

# EHA-MSH Hematology Tutorial

Self-assessment Case – Session 2:  
Histopathology and Diagnosis

*Speaker: Miguel A. Piris*

Kuala Lumpur, Malaysia  
April 17-18, 2024

# | Introduction

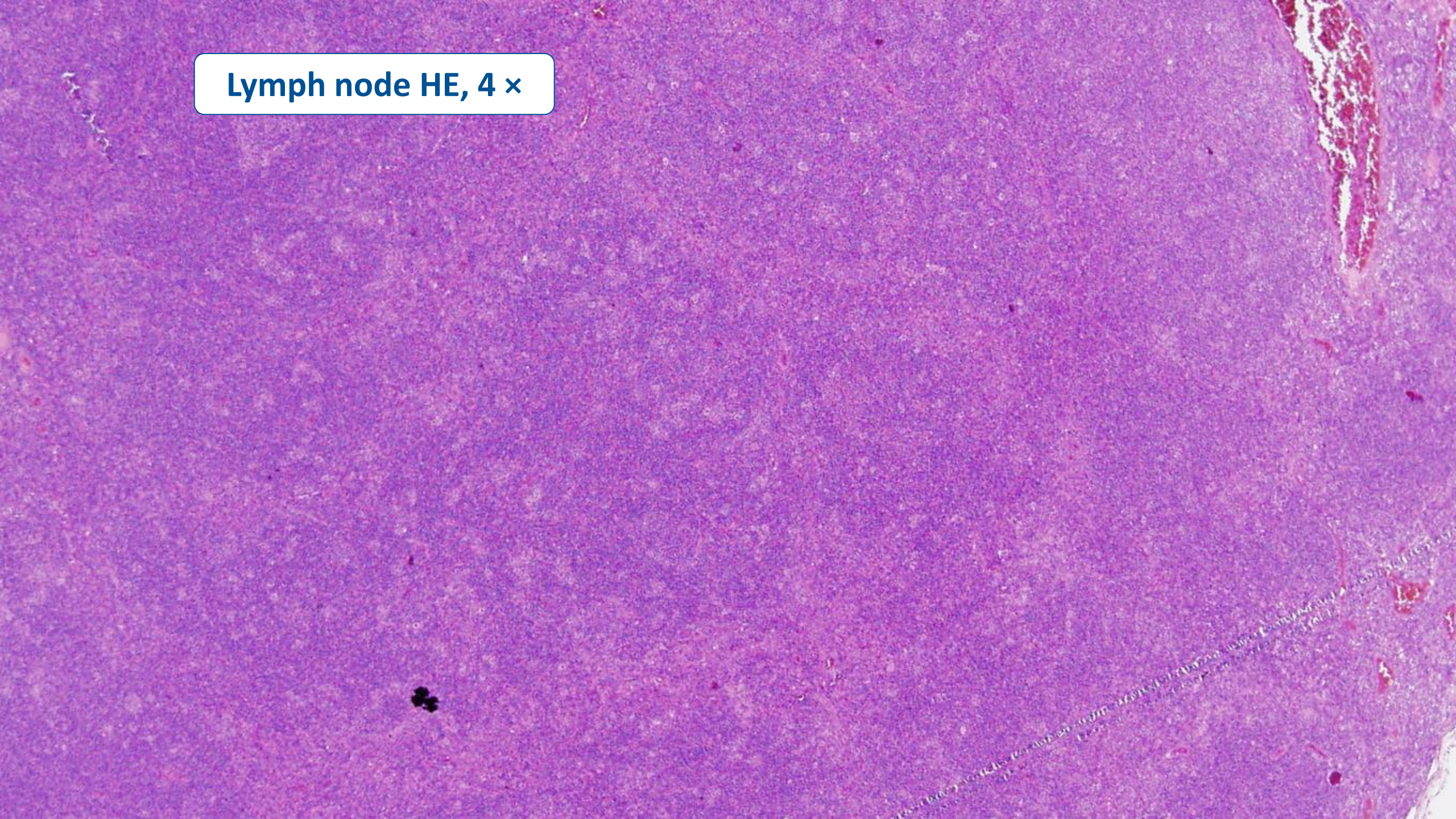
- Large pleomorphic cells (Hodgkin cells) can be seen in different clinical and histological contexts
- Identifying the appropriate markers for making a diagnosis is the challenge here

# | Case 1

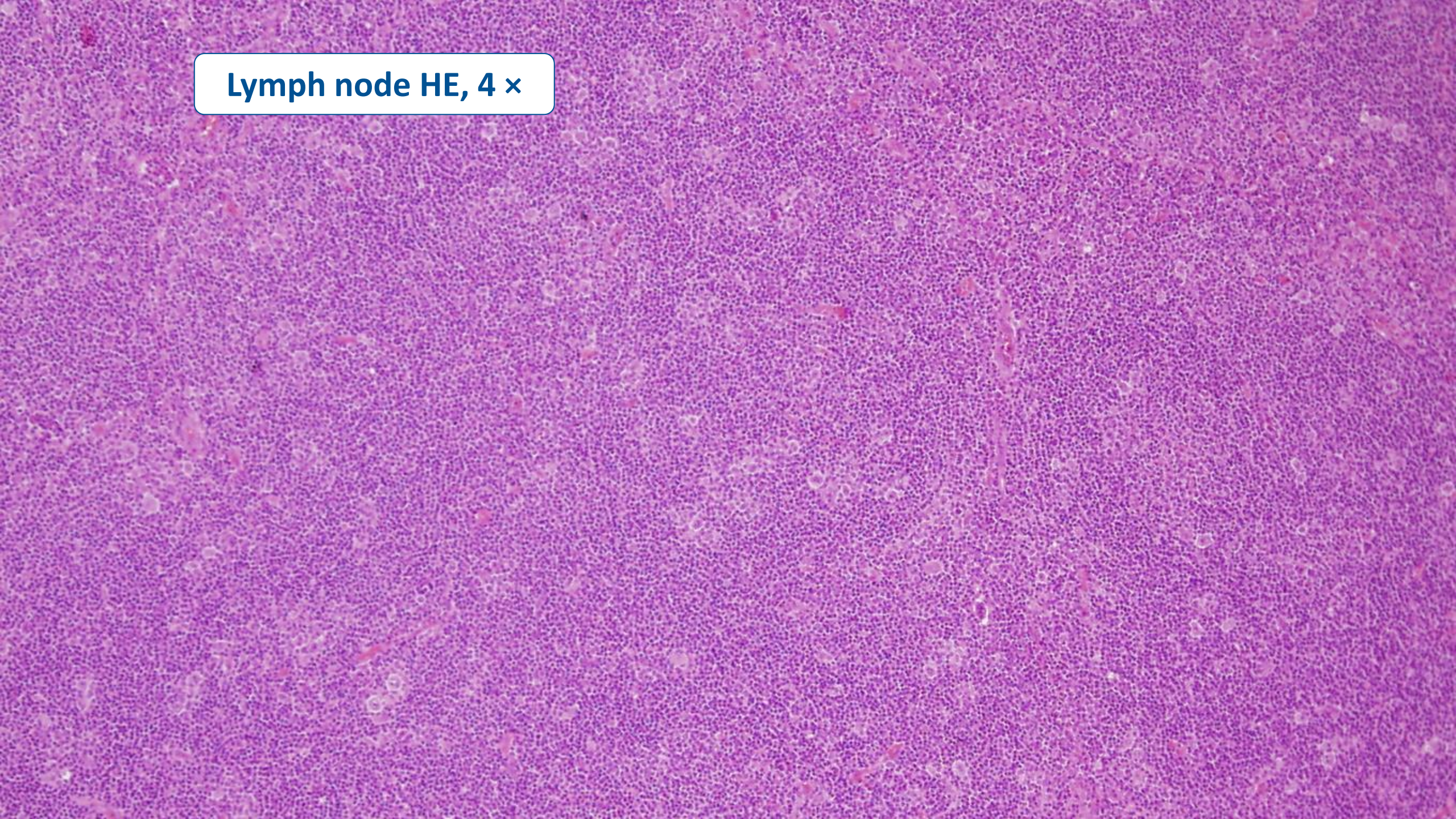
## Clinical information:

- 23-year-old male patient
- Cervical lymphadenopathy measuring 3.5 cm

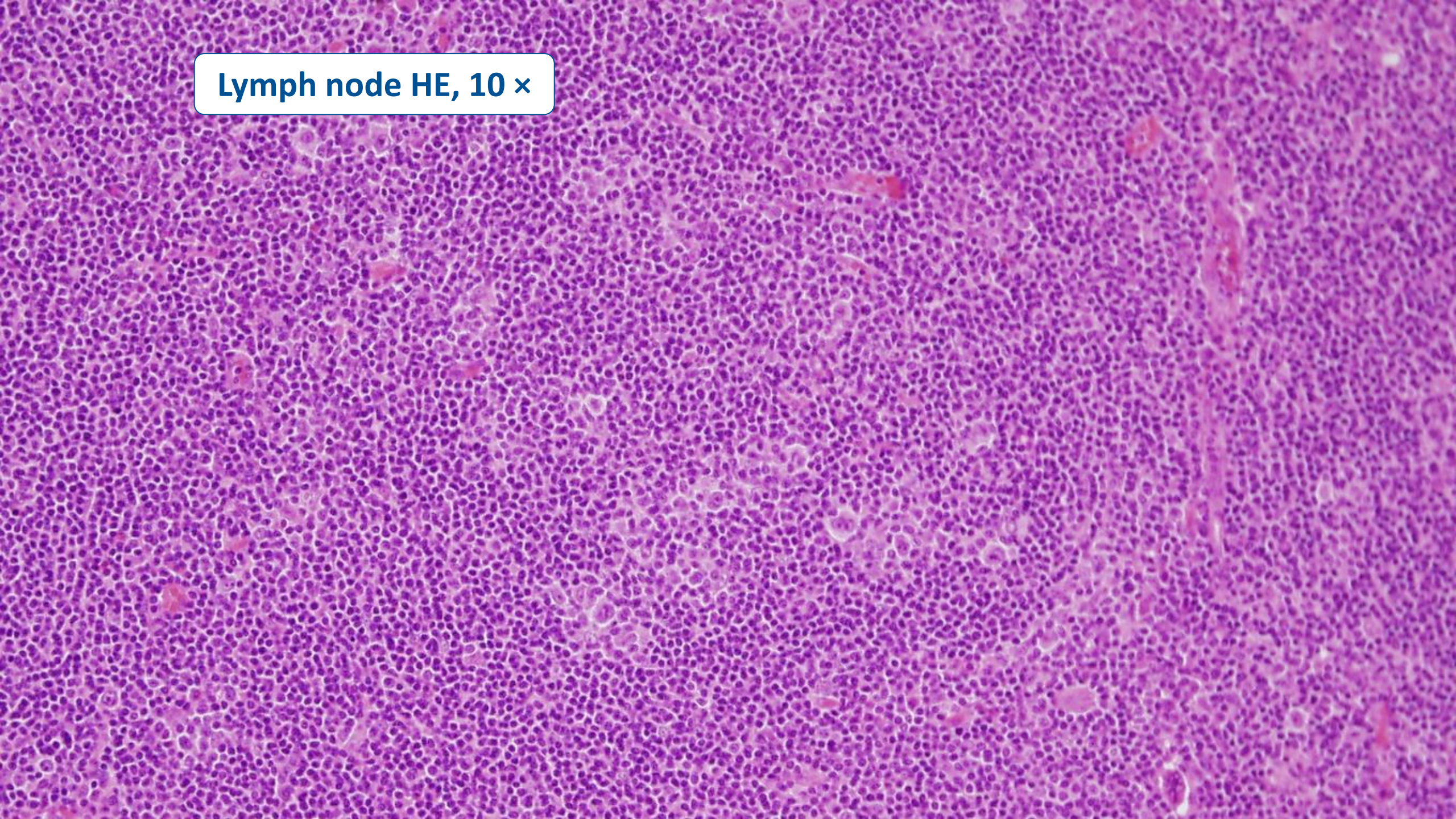
Lymph node HE, 4 ×



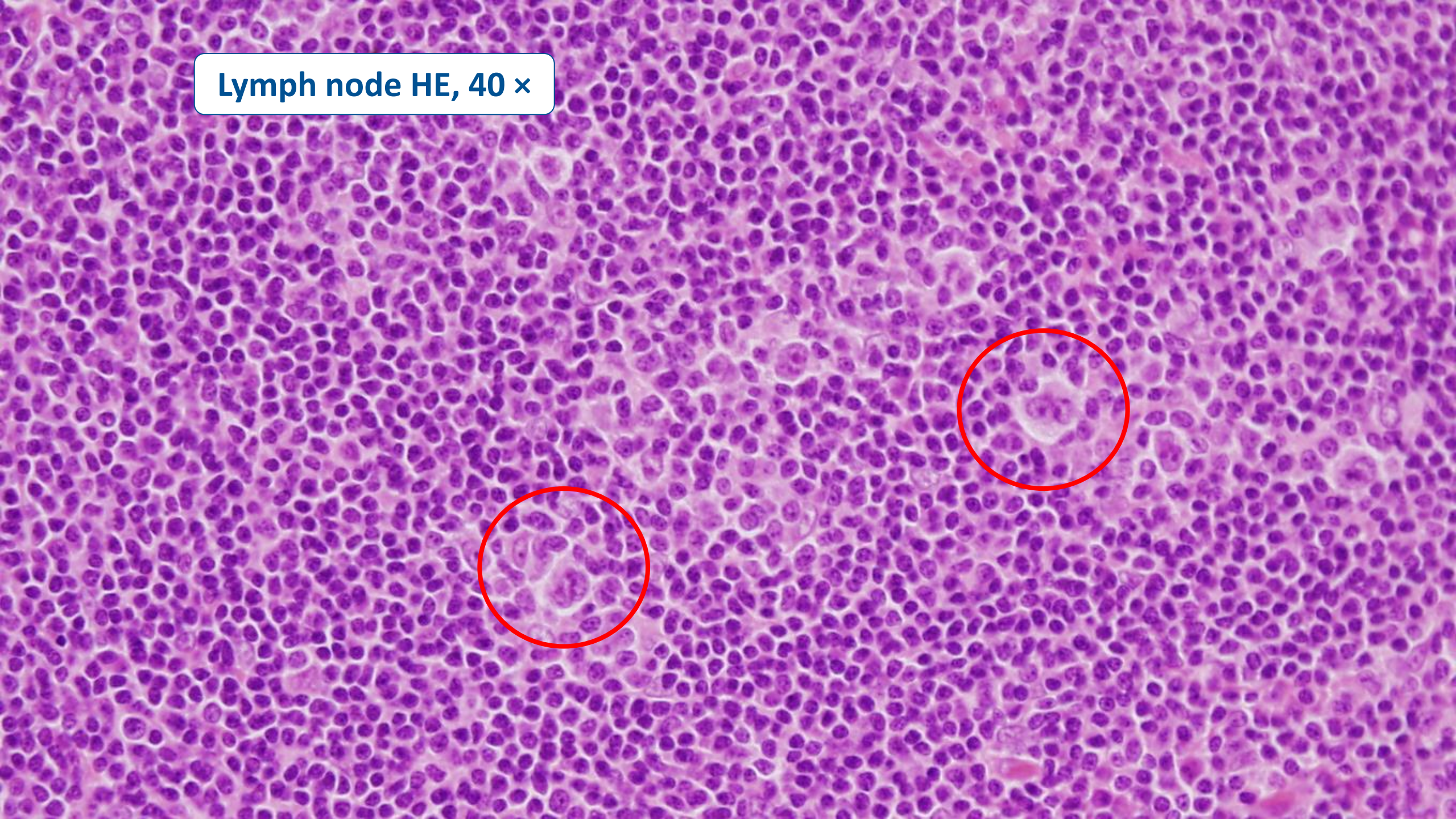
Lymph node HE, 4 ×



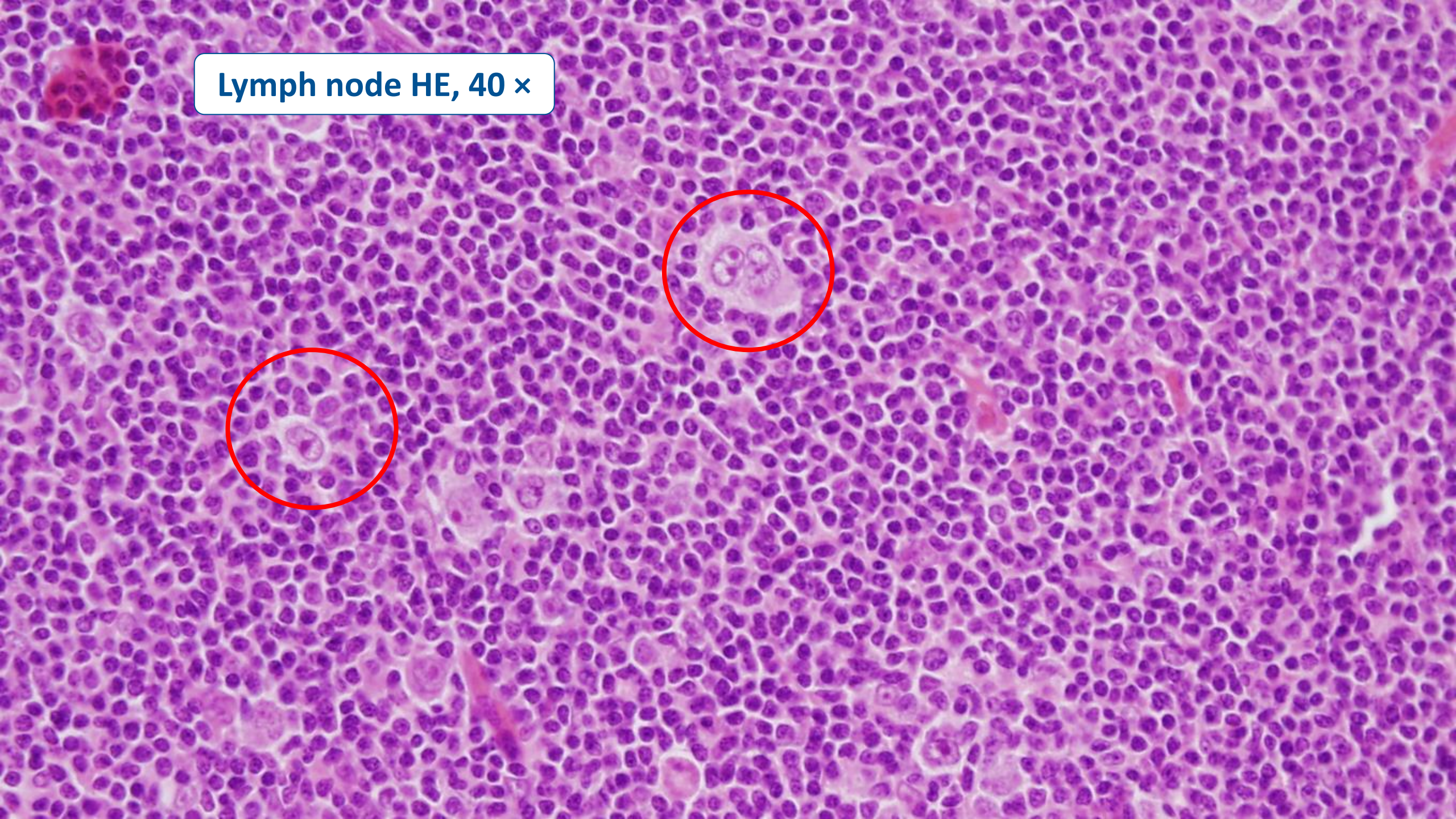
Lymph node HE, 10 ×



Lymph node HE, 40 ×

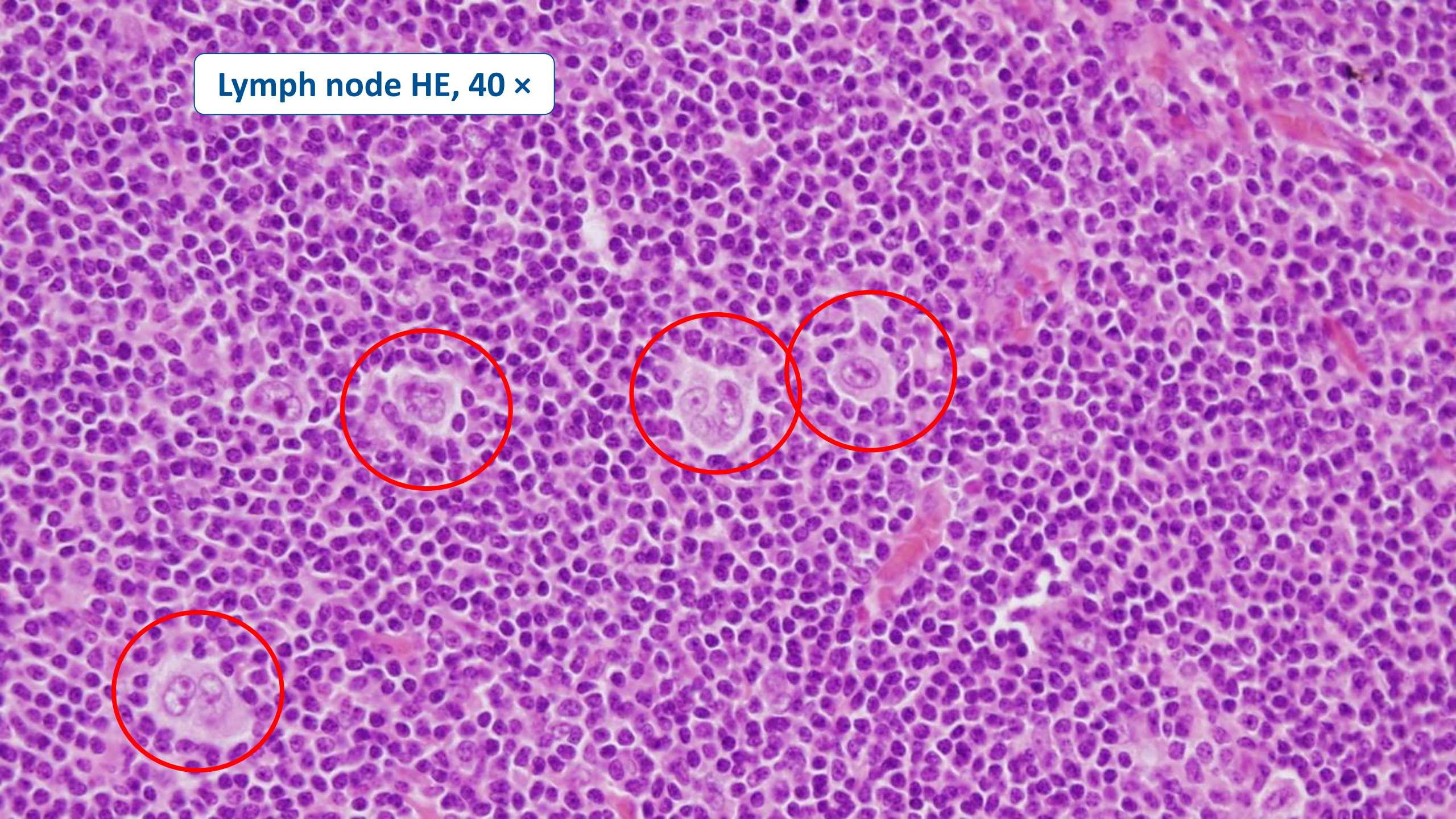


Lymph node HE, 40 ×

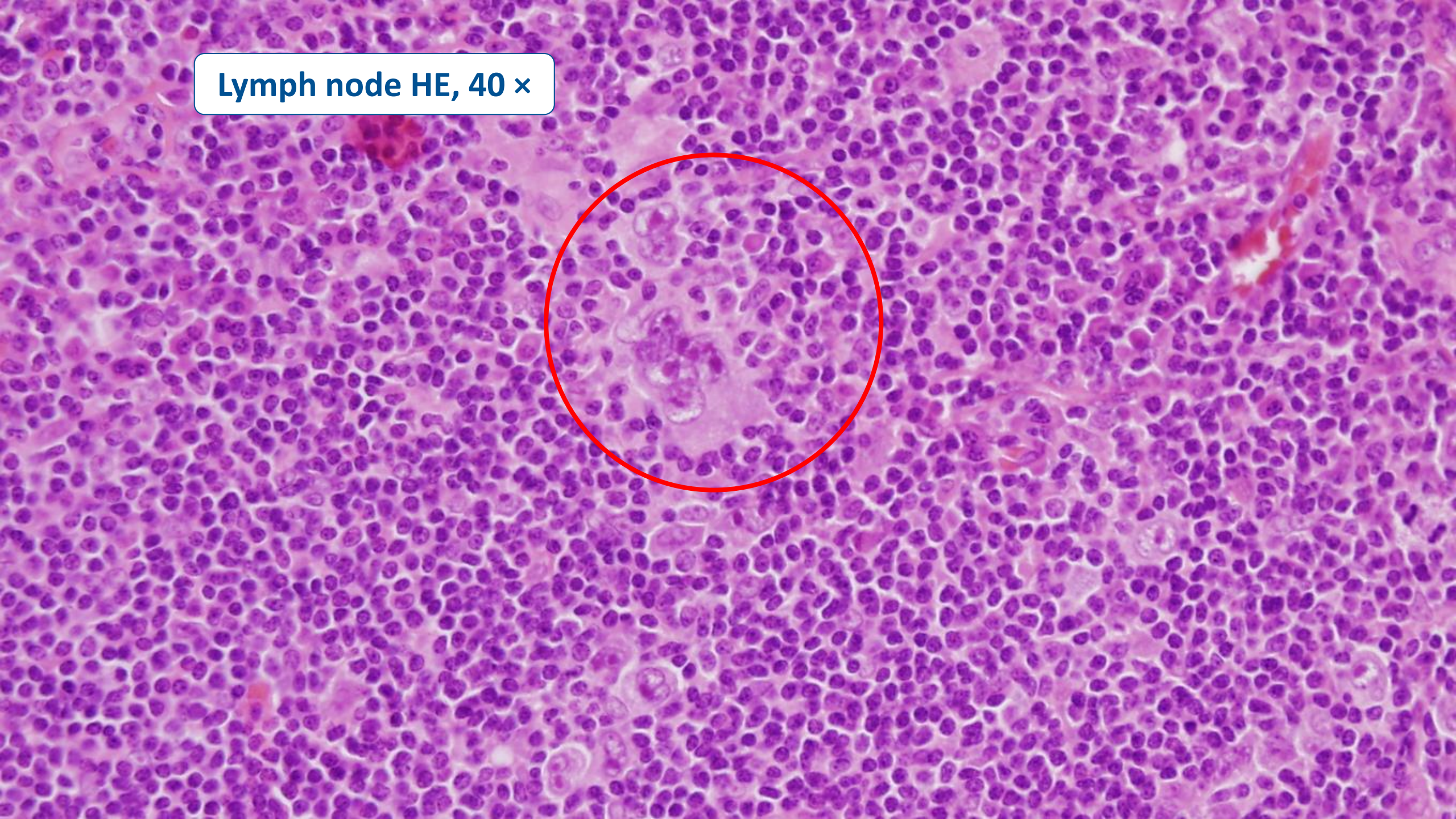




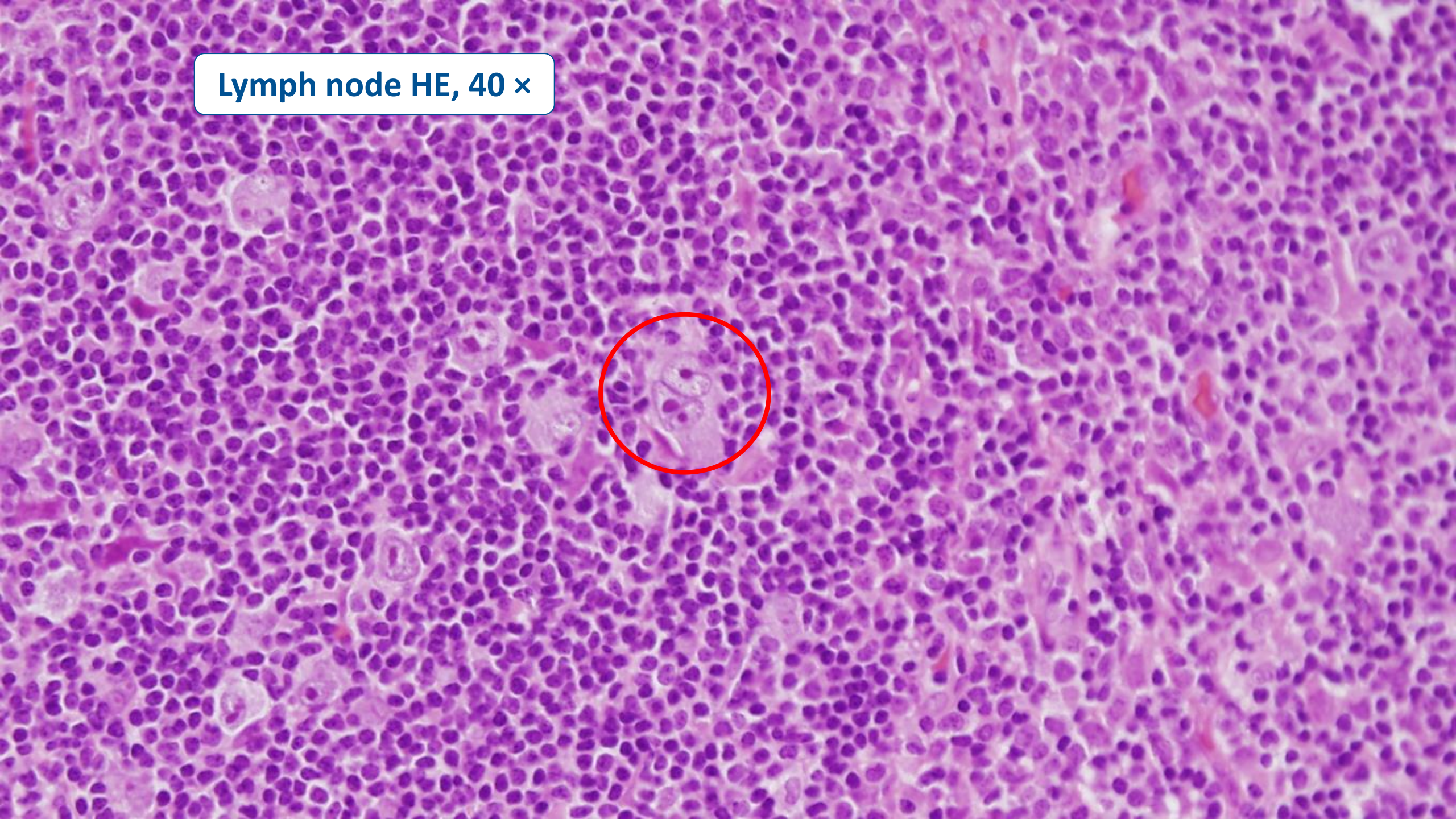
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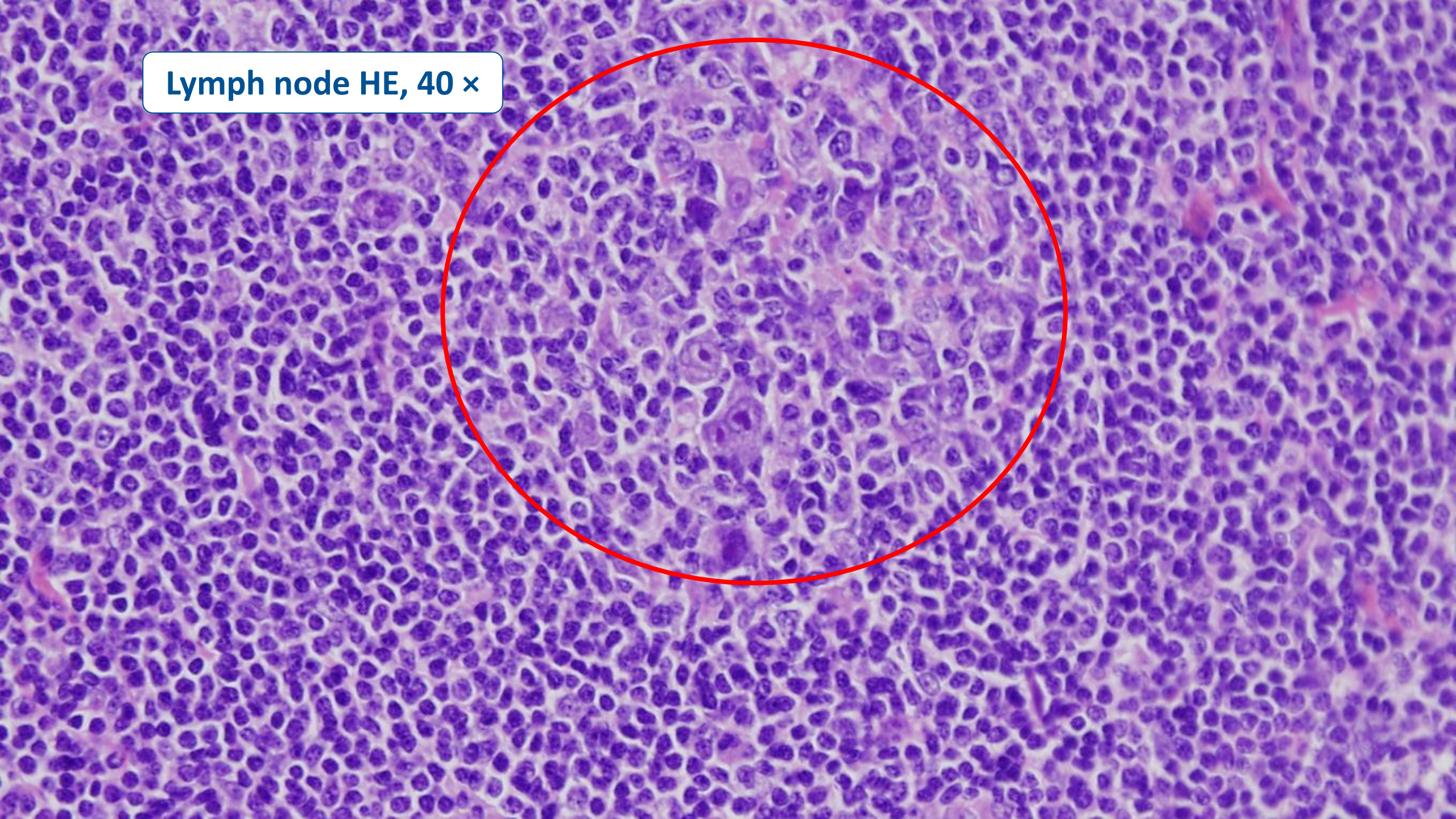
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# | Question: What is your provisional diagnosis?

1. B-cell lymphoma, nodular lymphocyte predominance (NLPHL)
2. T-cell lymphoma with RS cells
3. Anaplastic large-cell lymphoma, Hodgkin-like
4. Classical Hodgkin lymphoma, lymphocyte-rich
5. B-cell NHL with RS cells

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# | Question: What does the diagnosis require?

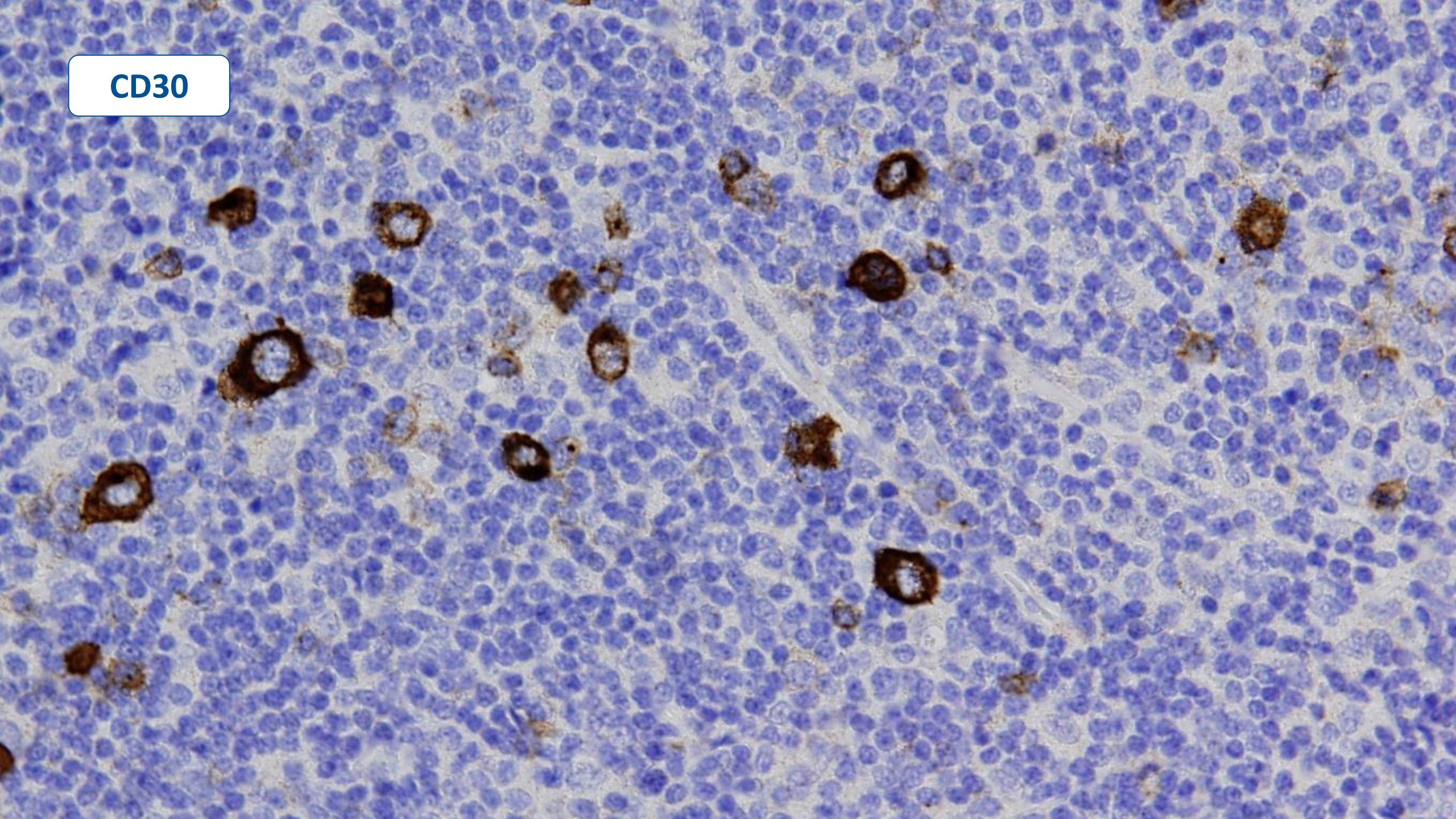
1. IgH and TCR rearrangement studies
2. Immunostaining for CD30, OCT2, PD1, EBV/LMP, PAX5, CD23
3. ISH for EBV (EBER) and kappa/lambda
4. Mutational study for B-cell, T-cell, and Hodgkin-mutated genes
5. 9p24 ISH study and/or PD-L1 immunostaining

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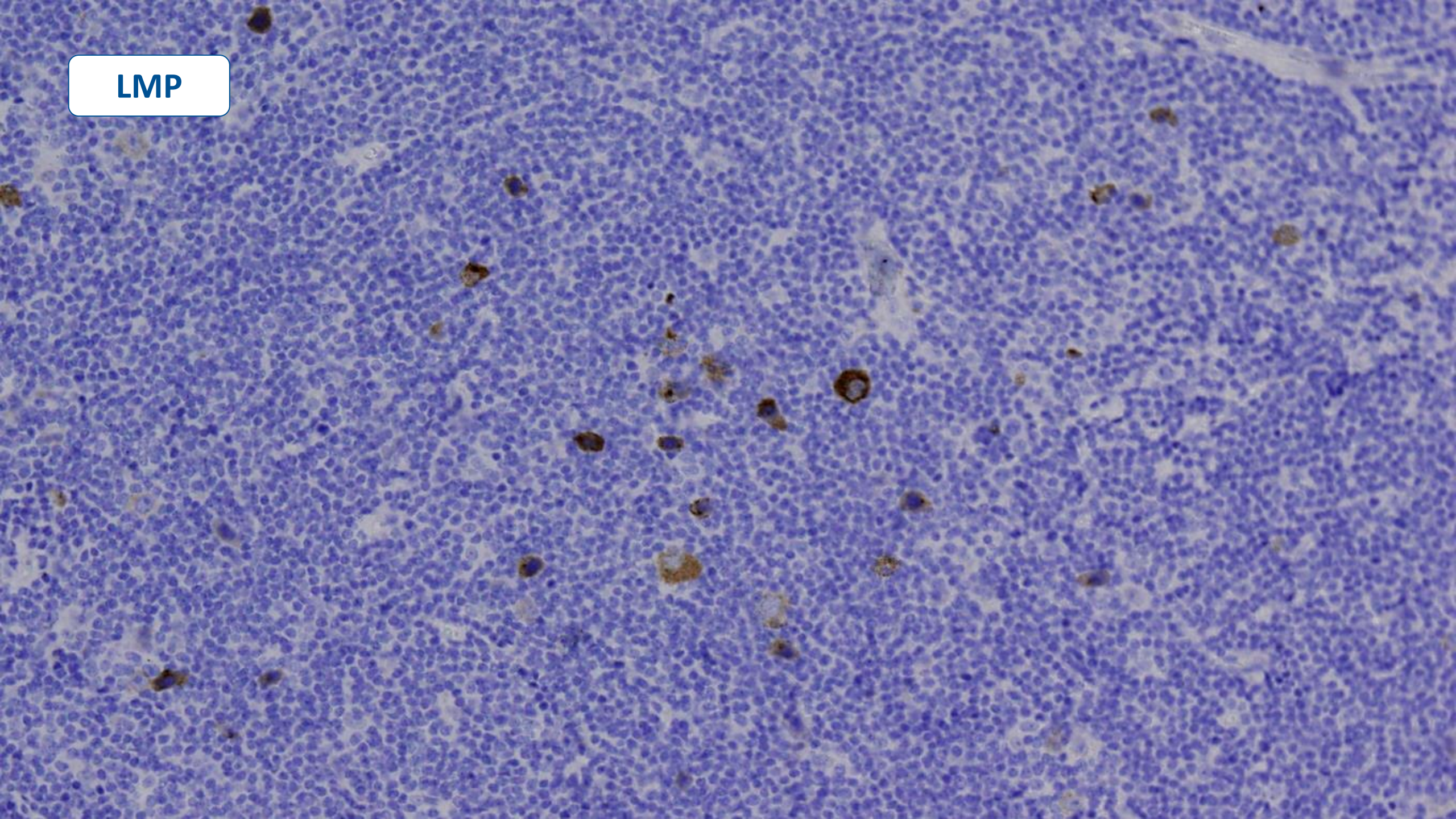
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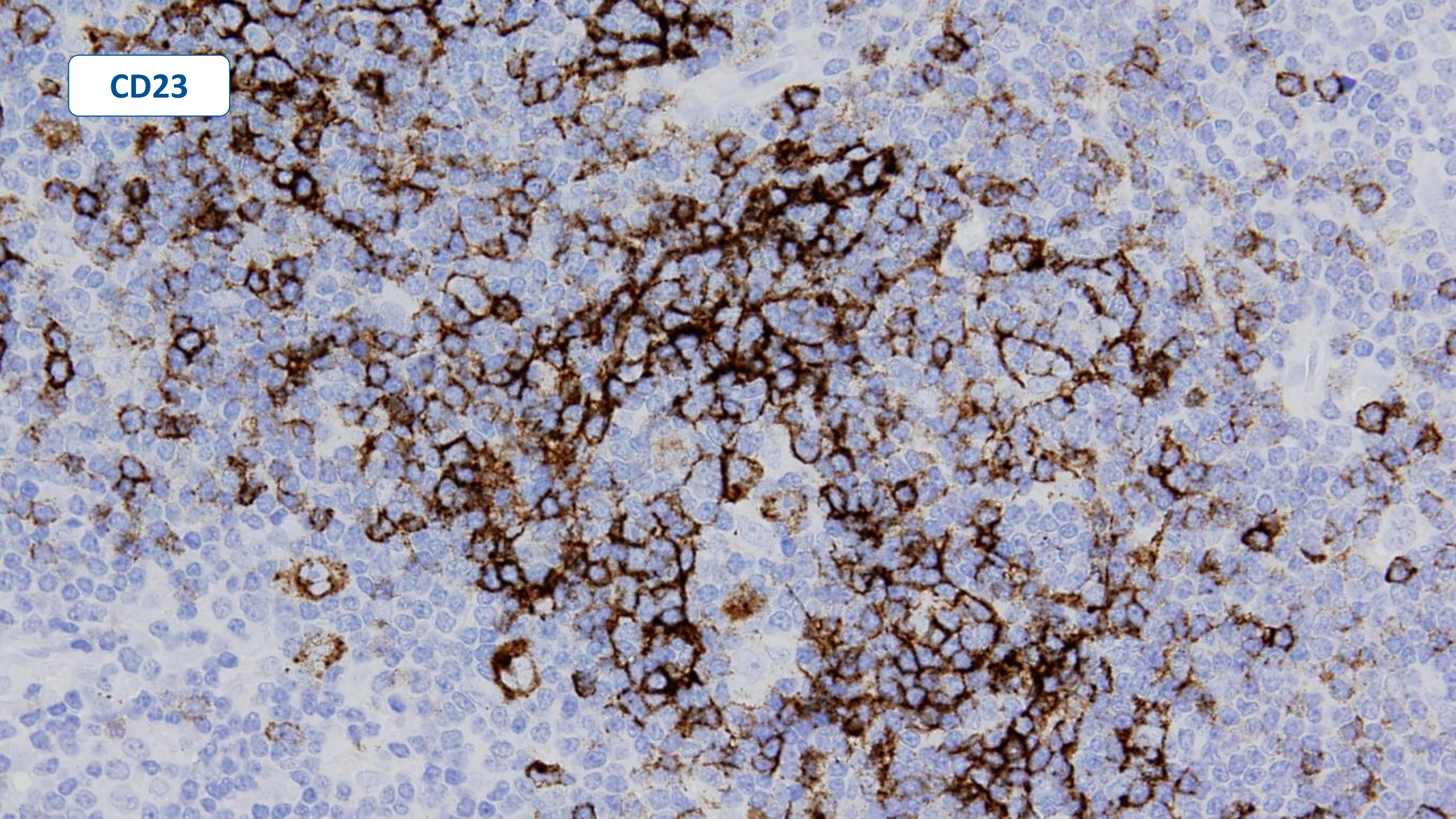
CD30



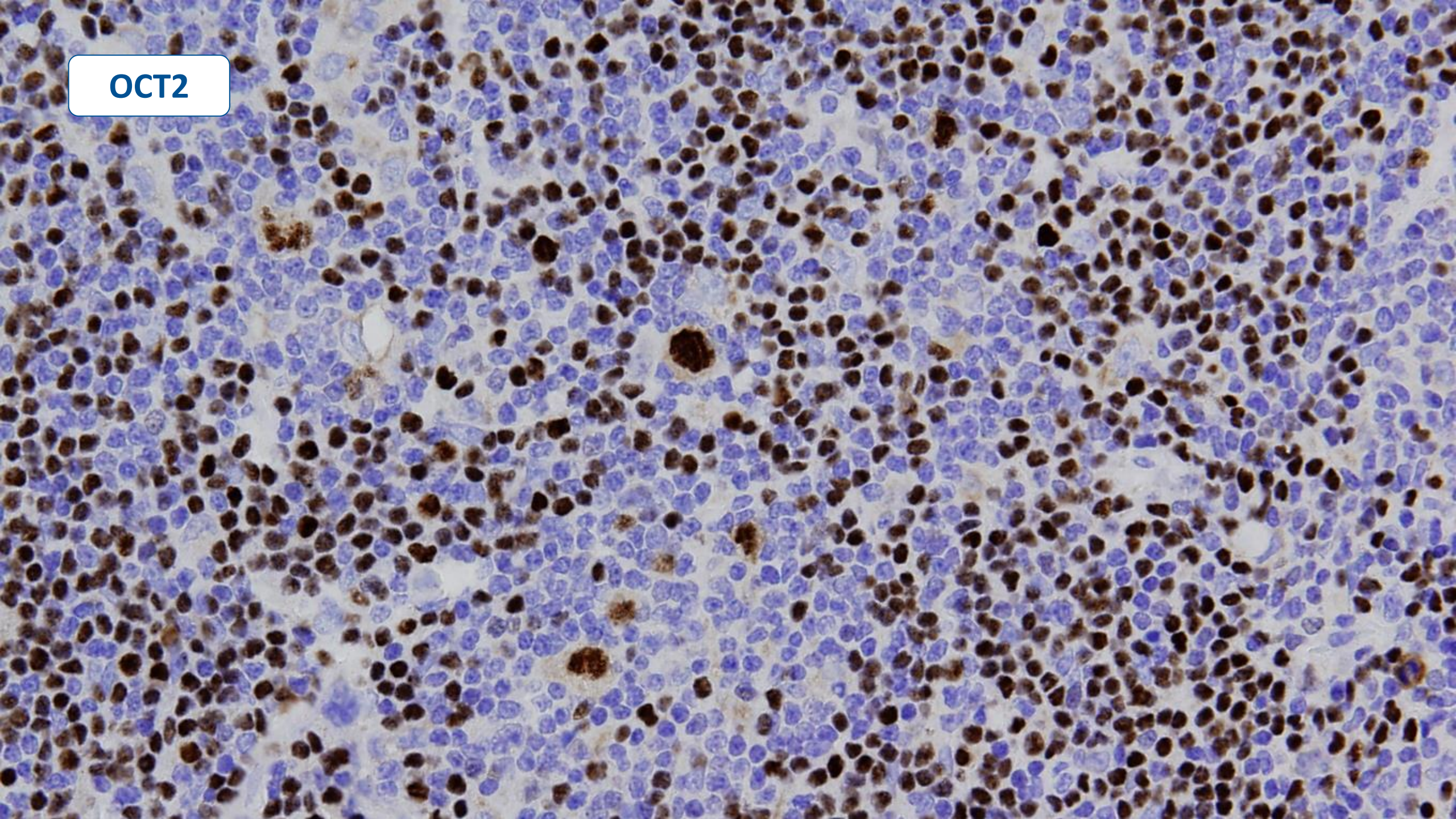
LMP



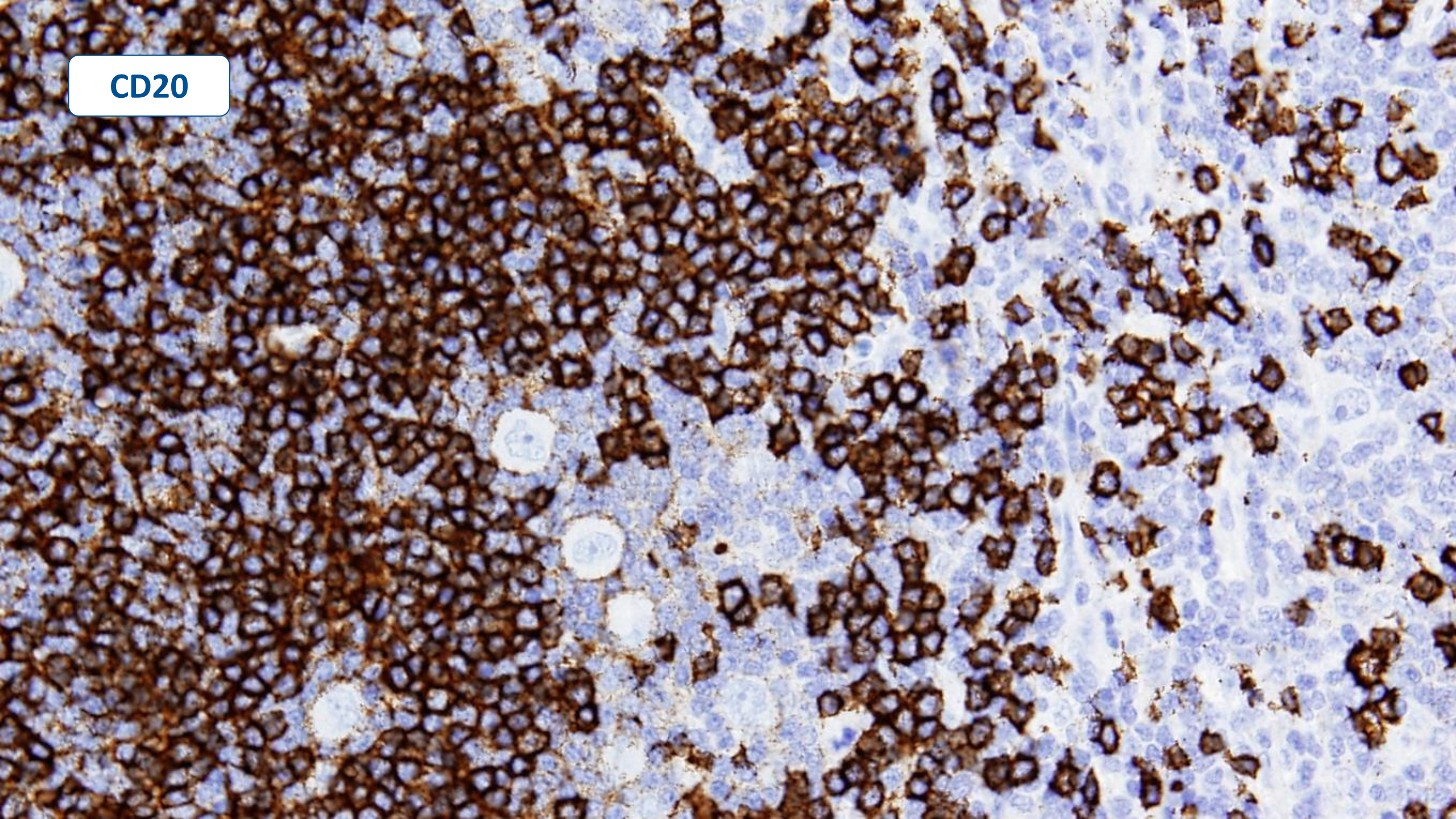
CD23



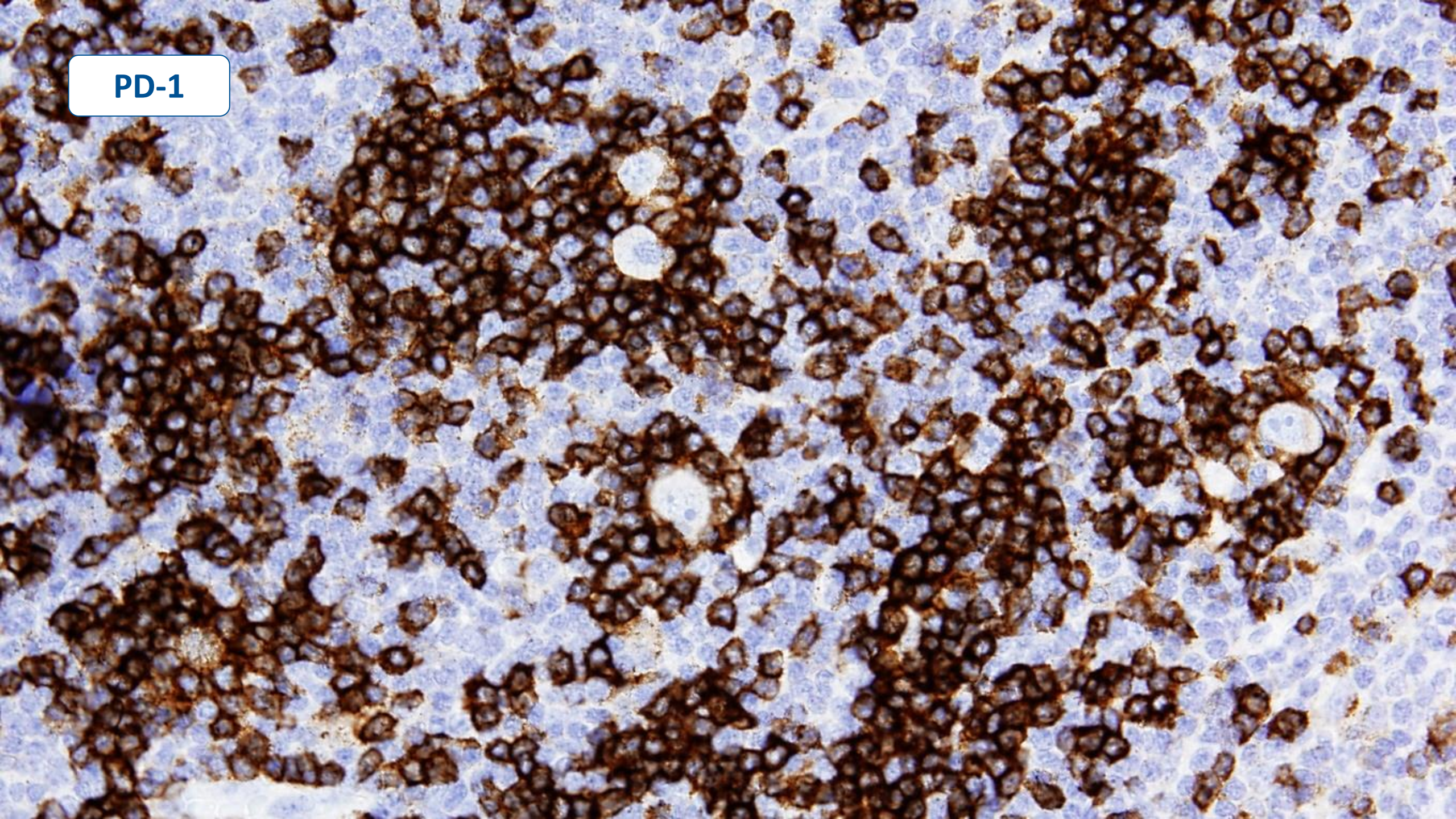
OCT2



CD20



PD-1



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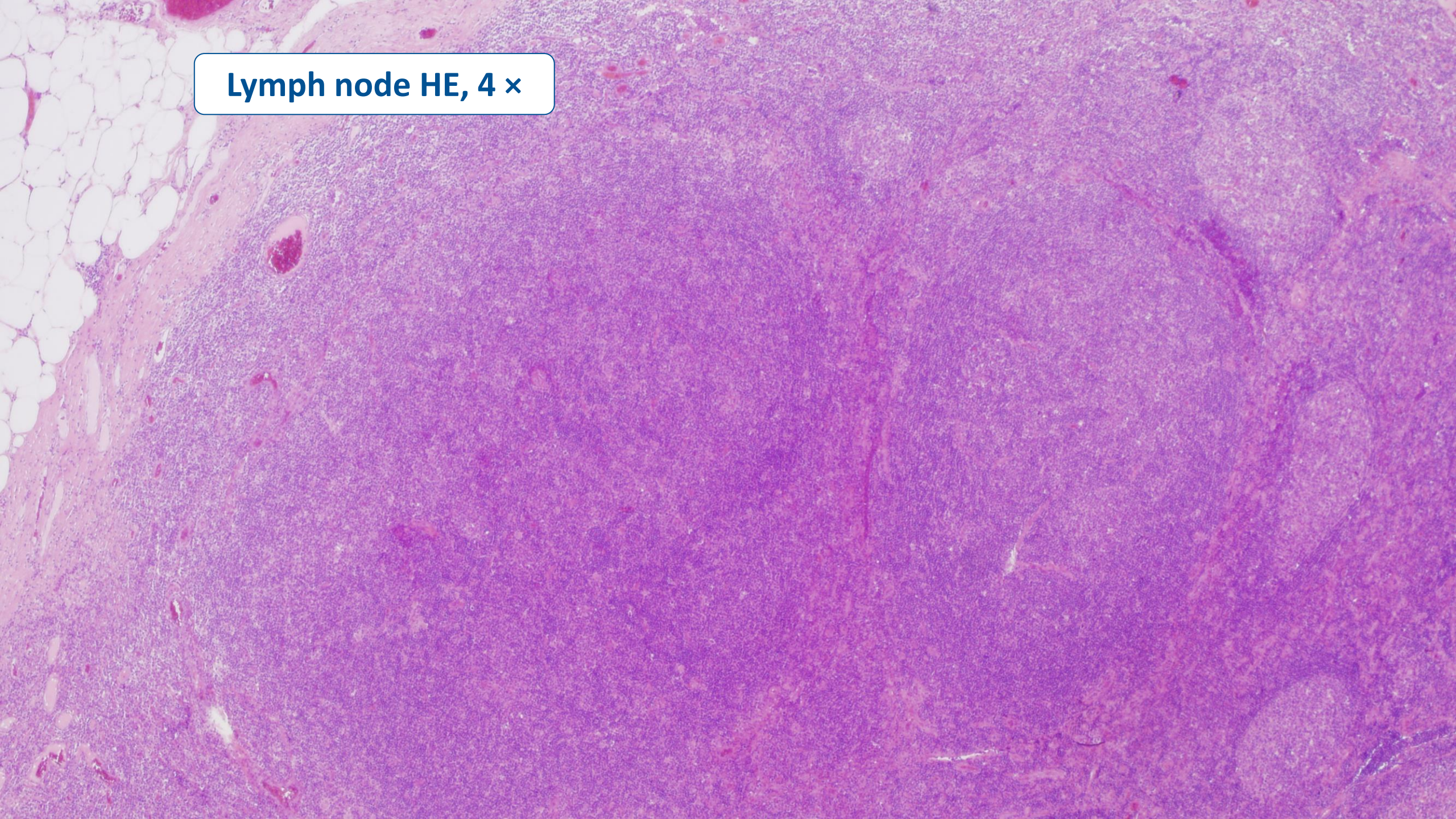


# | Case 2

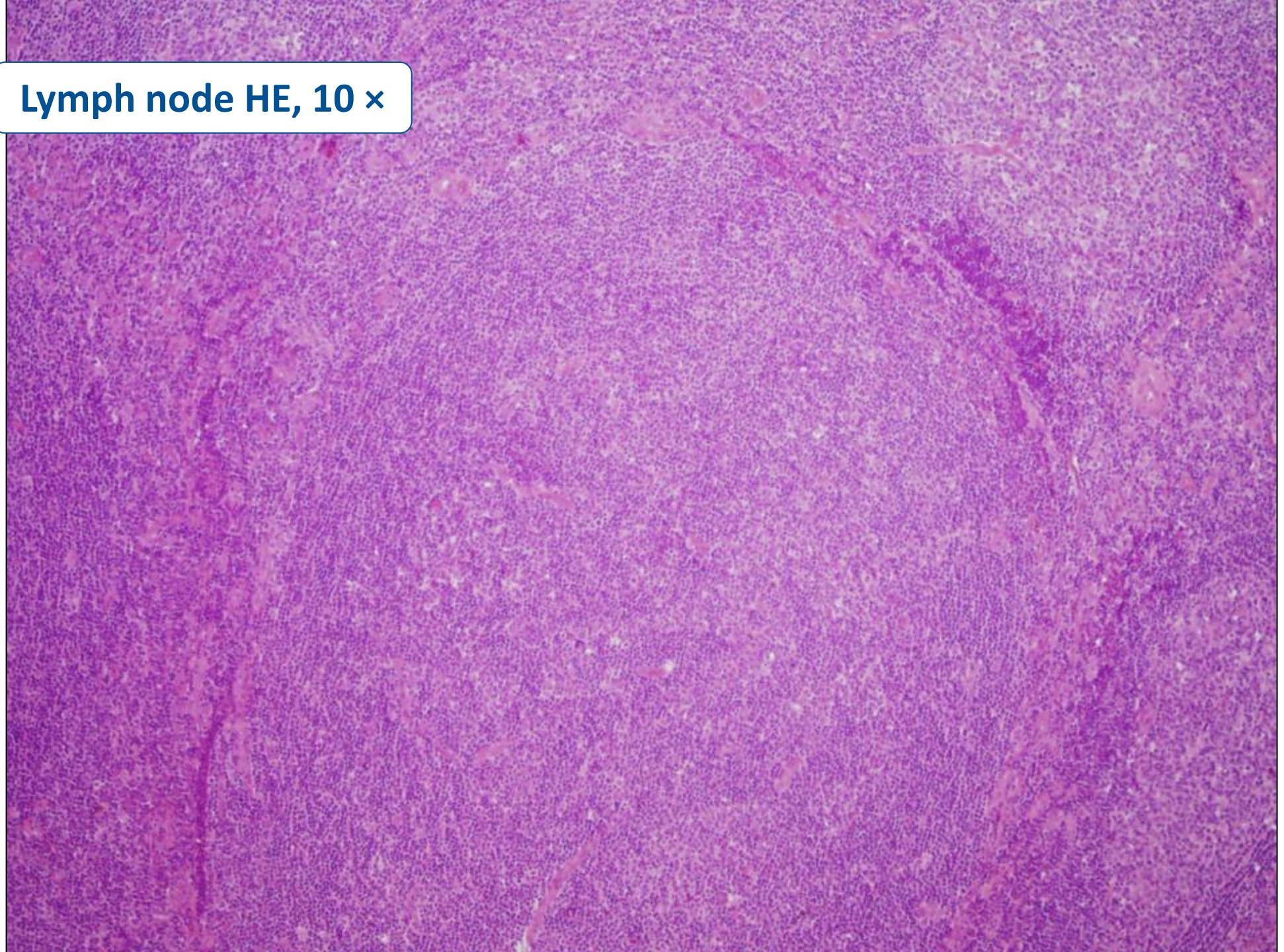
## Clinical information:

- 17-year-old male patient
- Inguinal lymphadenopathy measuring 5 cm

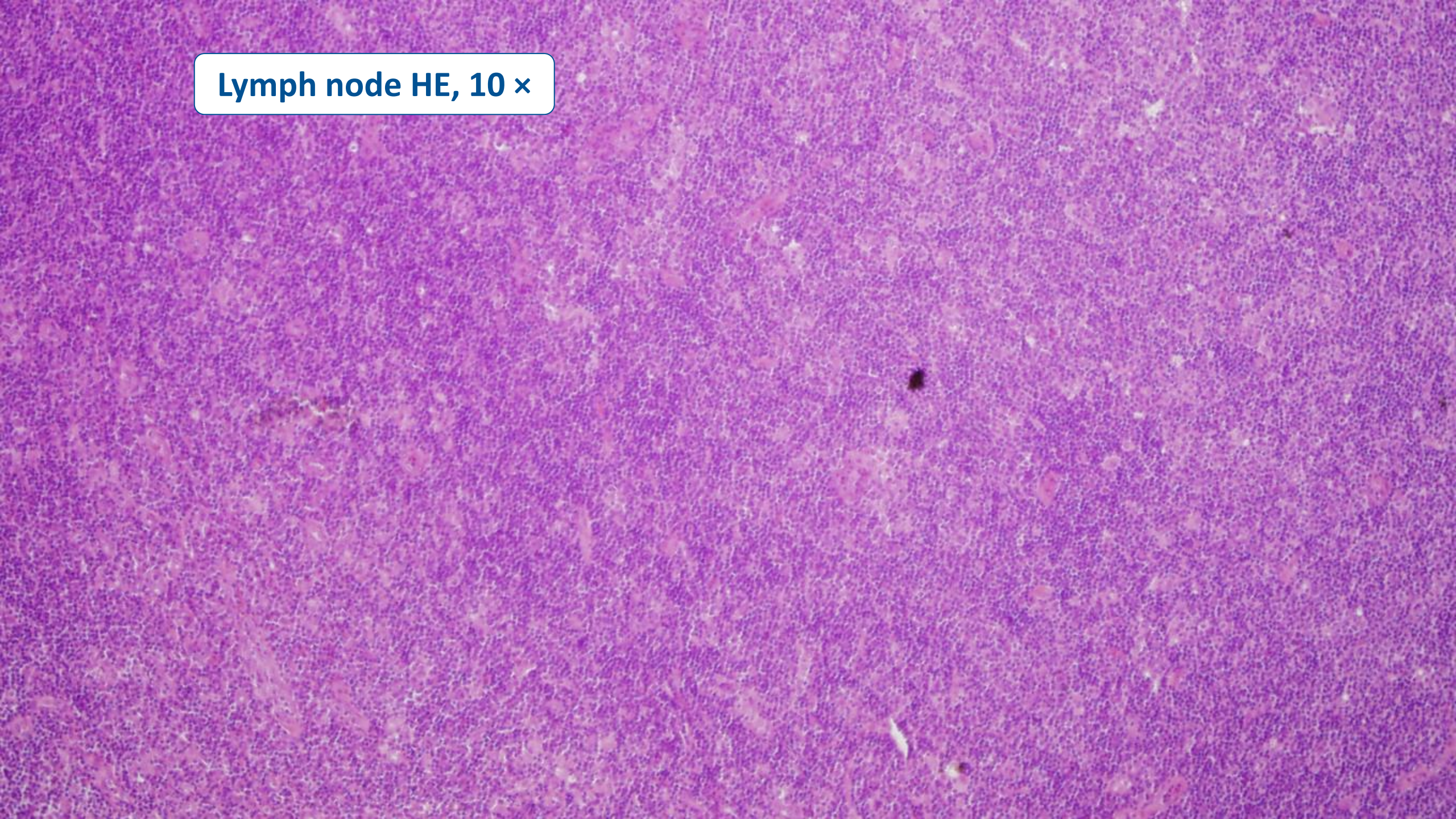
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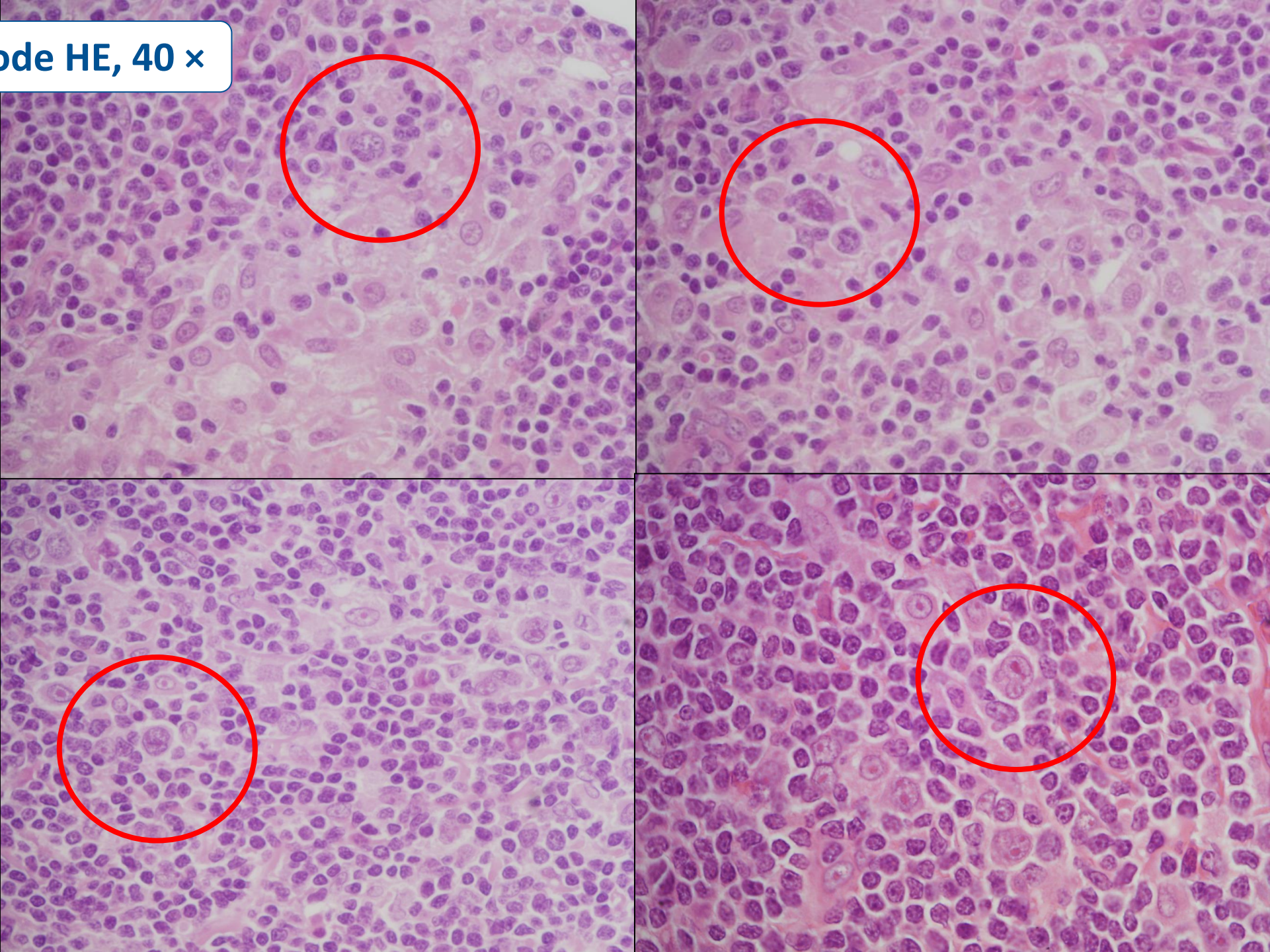
**Lymph node HE, 10 ×**

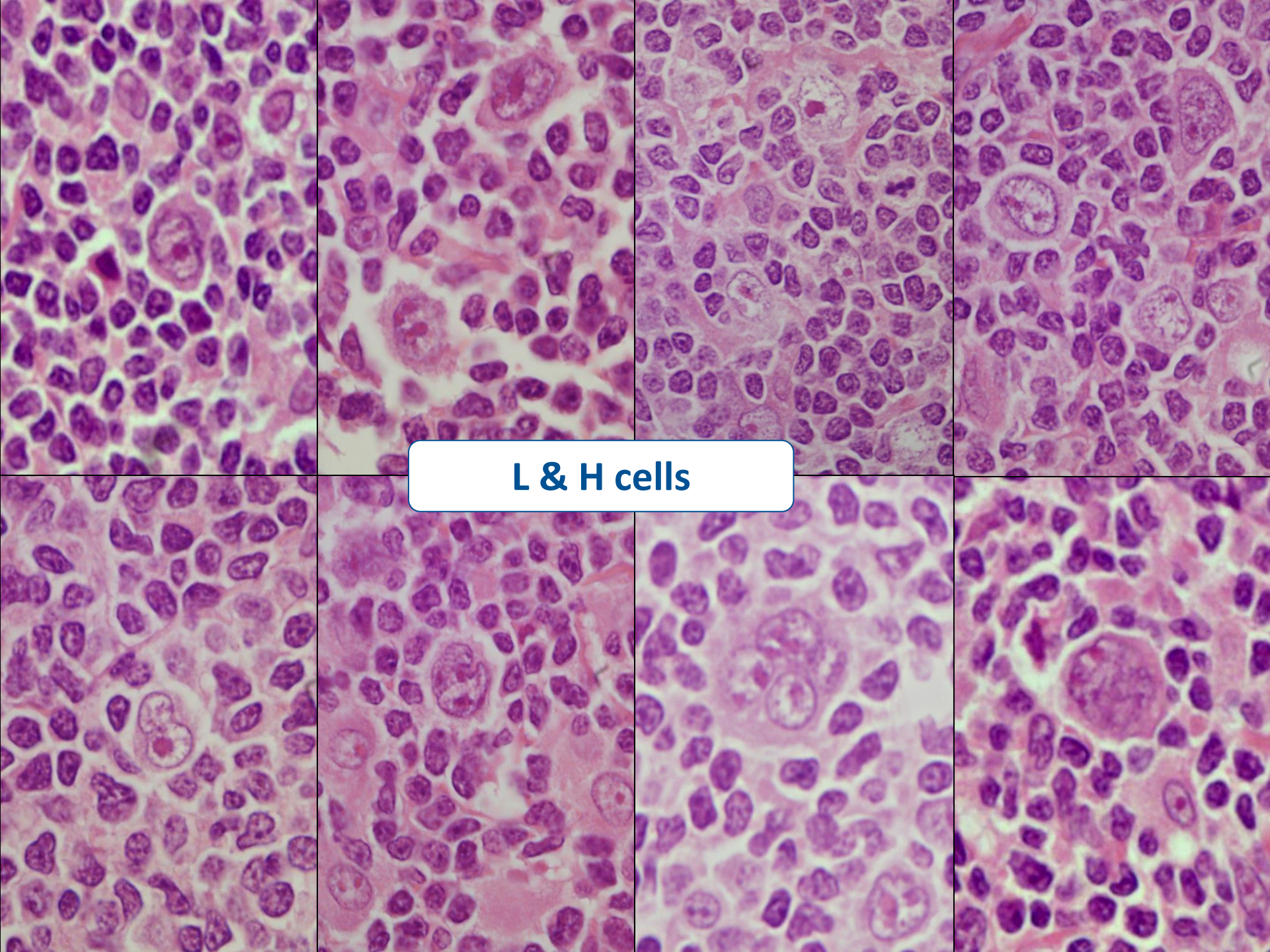


Lymph node HE, 10 ×



Lymph node HE, 40 ×





L & H cells

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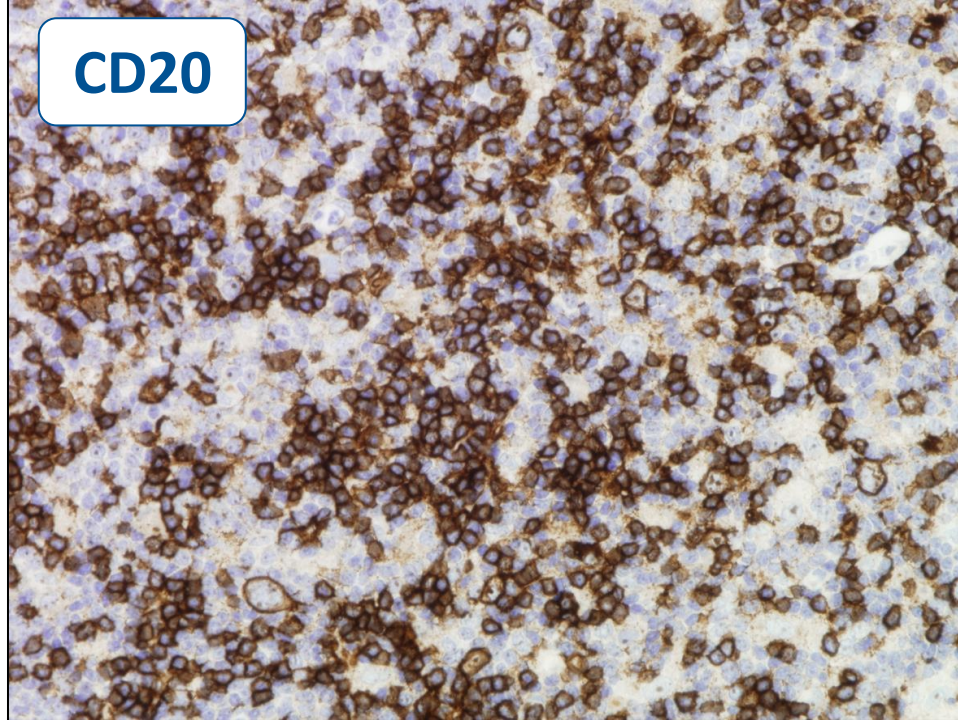
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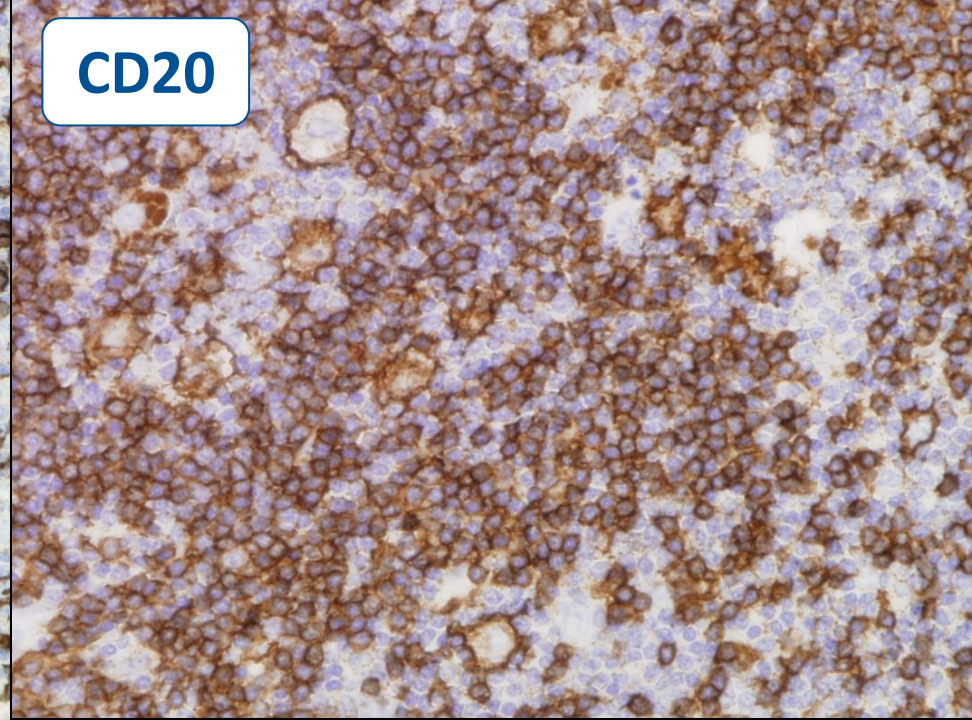
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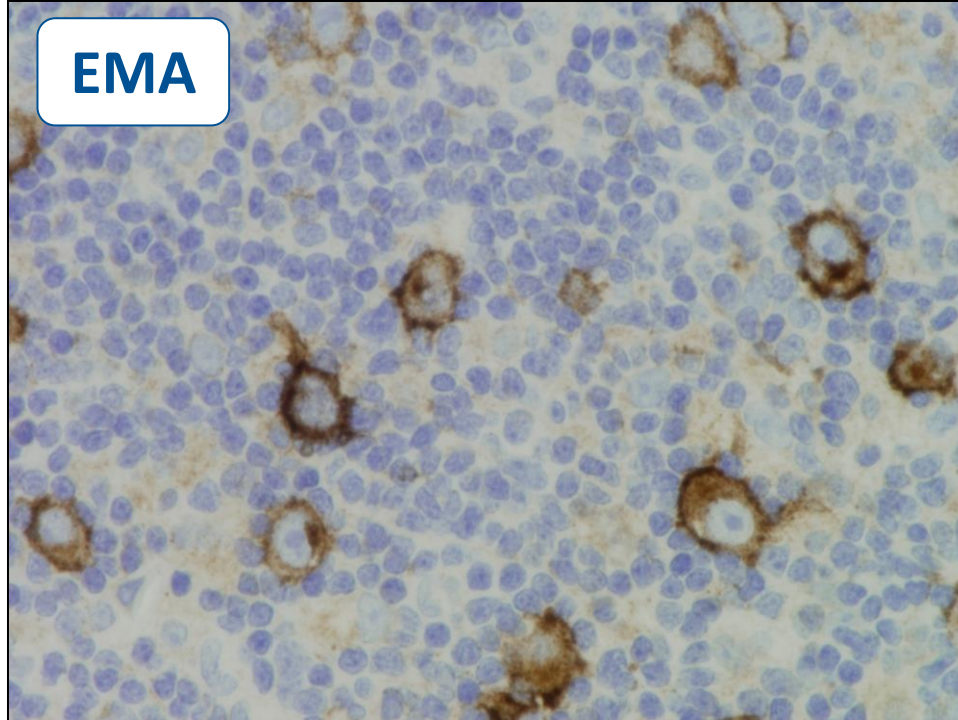
**CD20**



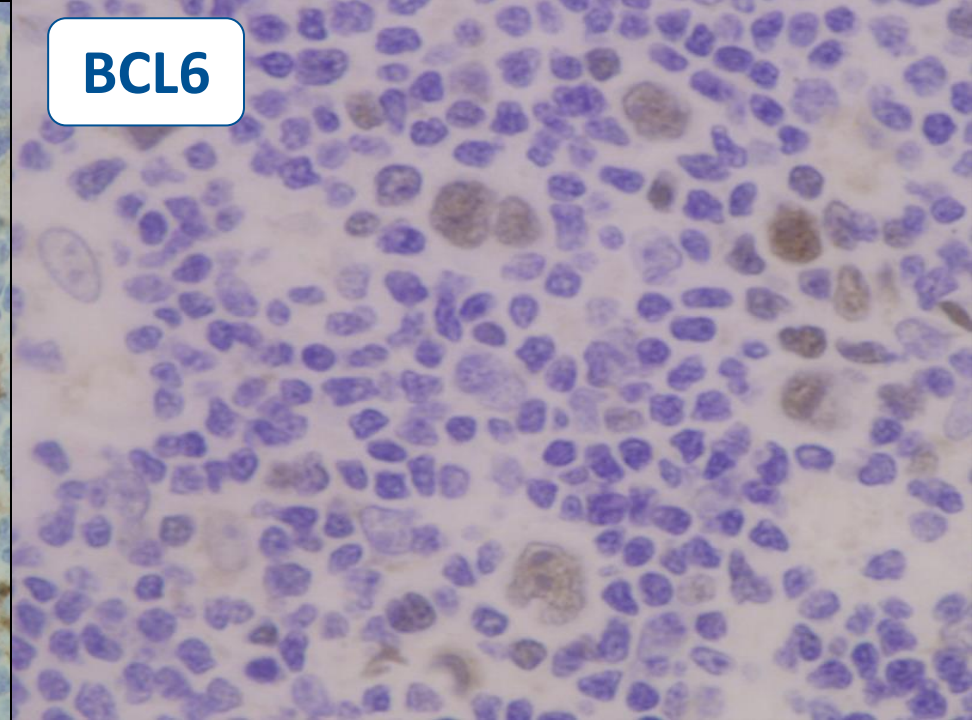
**CD20**

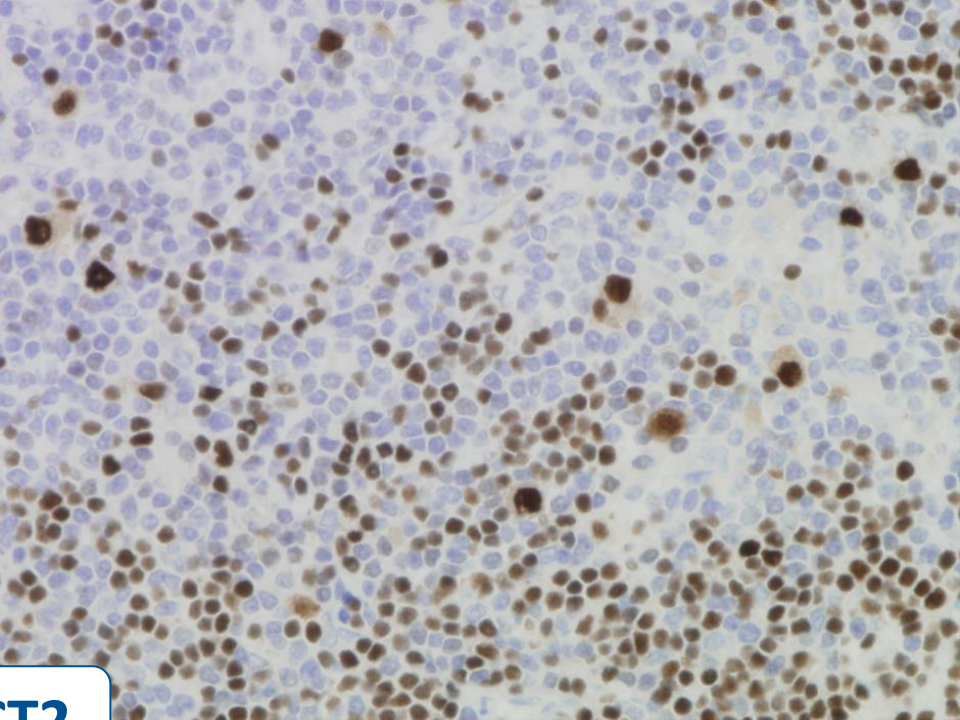
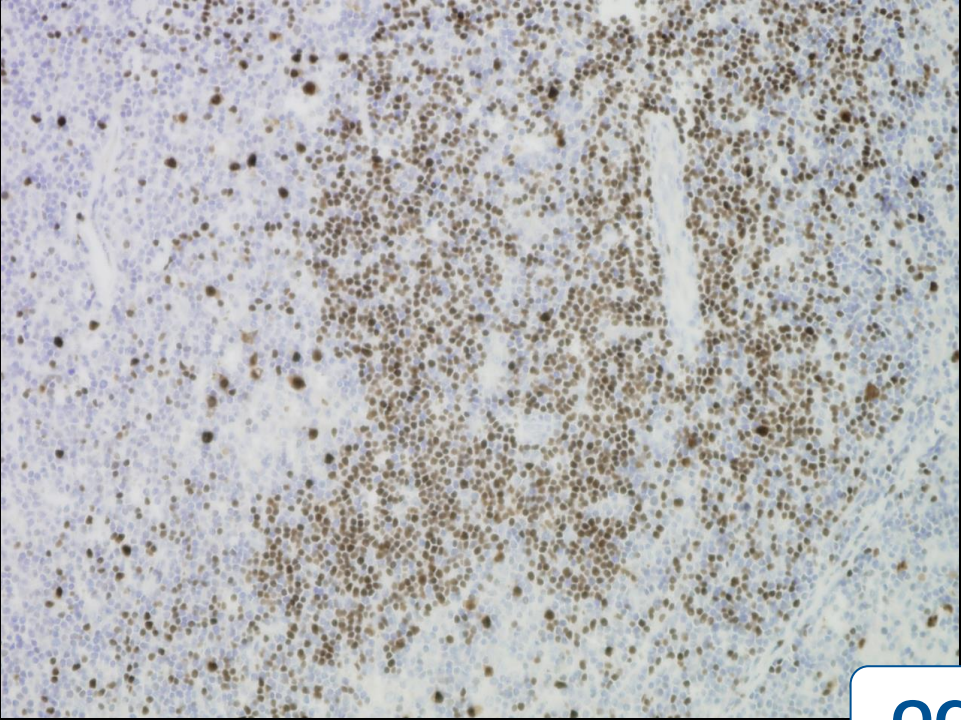


**EMA**

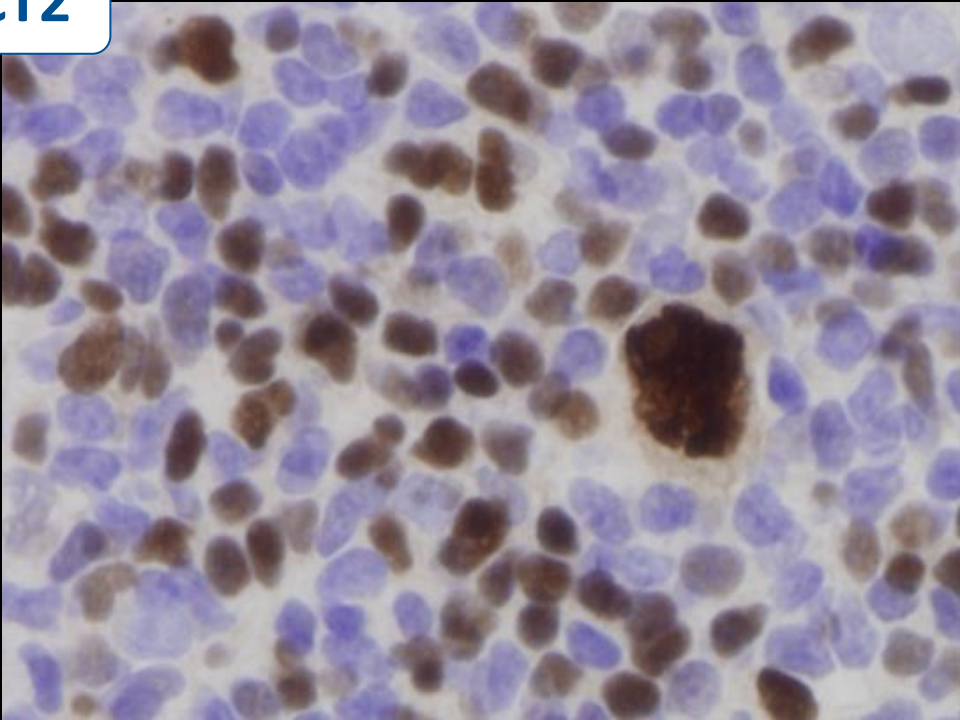
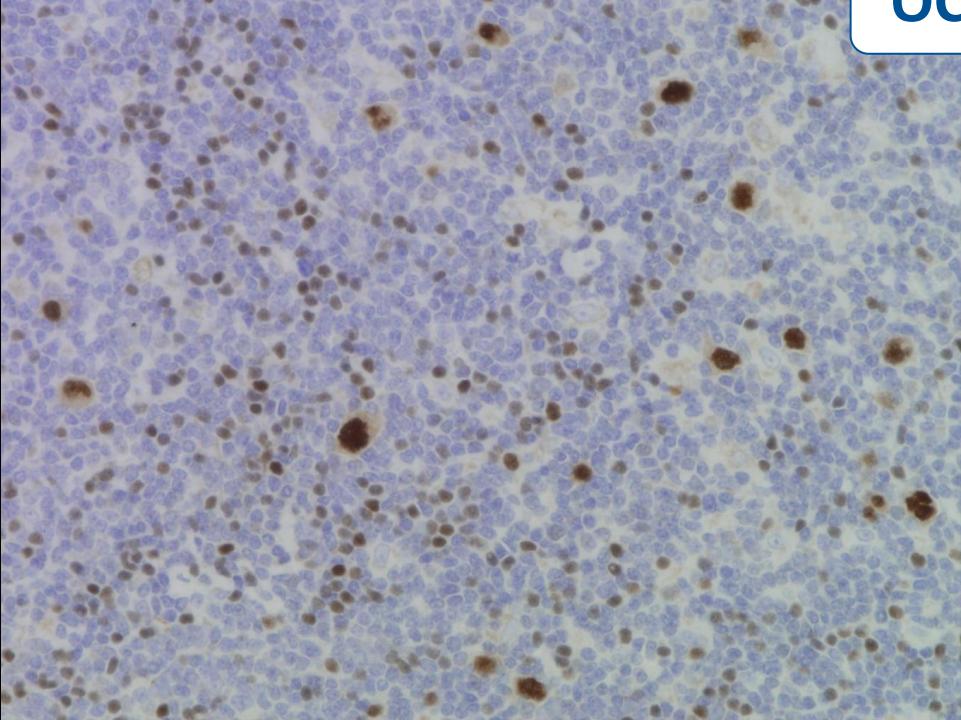


**BCL6**

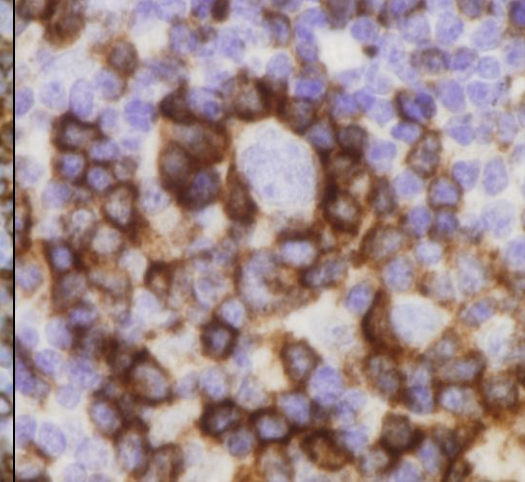
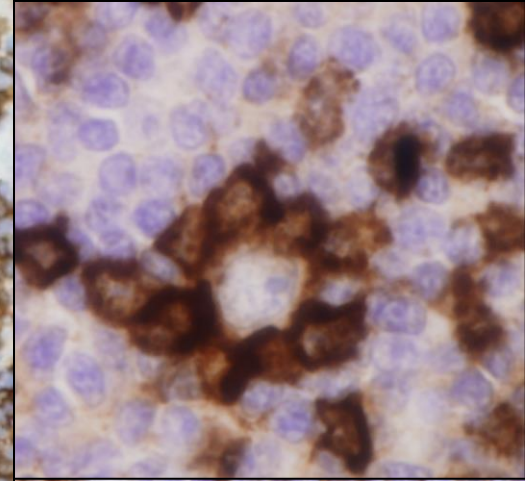
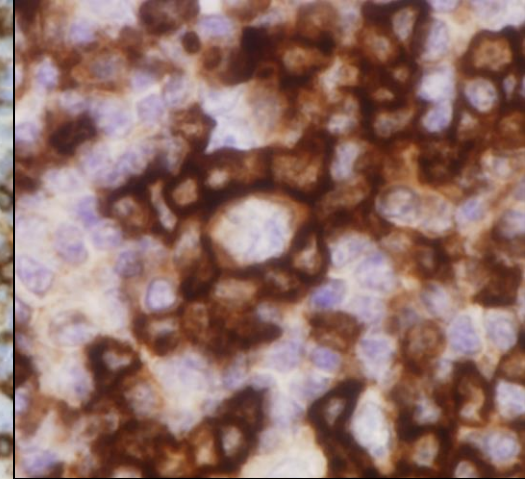
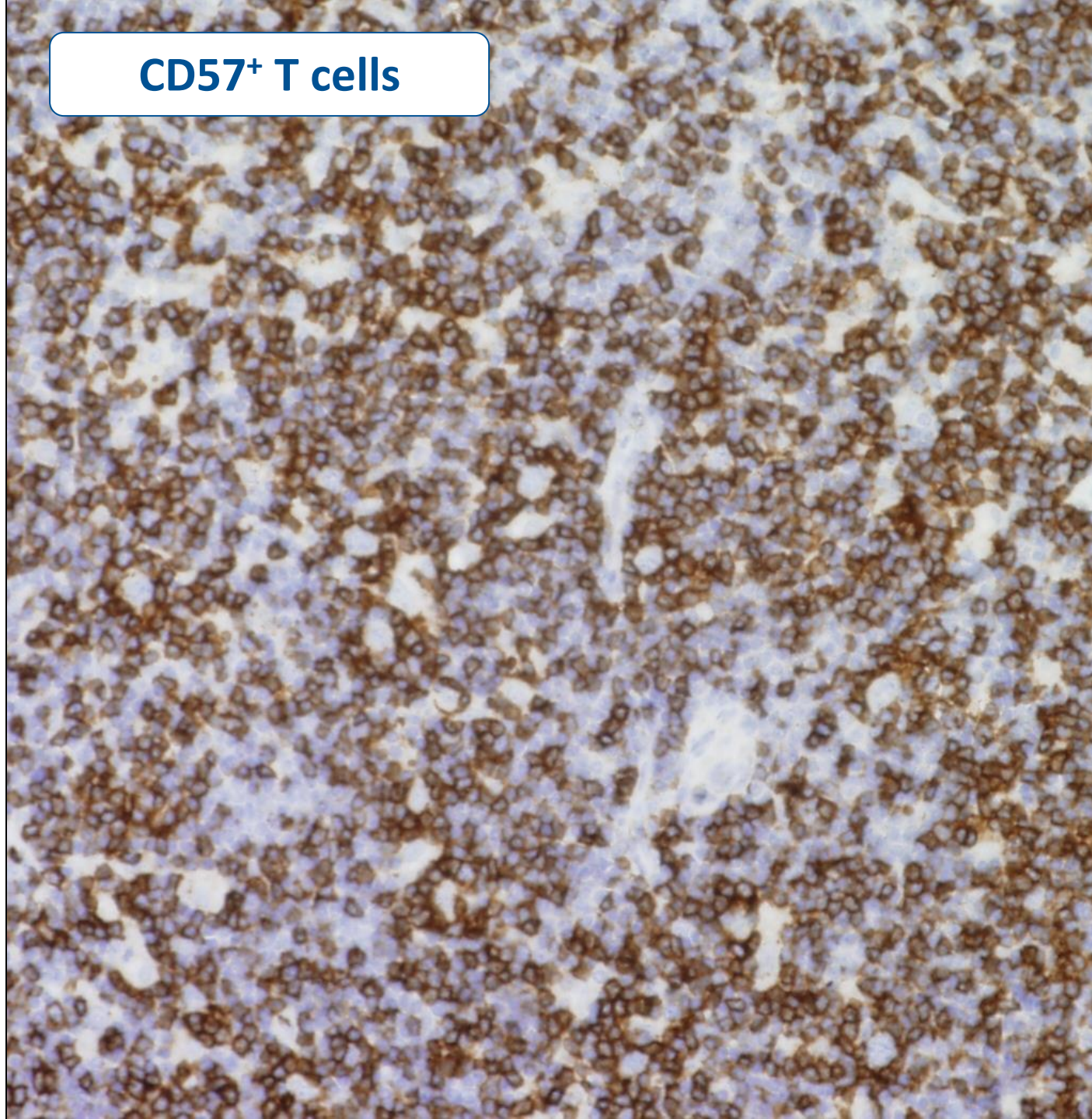




OCT2



**CD57<sup>+</sup> T cells**



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# | Discussion 1

- Reed–Sternberg cells can be found in:
  - Benign conditions (infectious mononucleosis)
  - B-cell lymphoma (follicular lymphoma, marginal zone lymphoma, CLL)
  - T-cell lymphoma (angioimmunoblastic and TFH lymphomas)
  - Other neoplastic conditions



# | Discussion 2

- Essential tools for Hodgkin lymphoma diagnosis:
  - Clinical data
  - High-quality morphology and IHC/ISH for CD30, PAX5, OCT2, PD-1, EBV/LMP, PD-L1
- Differential with other B-cell and T-cell lymphomas may require IgH/TCR and NGS mutational data



## Evolution in the definition and diagnosis of the Hodgkin lymphomas and related entities

Thomas A. Tousseyn<sup>1,2</sup> · Rebecca L. King<sup>3</sup> · Falko Fend<sup>4</sup> · Andrew L. Feldman<sup>3</sup> · Pierre Brousset<sup>5</sup> · Elaine S. Jaffe<sup>6</sup>

**Table 1** Hodgkin lymphoma and related entities: changes in the 2022 ICC [2], compared to the 2016 revision of the WHO classification of haematopoietic and lymphoid tissues [1]

2016 WHO classification	2022 ICC classification	Comments
<i>Hodgkin lymphomas</i>	<i>Hodgkin lymphomas</i>	
Classic Hodgkin lymphoma	Classic Hodgkin lymphoma	- No major changes - TME and molecular landscape better understood
Nodular sclerosis classic Hodgkin lymphoma	Nodular sclerosis classic Hodgkin lymphoma	- No major changes
Lymphocyte-rich classic Hodgkin lymphoma	Lymphocyte-rich classic Hodgkin lymphoma	- No major changes
Mixed cellularity classic Hodgkin lymphoma	Mixed cellularity classic Hodgkin lymphoma	- No major changes - EBV + subtype to be distinguished from EBV + DLBCL
Lymphocyte-depleted classic Hodgkin lymphoma	Lymphocyte-depleted classic Hodgkin lymphoma	- No major changes
Nodular lymphocyte-predominant Hodgkin lymphoma		- No longer considered a Hodgkin lymphoma
<i>Mature B cell neoplasms</i>	<i>Mature B cell neoplasms</i>	
	Nodular lymphocyte predominant B cell lymphoma*	- Change in nomenclature - Introduction of grading system (G1-G2) - Antigen-driven IgD + subgroup
T cell/histiocyte-rich large B cell lymphoma	T cell/histiocyte rich large B cell lymphoma	- Close relationship to NLPBL
B cell lymphoma, unclassifiable, with features intermediate between DLBCL and classic Hodgkin lymphoma	Mediastinal gray zone lymphoma*	- Change in nomenclature - Molecular landscape better understood - Refined histopathological criteria - Excluding extra-mediastinal cases - EBER positivity favors alternate diagnosis

\*Nomenclature changes from the 2016 WHO nomenclature

# | References

- Hartmann S, et al. Tumour cell characteristics and microenvironment composition correspond to clinical presentation in newly diagnosed nodular lymphocyte-predominant Hodgkin lymphoma. *Br J Haematol.* 2022; 199: 382-391
- Nam-Cha SH, et al. PD-1, a follicular T-cell marker useful for recognizing nodular lymphocyte-predominant Hodgkin lymphoma. *Am J Surg Pathol.* 2008; 32: 1252-1257
- Panayi C, et al. Microenvironmental immune cell alterations across the spectrum of nodular lymphocyte predominant Hodgkin lymphoma and T- cell/histiocyte-rich large B-cell lymphoma. *Front Oncol.* 2023; 13: 1267604
- Tousseyn TA, et al. Evolution in the definition and diagnosis of the Hodgkin lymphomas and related entities. *Virchows Arch.* 2023; 482: 207-226