

Histopathological classification of lymphomas in canine and feline species



Roser Martí Pujadas
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- Lymphomas are the most common neoplasia in dogs and cats
 - Many classification systems have been set up for lymphomas along the history
 - The World Health Organization (WHO) system is the one used nowadays to classify animal's lymphomas
- Objective:** Histopathological classification of clinical cases diagnosed as lymphomas using the WHO system

Classification system

Cell size

Small: Nuclei = diameter 1 Red blood cell (RBC)

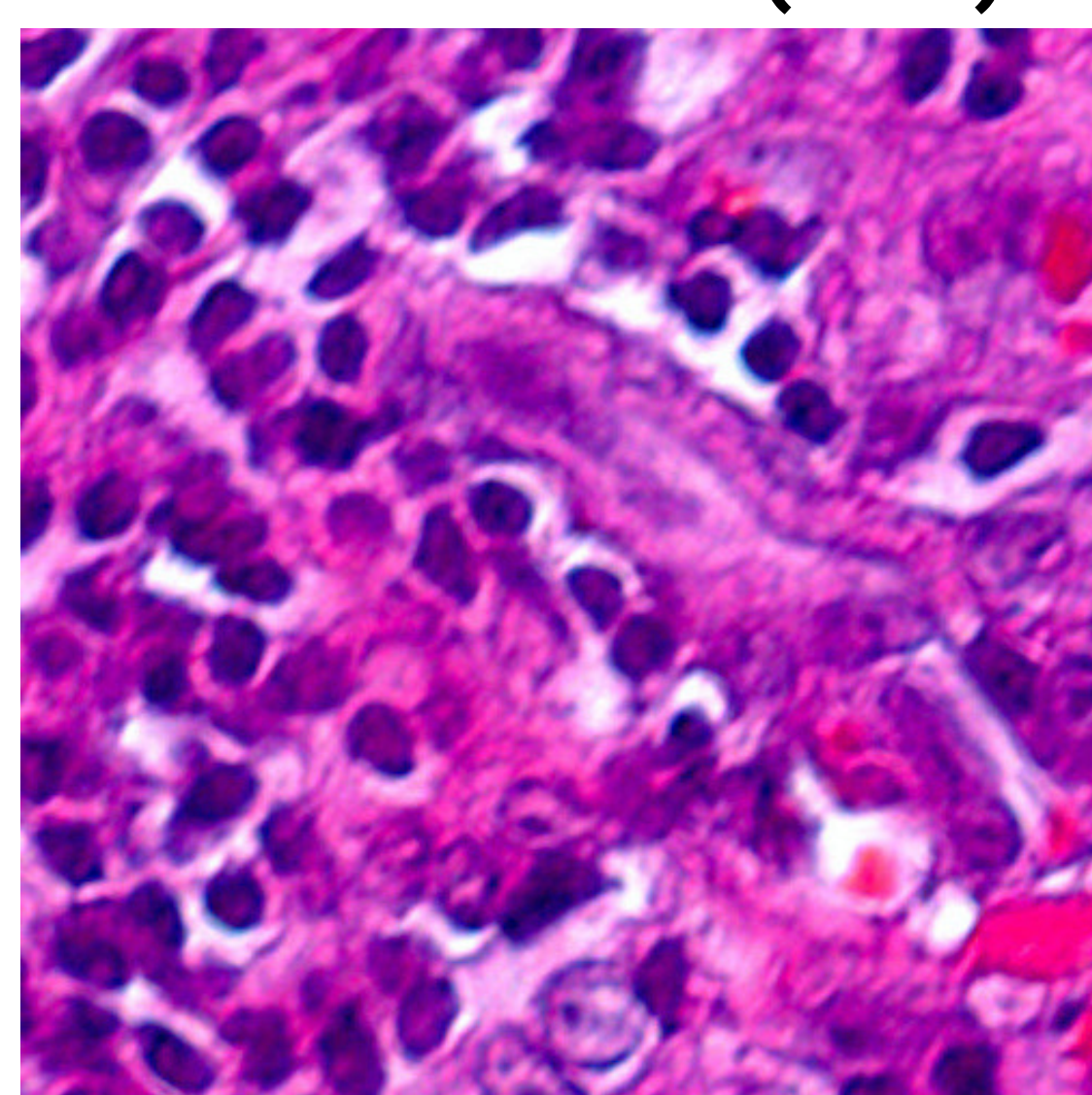


Figure 1. Small cells of a cat's lymphoma

Intermediate: Nuclei = diameter 1.5 RBC

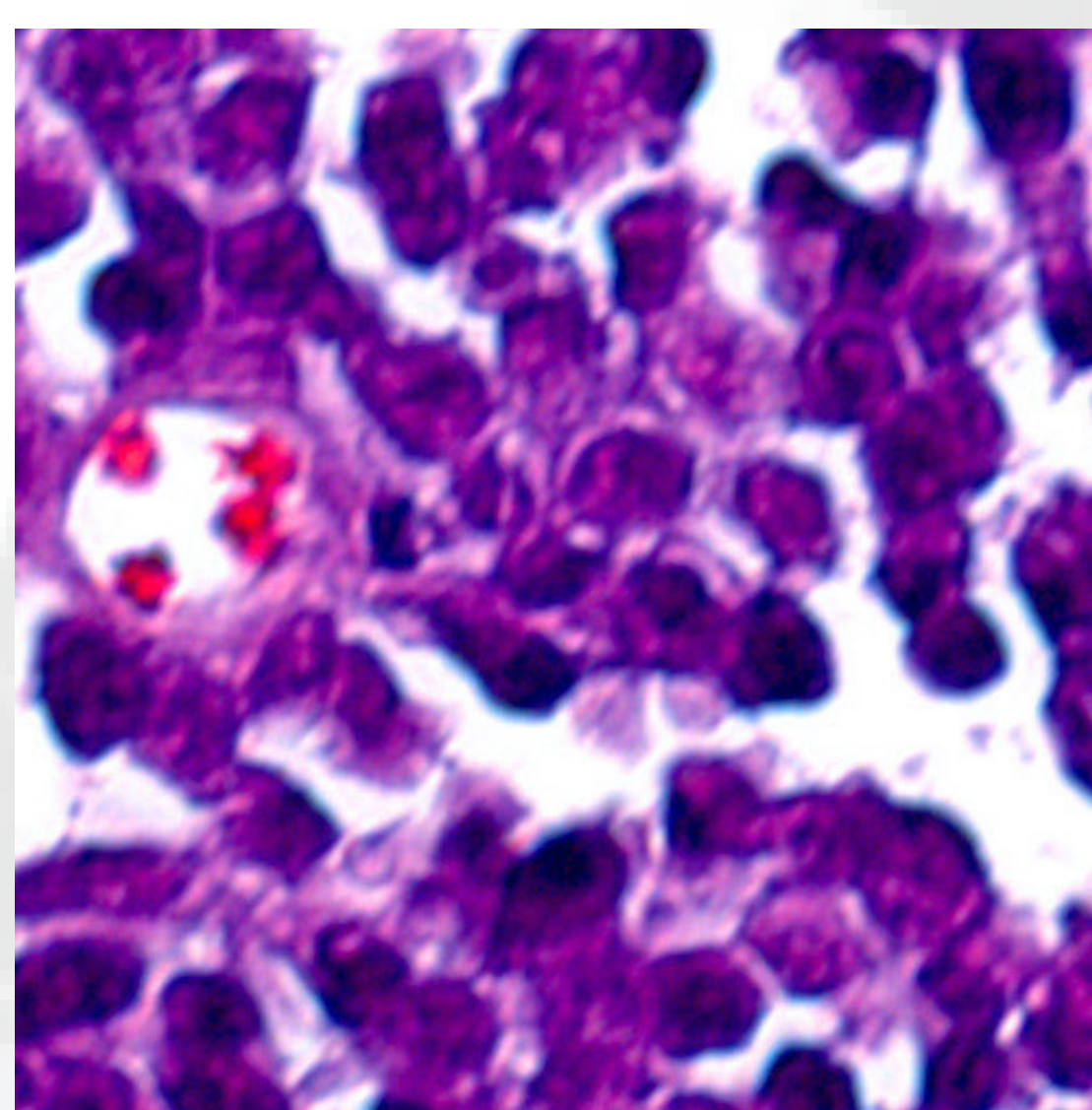


Figure 2. Intermediate cells of a cat's lymphoma

Large: Nuclei = diameter 2-2.5 RBC

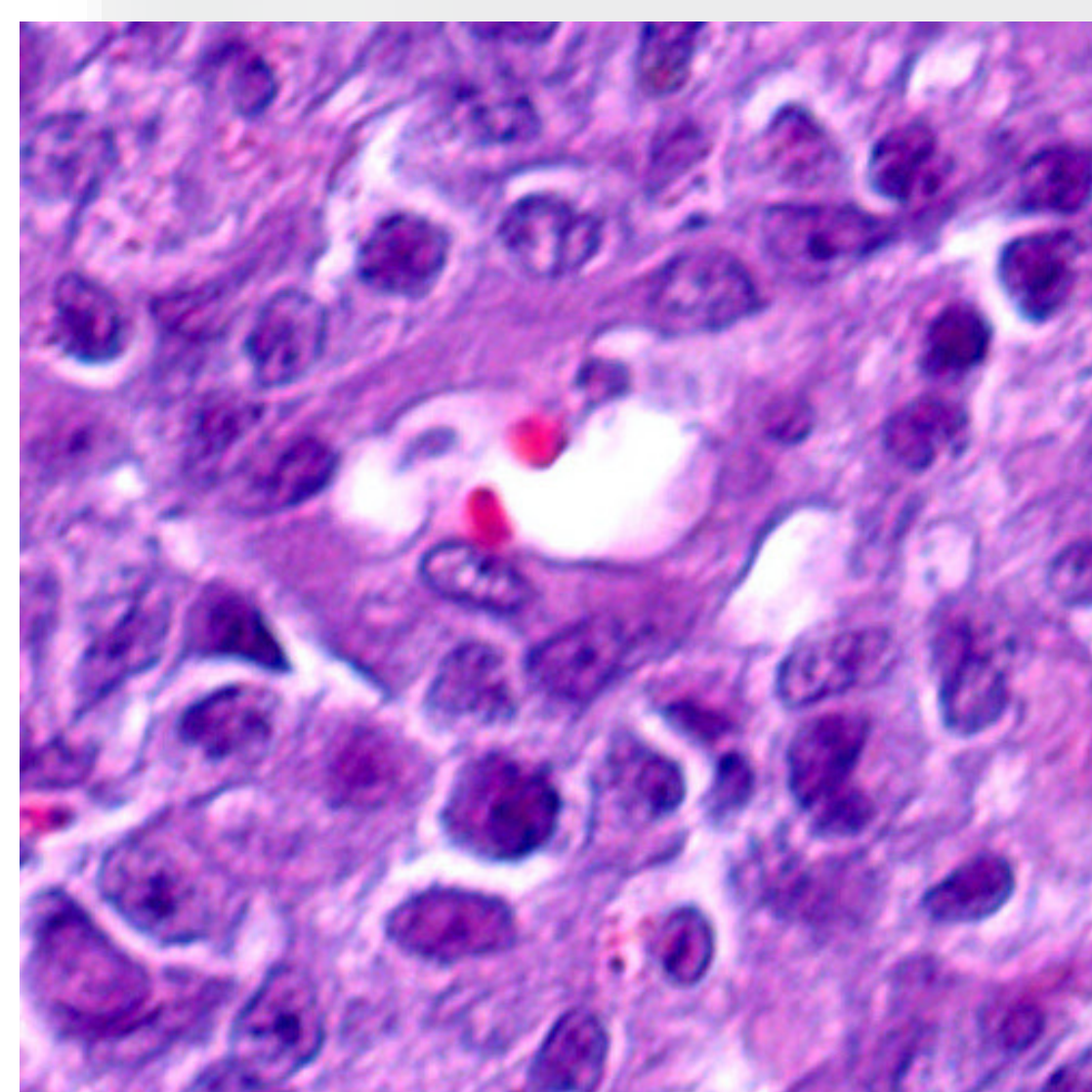


Figure 3. Large cells of a cat's lymphoma

Mitotic index

Indolent: 0-1 mitoses/40X field

Low: 2-5 mitoses/40X field

Mid: 6-10 mitoses/40X field

High: >10 mitoses/40X field

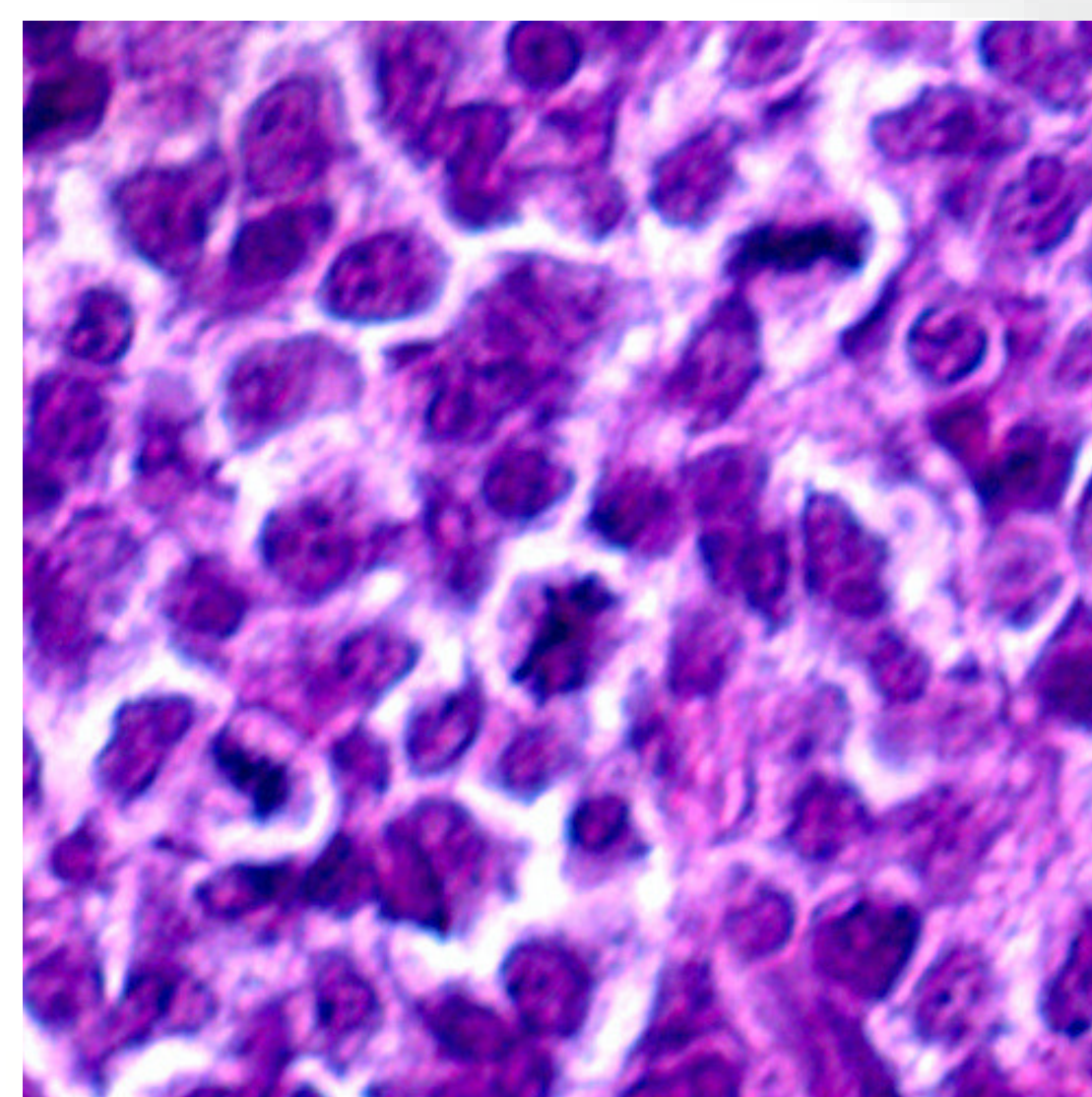


Figure 4. Three mitosis in a 40x field

Immunophenotype

B-cell (marcador CD20)

T-cell (marcador CD3)

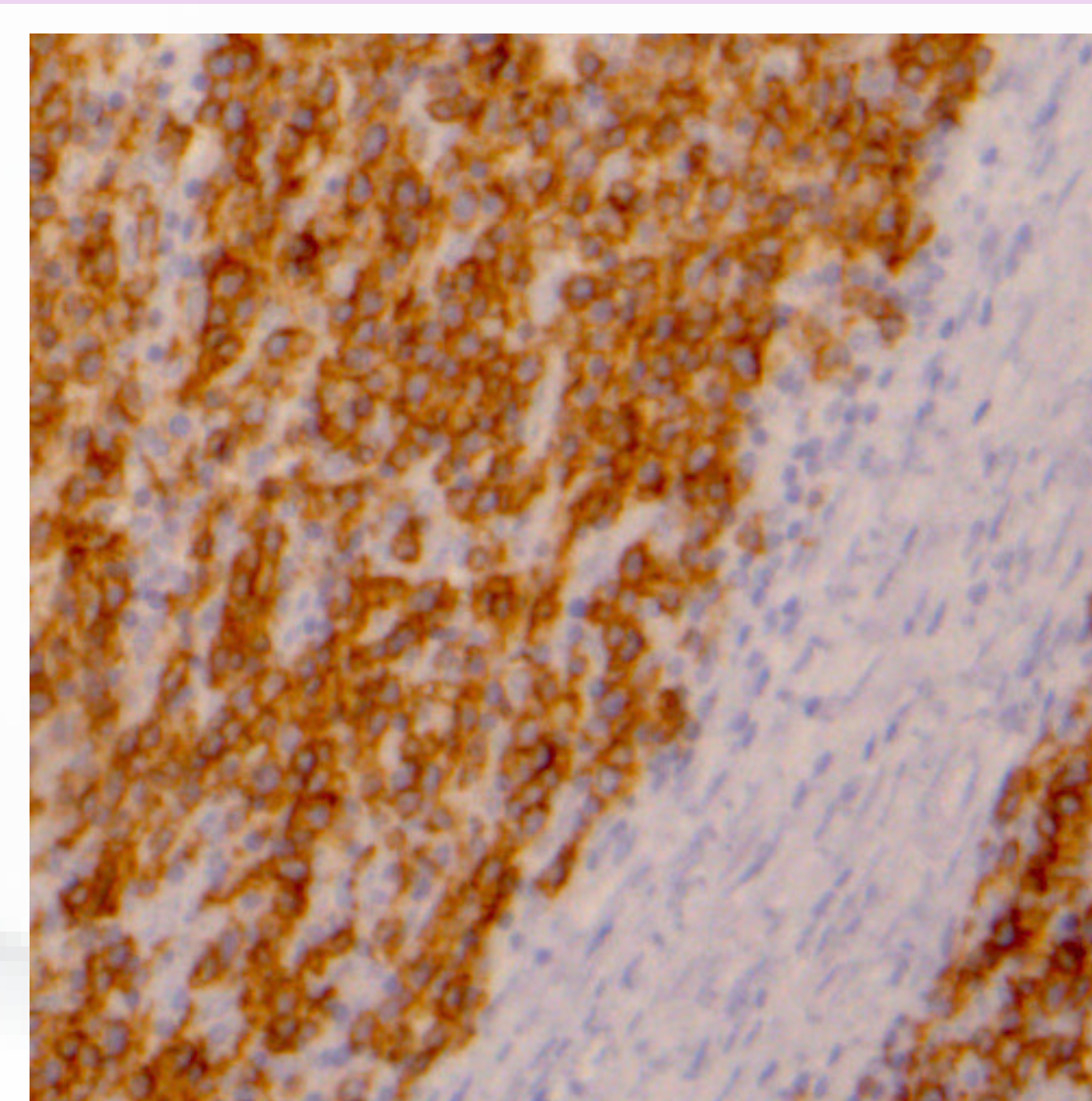


Figure 5. Immunohistochemistry under microscope

WHO classification

B phenotype

B-cell neoplasms

Hodgkin-like lymphoma

Precursor B-cell neoplasms

B-lymphoblastic lymphoma (LBL)

Mature (peripheral) B-cell neoplasms

Small lymphocytic B-cell lymphoma

Diffuse large B-cell lymphoma (DLBCL)

Follicular B-cell lymphoma

Follicular lymphoma (FL)

Marginal zone B-cell lymphoma (MZL)

Mantle cell lymphoma (MCL)

Burkitt-like lymphoma (BKL)

T phenotype

Precursor T-cell neoplasms

T-lymphoblastic lymphoma

Mature (peripheral) T-cell neoplasms

Nodal T-cell lymphoma

T-zone lymphoma (TZL)

Peripheral T-cell lymphoma, unspecified (PTCL)

Anaplastic large T-cell lymphoma (ALTCL)

Angioimmunoblastic T-cell lymphoma (AITL)

Enteropathy-associated T-cell lymphoma (EATL)

Extranodal T-cell lymphoma

Hepatosplenic T-cell lymphoma (HS-TCL)

Hepatocytotropic T-cell lymphoma (HC-TCL)

Cutaneous T-cell lymphoma

Cutaneous epitheliotropic T-cell lymphoma

Mycosis fungoides (MF)

Pagetoid reticulosis (PR)

Cutaneous non-epitheliotropic T-cell lymphoma

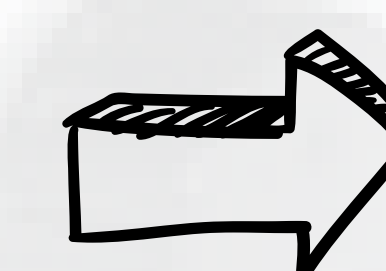
Subcutaneous "panniculitis-like" T-cell lymphoma

Anaplastic large T-cell lymphoma

Figure 6. Adaptation of WHO classification for this study

Conclusion:

WHO classification is difficult to apply



Subjectivity of parameters



Most frequent location	Gastrointestinal 57%	Gastrointestinal 25% Lymphnode 25%
Most frequent lymphoma type	Enteropathy-associated T-cell lymphoma 45%	—

Figure 7. Most frequent location and most frequent lymphoma type found in cats and dogs