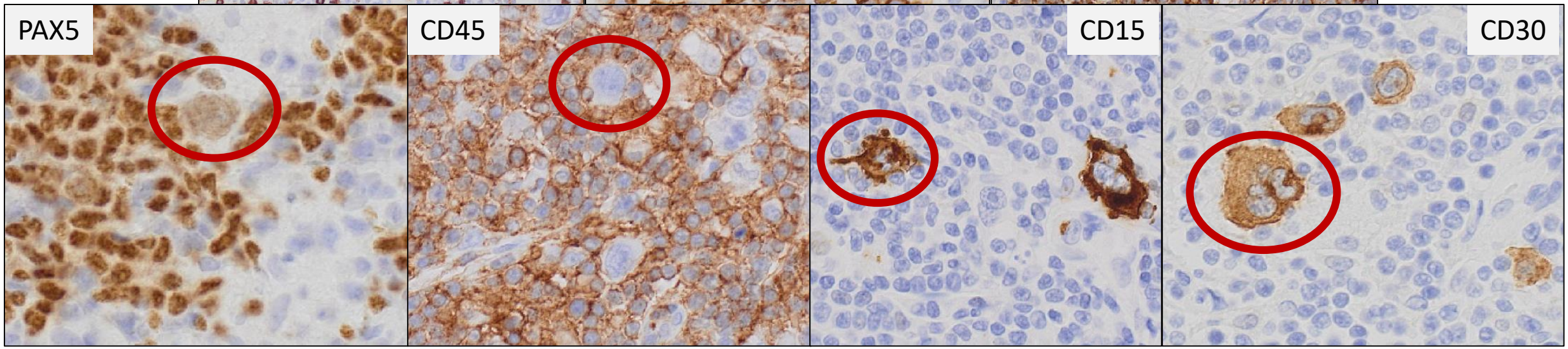




FOX CHASE
CANCER CENTER
TEMPLE HEALTH

IHCs





FOX CHASE CANCER CENTER
TEMPLE HEALTH

Additional IHCs:

Atypical small neoplastic cells:

Positive for CD23.

HRS like cells:

Positive for Ki67.

EBER ISH: Negative

Ancillary Studies:

Flow cytometry: Lambda light chain restricted B-cell population that is positive for CD19, CD20, CD5 and CD23 while negative for CD10.

NGS: Detected following variants:

- TP53 I251Sfx*94, splice site c.375+5G>T
- TP53 F54Lfs*62, splice site c.672+2T>C
- BTK C481S
- PLCG2 L845F

Summary:

Category	Results
Morphology	Scattered HRS like cells in a background of small neoplastic B cells. Focal area of necrosis seen. Focal abundant histiocytic background.
IHCs	HRS-like cells: PAX5 (dim)+, CD15 (subset)+, CD30+, Ki67+, CD20-, CD45- Small neoplastic B cells: CD20+, CD5 (dim)+, CD23+
Flow cytometry	Lambda light chain restricted B-cell population, positive for CD19, CD20, CD5 and CD23 while negative for CD10
NGS	Detected following variants: • TP53 I251Sfx*94, splice site c.375+5G>T • TP53 F54Lfs*62, splice site c.672+2T>C • BTK C481S • PLCG2 L845F

DIAGNOSIS:

Chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL) with Hodgkin/Reed–Sternberg like cells (CLL-HRS) and TP53 deletion.

Question?

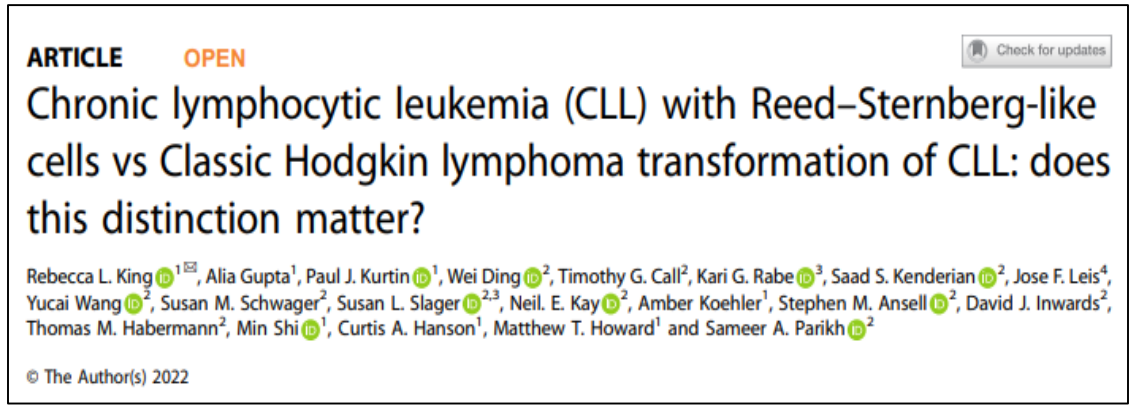
Is this CLL/SLL with Hodgkin lymphoma-type Richter Transformation?

As there was a prevailing picture of CLL/SLL with HRS like cells, we called it CLL/SLL with Hodgkin/Reed–Sternberg like cells.

But, it could represent be an early Hodgkin lymphoma-type Richter Transformation as well!

Does the distinction between CLL/SLL with HRS-like cells and CLL/SLL with Hodgkin lymphoma-type Richter Transformation matter?

Literature Review

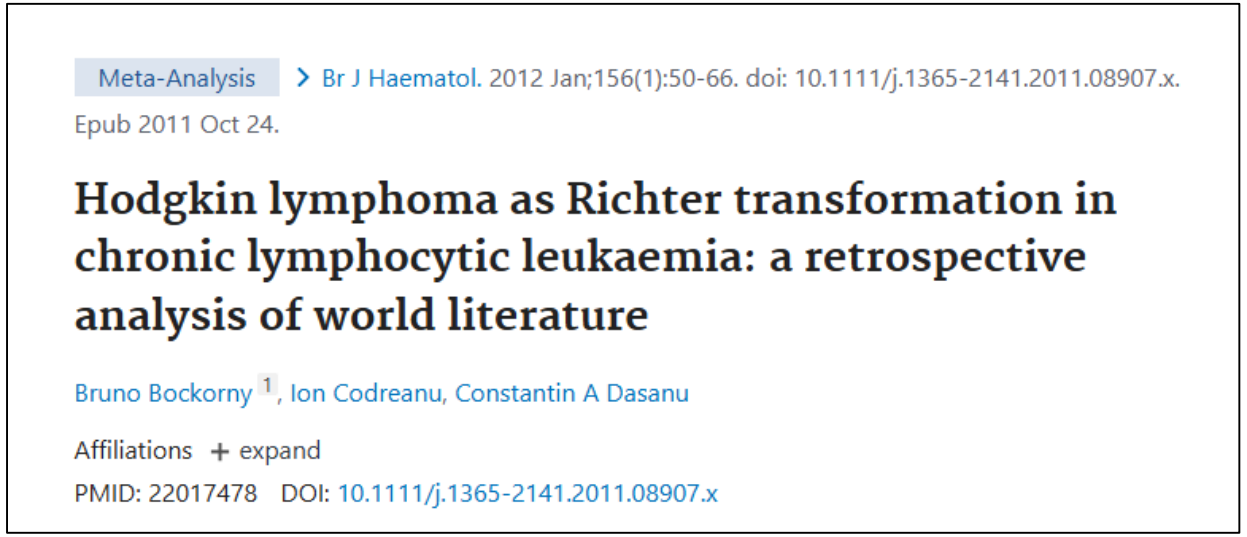


ARTICLE OPEN

Check for updates

Chronic lymphocytic leukemia (CLL) with Reed–Sternberg-like cells vs Classic Hodgkin lymphoma transformation of CLL: does this distinction matter?

Rebecca L. King[1✉], Alia Gupta[1], Paul J. Kurtin[1], Wei Ding[2], Timothy G. Call[2], Kari G. Rabe[3], Saad S. Kenderian[2], Jose F. Leis[4], Yucai Wang[2], Susan M. Schwager[2], Susan L. Slager[2,3], Neil. E. Kay[2], Amber Koehler[1], Stephen M. Ansell[2], David J. Inwards[2], Thomas M. Habermann[2], Min Shi[1], Curtis A. Hanson[1], Matthew T. Howard[1] and Sameer A. Parikh[2]



Meta-Analysis > Br J Haematol. 2012 Jan;156(1):50-66. doi: 10.1111/j.1365-2141.2011.08907.x. Epub 2011 Oct 24.

Hodgkin lymphoma as Richter transformation in chronic lymphocytic leukaemia: a retrospective analysis of world literature

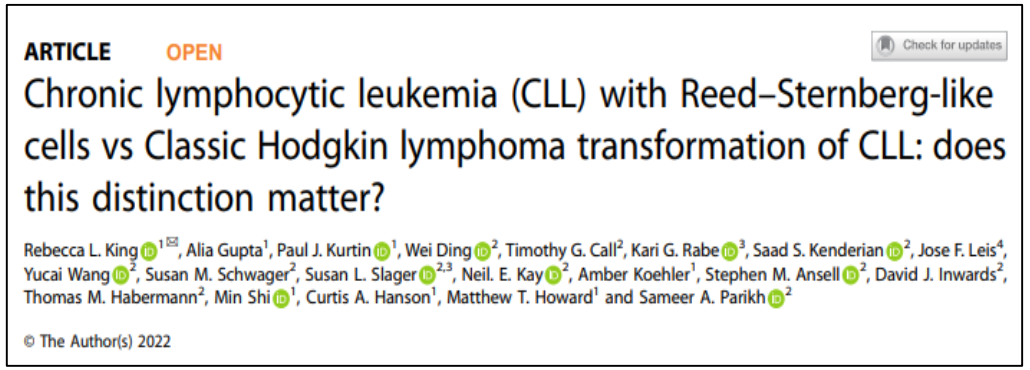
Bruno Bockorny [1], Ion Codreanu, Constantin A Dasanu

Affiliations + expand

PMID: 22017478 DOI: 10.1111/j.1365-2141.2011.08907.x

Progression of chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL) to classic Hodgkin lymphoma (CHL) as a form of Richter transformation is an uncommon but well-documented event (<1%).

Literature Review

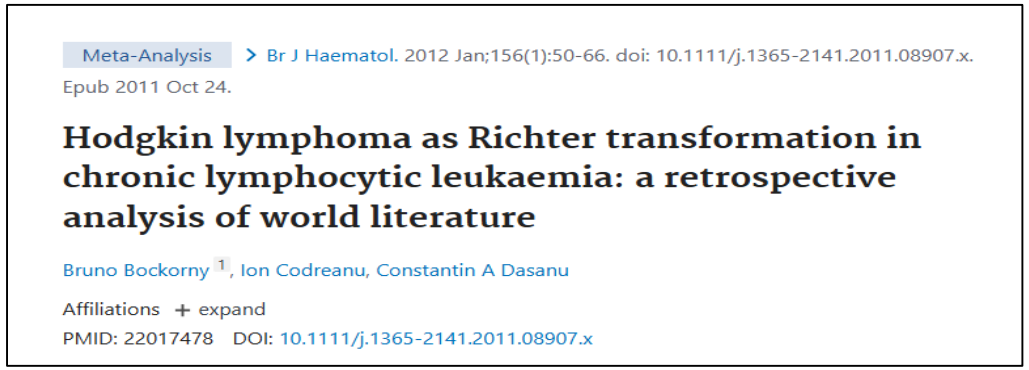


ARTICLE OPEN

Check for updates

Chronic lymphocytic leukemia (CLL) with Reed–Sternberg-like cells vs Classic Hodgkin lymphoma transformation of CLL: does this distinction matter?

Rebecca L. King[1✉], Alia Gupta[1], Paul J. Kurtin[1], Wei Ding[2], Timothy G. Call[2], Kari G. Rabe[3], Saad S. Kenderian[2], Jose F. Leis[4], Yucai Wang[2], Susan M. Schwager[2], Susan L. Slager[2,3], Neil. E. Kay[2], Amber Koehler[1], Stephen M. Ansell[2], David J. Inwards[2], Thomas M. Habermann[2], Min Shi[1], Curtis A. Hanson[1], Matthew T. Howard[1] and Sameer A. Parikh[2]



Meta-Analysis > Br J Haematol. 2012 Jan;156(1):50-66. doi: 10.1111/j.1365-2141.2011.08907.x. Epub 2011 Oct 24.

Hodgkin lymphoma as Richter transformation in chronic lymphocytic leukaemia: a retrospective analysis of world literature

Bruno Bockorny [1], Ion Codreanu, Constantin A Dasanu

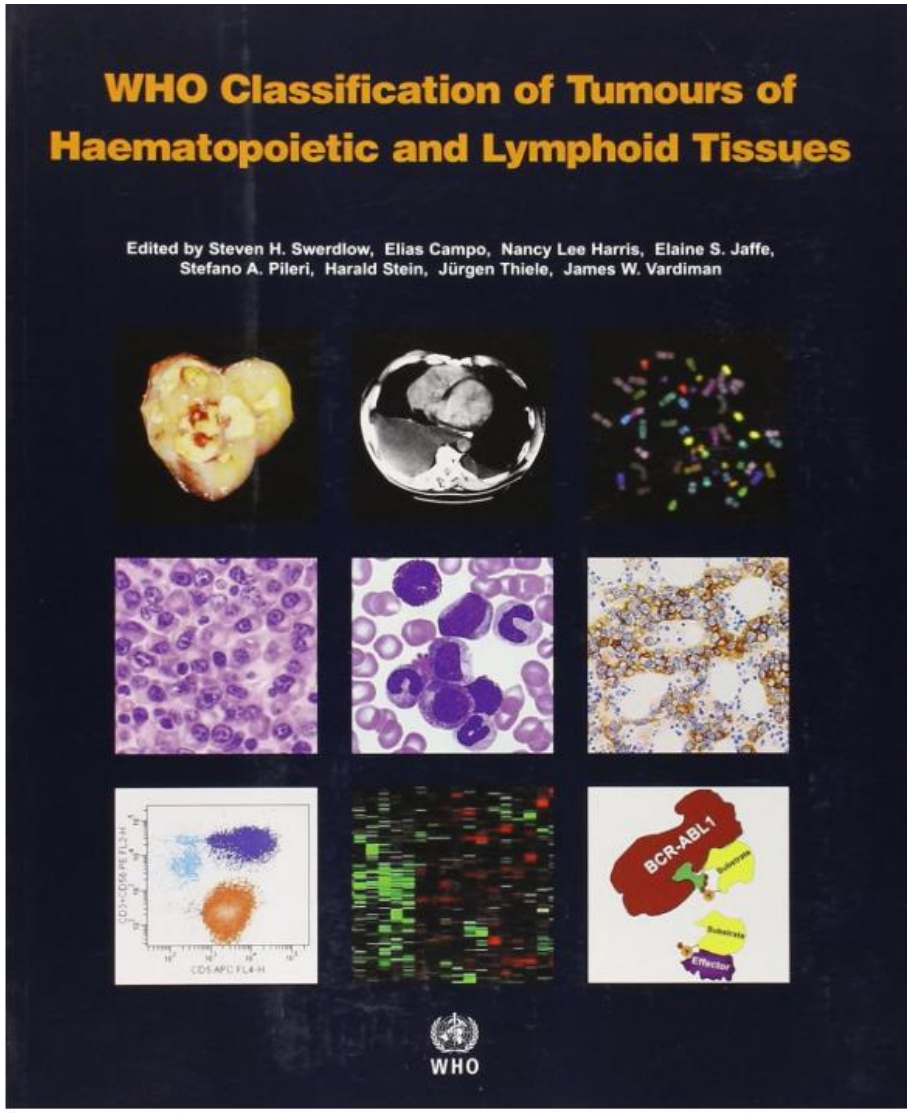
Affiliations + expand

PMID: 22017478 DOI: 10.1111/j.1365-2141.2011.08907.x

There are two entities described in the context of CLL/SLL transformation to Hodgkin Lymphoma:

1. Chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL) with isolated Hodgkin/Reed–Sternberg cells (CLL-HRS) – no background milieu of Hodgkin lymphoma.
2. Chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL) with classic Hodgkin lymphoma type Richter transformation(CLL-HL) - background milieu with mixed inflammatory background.

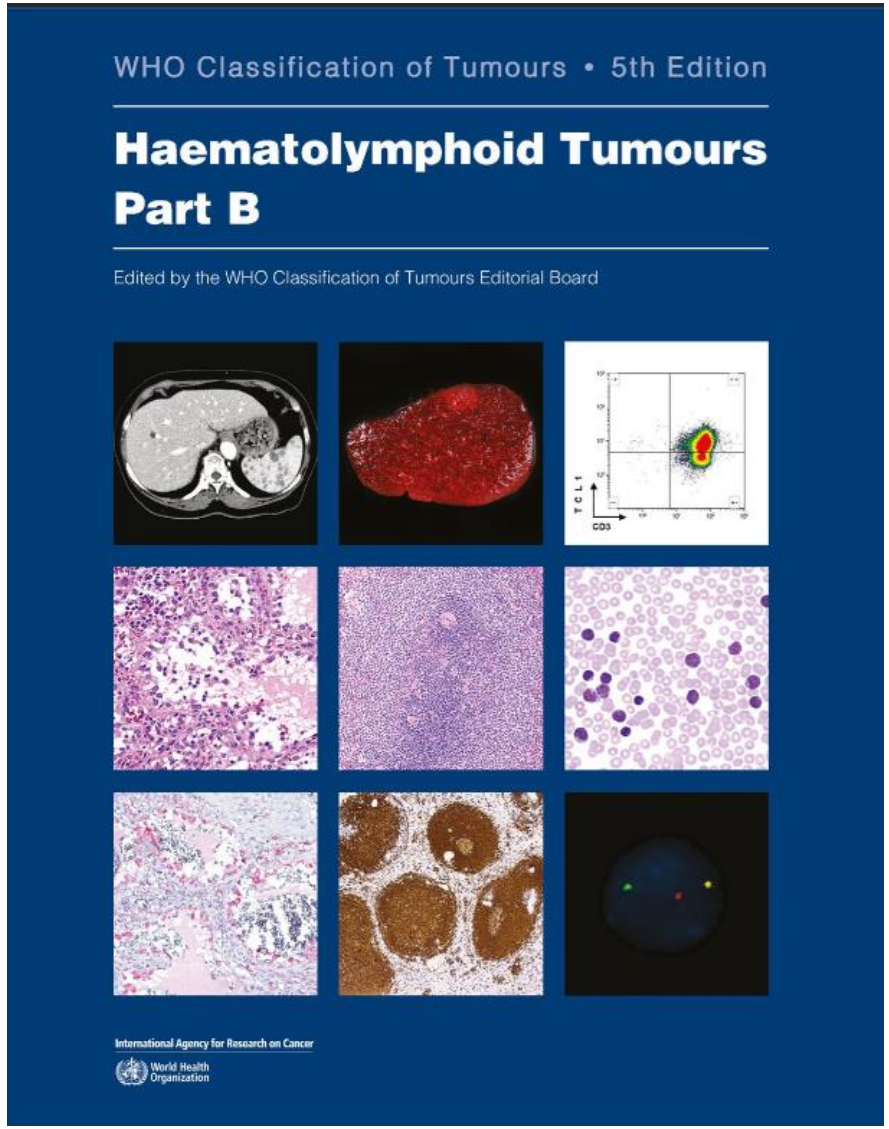
Literature Review



WHO 2017 Classification:

"Some CLL cases show scattered EBV positive or sometimes negative Reed-Sternberg cells in a background of CLL. The diagnosis of Hodgkin lymphoma in the setting of CLL requires classical RS cells in an appropriate background."

Literature Review



Meta-Analysis > Br J Haematol. 2012 Jan;156(1):50-66. doi: 10.1111/j.1365-2141.2011.08907.x. Epub 2011 Oct 24.

Hodgkin lymphoma as Richter transformation in chronic lymphocytic leukaemia: a retrospective analysis of world literature

Bruno Bockorny [1], Ion Codreanu, Constantin A Dasanu

Affiliations + expand

PMID: 22017478 DOI: 10.1111/j.1365-2141.2011.08907.x

WHO 2022 Classification:

"The presence of scattered Reed–Sternberg cells or Reed–Sternberg–like cells (EBV+/–), without the milieu of CHL, can also be seen in cases of CLL/SLL without transformation".

Literature Review

Hodgkin lymphoma variant of Richter transformation: morphology, Epstein-Barr virus status, clonality, and survival analysis—with comparison to Hodgkin-like lesion☆,☆☆

Wenbin Xiao MD, PhD[a,1], Wayne W. Chen MD, PhD[a,1,2], Lynn Sorbara PhD[b], Theresa Davies-Hill[a], Stefania Pittaluga MD, PhD[a], Mark Raffeld MD[b], Elaine S. Jaffe MD[a,*]

[a]*Hematopathology Section, Laboratory of Pathology, National Cancer Institute, National Institutes of Health, Bethesda, MD*
[b]*Molecular Diagnostic Unit, Laboratory of Pathology, National Cancer Institute, National Institutes of Health, Bethesda, MD*

Received 13 February 2016; accepted 7 April 2016

Type I: 26 cases
Type II: 51 cases

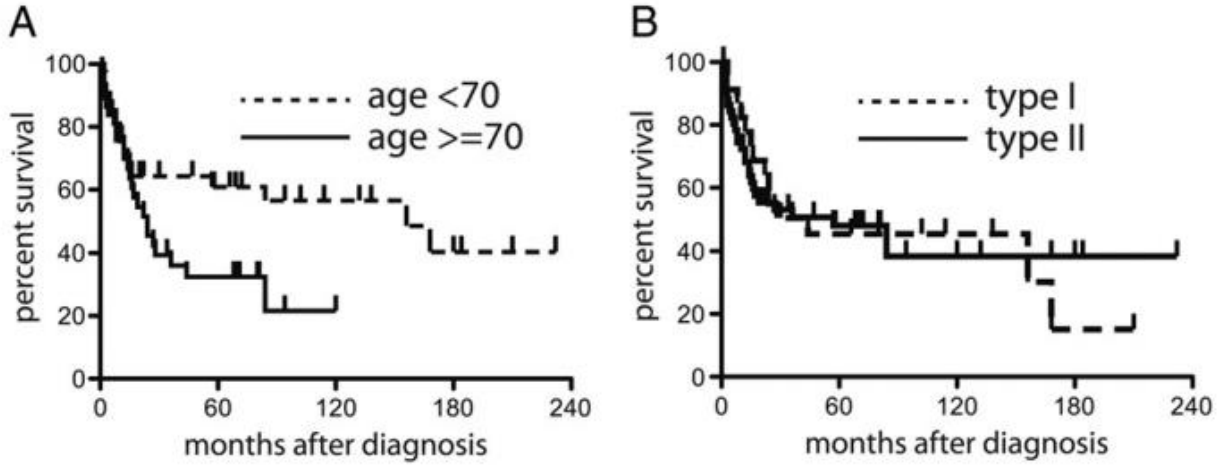
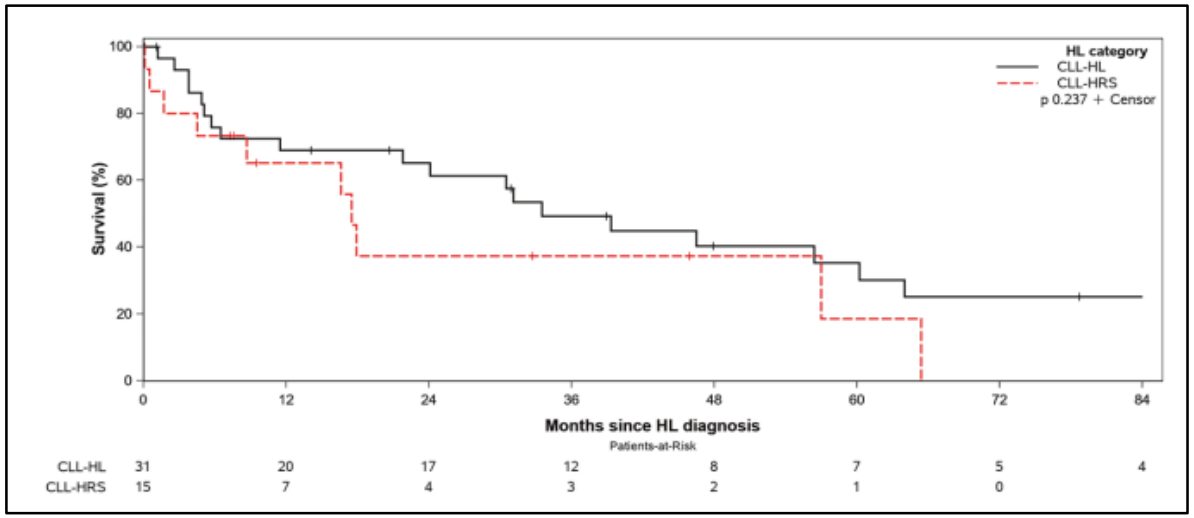
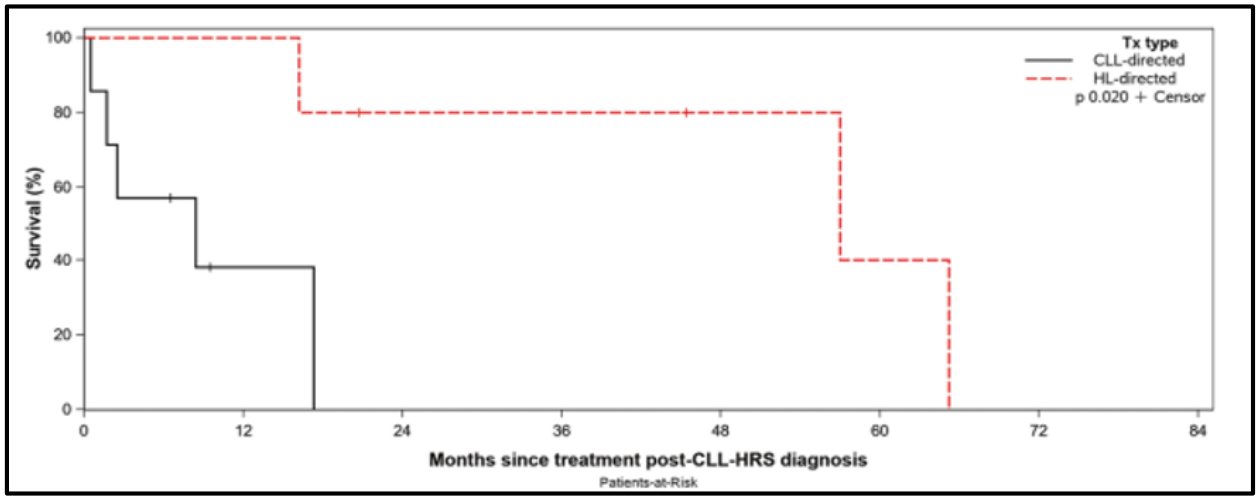


Fig. 5 Kaplan-Meier analysis of survival after type I and type II diagnoses. Age older than 70 years influences survival (A), but no differences are seen for type I versus type II (B).

FOX CHASE CANCER CENTER
TEMPLE HEALTH

Literature Review





ARTICLE OPEN

Check for updates

Chronic lymphocytic leukemia (CLL) with Reed–Sternberg-like cells vs Classic Hodgkin lymphoma transformation of CLL: does this distinction matter?

Rebecca L. King[1✉], Alia Gupta[1], Paul J. Kurtin[1], Wei Ding[2], Timothy G. Call[2], Kari G. Rabe[3], Saad S. Kenderian[2], Jose F. Leis[4], Yucai Wang[2], Susan M. Schwager[2], Susan L. Slager[2,3], Neil. E. Kay[2], Amber Koehler[1], Stephen M. Ansell[2], David J. Inwards[2], Thomas M. Habermann[2], Min Shi[1], Curtis A. Hanson[1], Matthew T. Howard[1] and Sameer A. Parikh[2]

Table 1. Patient characteristics.

	CLL-HRS	CLL-HL	Total
Therapy of CLL-HRS and CLL-HL			
None	2 (13%)	0 (0%)	2 (4%)
CLL-directed	7 (47%)	2 (7%)	9 (20%)
HL-directed	6 (40%)	28 (93%)	34 (76%)
Missing	0	1	1

FOX CHASE CANCER CENTER
TEMPLE HEALTH

MANAGEMENT:

Nivo-AVD (Nivolumab + Doxorubicin, Vinblastine, Dacarbazine) **- 6 cycles of therapy planned.**

Got 3 cycle - decrease in the size and FDG avidity of lymphadenopathy in the right axilla and mediastinum.

SUMMARY:

- A rare case of chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL) with Hodgkin/Reed–Sternberg like cells (CLL-HRS).
- Literature reviews suggests that CLL-HRS and CLL-HL patients do not have significant survival difference and both should be treated with Hodgkin lymphoma-directed therapy.

References:

ARTICLE OPEN

Check for updates

Chronic lymphocytic leukemia (CLL) with Reed–Sternberg-like cells vs Classic Hodgkin lymphoma transformation of CLL: does this distinction matter?

Rebecca L. King[1], Alia Gupta[1], Paul J. Kurtin, Yucai Wang[2], Susan M. Schwager[2], Susan L. Sla, Thomas M. Habermann[2], Min Shi[1], Curtis A. Ha

© The Author(s) 2022

Meta-Analysis > Br J Haematol. 2012 Jan;156(1):50-66. doi: 10.1111/j.1365-2141.2011.08907.x. Epub 2011 Oct 24.

Hodgkin lymphoma as Richter transformation in chronic lymphocytic leukaemia: a retrospective analysis of world literature

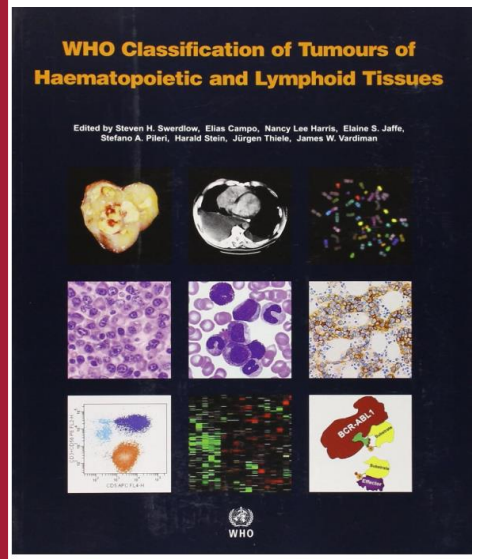
Bruno Bockorny[1], Ion Codreanu, Constantin A Dasanu

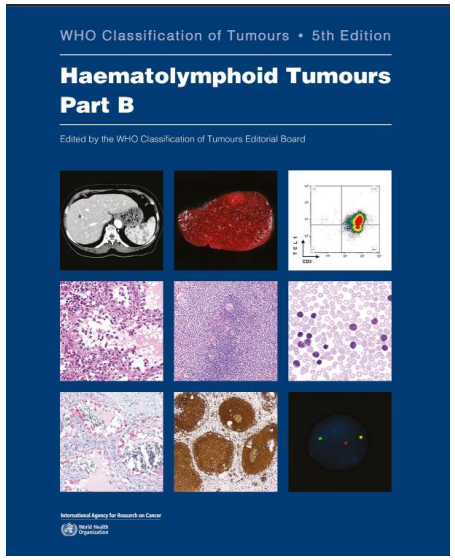
Affiliations + expand

PMID: 22017478 DOI: 10.1111/j.1365-2141.2011.08907.x

bjh research paper

Hodgkin lymphoma as Richter transformation in chronic lymphocytic leukaemia: a retrospective analysis of world literature





CrossMark

Hodgkin lymphoma variant of Richter transformation: morphology, Epstein-Barr virus status, clonality, and survival analysis—with comparison to Hodgkin-like lesion☆,☆☆

Wenbin Xiao MD, PhD[a,1], Wayne W. Chen MD, PhD[a,1,2], Lynn Sorbara PhD[b], Theresa Davies-Hill[a], Stefania Pittaluga MD, PhD[a], Mark Raffeld MD[b], Elaine S. Jaffe MD[a,*]

[a]*Hematopathology Section, Laboratory of Pathology, National Cancer Institute, National Institutes of Health, Bethesda, MD*
[b]*Molecular Diagnostic Unit, Laboratory of Pathology, National Cancer Institute, National Institutes of Health, Bethesda, MD*

Received 13 February 2016; accepted 7 April 2016

FOX CHASE CANCER CENTER
TEMPLE HEALTH

Thank you!

Multi-Institutional Hematopathology Case Presentation

FOX CHASE
CANCER CENTER
TEMPLE HEALTH