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Classificação citológica dos linfomas

Fabrizio Grandi
M.V. Patologista
Diretor Científico Associação Brasileira de Patologia Veterinária, 2020-2021 (ABPV)
Mestre e Doutor em Patologia
Professor e coordenador VetSchool São Paulo
www.patologiadrgrandi.com.br

Evolução dos sistemas de classificação humana e veterinário

- Gall & Mallory (1942)
- Rappaport (1966)
- NCI – Working Formulation for Clinical Usage – Non-Hodgkin´s Lymphoma Classification Project (1982) – EUA
- Kiel e Kiel atualizada
- REAL (1994)
- WHO/REAL

Box 7.1 Summary of the Revised European–American Lymphoma (REAL) classification of lymphoid neoplasms adopted by the World Health Organization as applied for use in animals

B-cell neoplasms
Precursor B-cell neoplasms
- Lymphoblastic leukemia/lymphoma

Mature (peripheral) B-cell neoplasms
- Chronic lymphocytic leukemia/small lymphocytic lymphoma
- Prolymphocytic leukemia
- Lymphoplasmacytic lymphoma
- Plasmablastic lymphoma
- Mantle cell lymphoma (MCL)
- Follicular lymphoma
- Diffuse large B-cell lymphoma (DLBLC)[a]
  - Subtypes: T-cell-rich large B-cell; primary mediastinal (thymic)
- Angiocentric B-cell lymphoma (lymphomatoid granulomatous)
- Marginal zone lymphoma (MZL)[a]
  - Nodal, splenic, extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue type (MALT)

Burkitt's lymphoma/Burkitt's cell leukemia
Provisional entity: high-grade B-cell lymphoma Burkitt's-like
Plasma cell myeloma
Plasmacytoma

Meuten DJ. Tumors in domestic animals. WileyBlackwell, 2017

T-cell and putative NK-cell neoplasms
Precursor T-cell neoplasm
- Lymphoblastic lymphoma (LBL)/leukemia

Mature (peripheral) T-cell and NK-cell neoplasms
- Chronic lymphocytic leukemia (CLL)/small cell lymphoma (SLL)
- Prolymphocytic leukemia
- Large granular lymphocytic (LGL) leukemia/lymphoma
- T-zone lymphoma (TZL), nodal[a]
- Intestinal T-cell lymphoma (enteropathy associated)
- Hepatosplenic γδ T-cell lymphoma
- Mycosis fungoides/Sézary syndrome
- Intravascular lymphoma (angiocentric)
- Subcutaneous panniculitis-like T-cell lymphoma
- Angioimmunoblastic T-cell lymphoma
- Aggressive natural killer (NK)-cell leukemia/lymphoma
- Adult T-cell lymphoma/leukemia
- Anaplastic large cell lymphoma; cutaneous and systemic
- Peripheral T-cell lymphoma not otherwise specified (PTCL-NOS)[a,b]

[a] These five tumors account for approximately 80% of canine lymphomas.
[b] Peripheral T-cell lymphomas not otherwise specified (PTNOS) are those that are not presently specified to a specific subtype.
T-zone lymphoma is not part of the WHO classification for humans but it is listed here because it is one of the more common lymphomas in dogs. The most common feline lymphomas are enteric, large B-cell (includes T-cell-rich large B-cell lymphoma (TCRLBCL)), nasal, mediastinal, and Burkitt's in some studies. The most common equine lymphomas are TCRLBCL cutaneous, large B-cell, and enteric.

Meuten DJ. Tumors in domestic animals. WileyBlackwell, 2017

Table 8.2. **Subtypes of cells that may be identified in cytologically normal lymph node samples.** Fonte: Barger AM e col. Small Animal Cytological Diagnosis, 2016.

Cell subtype	% expected	Cytologic description	Origin
Small lymphocytes	>80%	Small lymphocytes; nuclear diameter 7–10 µm; scarce rim of basophilic cytoplasm; round or slightly indented nucleus; clumped chromatin; no visible nucleolus	B or T lymphocytes
Centrocytes	5–10%	Small to intermediate-sized lymphocytes; nuclear diameter 10–14 µm; moderate amount of clear cytoplasm; cleaved nucleus; dense, unclumped chromatin; no visible nucleolus	Follicular B cells
Centroblasts	1–5%	Intermediate to large lymphocytes; nuclear diameter 14–21 µm; moderate amount of deeply basophilic cytoplasm; occasional cytoplasmic vacuoles; eccentric, round nucleus; decondensed, finely stippled chromatin; multiple, often peripheral, nucleoli	Follicular B cells
Immunoblasts	1–5%	Large lymphocytes; nuclear diameter up to 28 µm; abundant, deeply basophilic cytoplasm; occasional cytoplasmic vacuoles; round nucleus; finely stippled chromatin; one central prominent nucleolus	B or T lymphocytes
Lymphoblasts	<1%	Small lymphoid precursors; nuclear diameter 7–14 µm; scarce, clear cytoplasm; irregular nuclear margins; fine chromatin; poorly distinguishable nucleoli	B or T lymphocytes
Medium-sized macronucleolated cells	<1% in dogs. Absent in cats	Small to intermediate lymphocytes; nuclear diameter 10–14 µm; abundant, deeply basophilic cytoplasm; round nucleus; single, centrally located, prominent nucleolus	Marginal zone B cells (Fournel-Fleury *et al.*, 1997)
Plasma cells	<2%	Mature lymphocytes; nuclear diameter 7–14 µm; abundant deeply basophilic cytoplasm; often contains a perinuclear clear halo (Golgi zone); eccentric, round nucleus; clumped	Medullary cord B
Flame cells	<1%	Plasma cells with brightly eosinophilic cytoplasmic borders	Medullary cord B cells
Mott cells	<1%	Plasma cells containing several clear, distinct cytoplasmic vacuoles (Russell bodies)	Medullary cord B cells
Dendritic cells	<1%	Poorly defined cytoplasm with thin prolongations; one or more oval nuclei	Follicular histiocytes
Interdigitating cells	<1%	Abundant, pale cytoplasm with poorly defined margins; convoluted to twisted nucleus; pale chromatin	Paracortical histiocytes
Macrophages	<2%	Abundant, pale cytoplasm; often phagocytic with tingible bodies; oval to convoluted nucleus; may form multinucleated giant cells if reactive	Paracortical and medullary cord histiocytes

Classificação de Kiel

- Dois grupos prognósticos
  - Baixo grau ("cítico" ou "citóide")
  - Alto grau ("blástico")

- Kiel adaptada por Fournel-Fleury *et al.*, 1994, 1997
  - Determinação do tamanho dos linfócitos (pequenos, intermediários ou grandes)
  - Estimar o índice mitótico (em 5 campos de 500X)
  - Identificar os tipos de linfócitos (base morfológica apenas)

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- Estimar em 5 campos de 500X (Fournel-Fleury *et al.* 1994, 1997)
- Baixo: 0-1 mitoses
- Moderado: 2-4 mitoses
- Alto: ≥5 mitoses

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- Alto grau
  - IM alto ou intermediário + células grandes
- Baixo grau
  - Baixo IM + células pequenas

- Células intermediárias?

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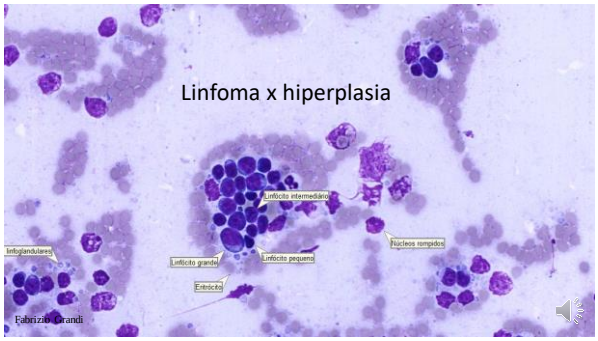

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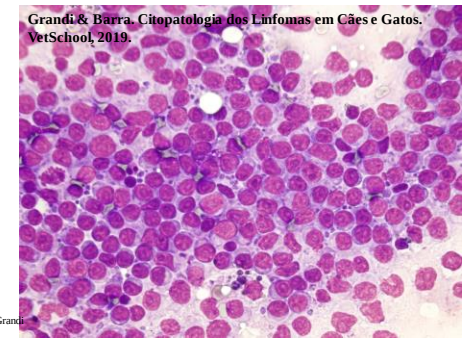

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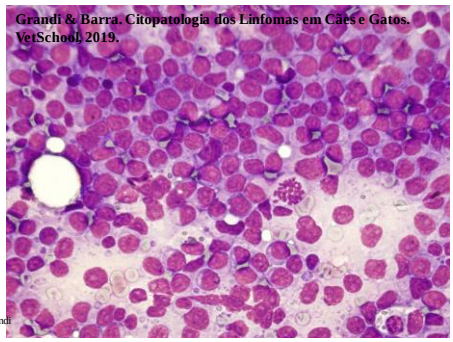

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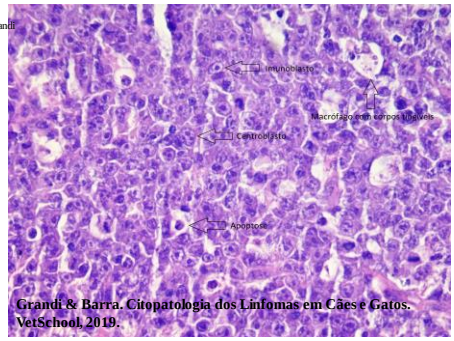

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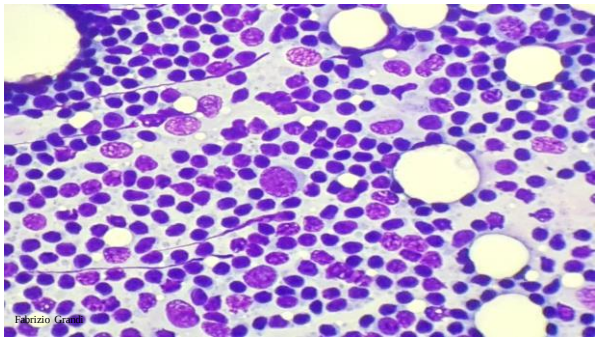

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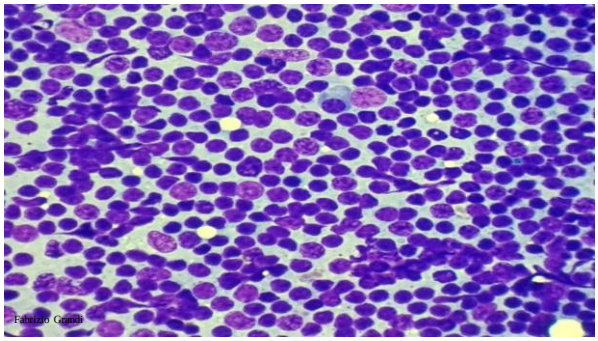

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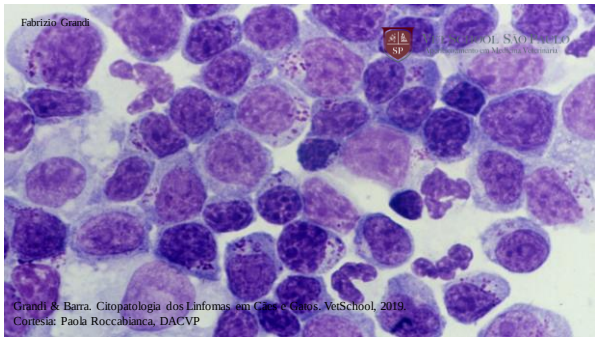

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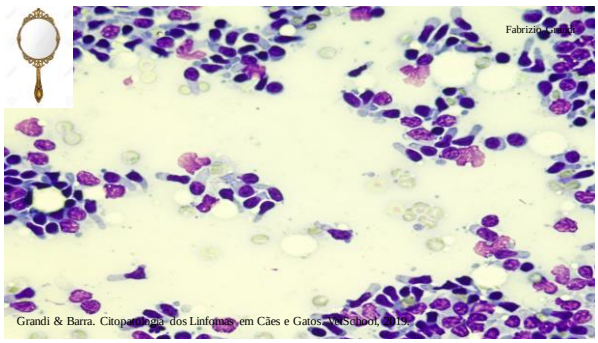
Cortesia: Paola Roccabianca, DACVP



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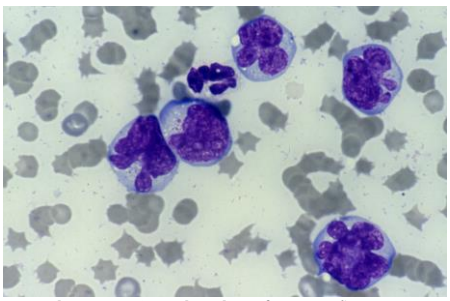

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