

INDOLENT CANINE LYMPHOMA: CLASSIFICATION AND SIGNIFICANCE

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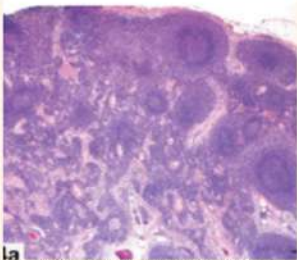
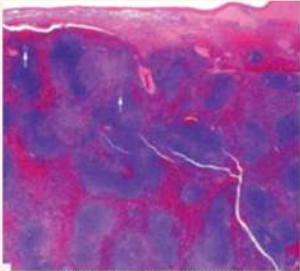
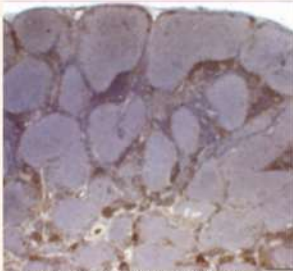
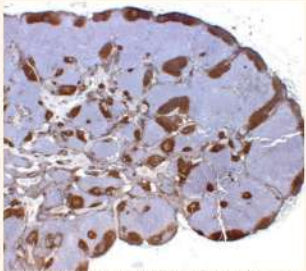
INTRODUCTION AND OBJECTIVES

Canine lymphoma stands out as the most common hematopoietic neoplasm in dogs, and low-grade lymphomas represent approximately 5.3% to 29%, many of them considered indolent. The primary objective is to develop a comprehensive classification of all indolent lymphomas, highlighting the distinctive features of each subtype. This approach is based on the application of various techniques, such as cytology, histology, immunophenotyping, and clonality analysis.

DEFINITION OF INDOLENT LYMPHOMA

Lymphoma is an anomalous clonal expansion of lymphocytes, both T and B cells. Indolent lymphomas exhibit the following characteristics:

- Low mitotic rate
- Nodular architectural pattern
- Small or intermediate cell size
- Indolent clinical course: mild clinical signs
- Most do not respond to treatment.
- Longer survivals

Lymphoma	MZL	MCL (Spleen)	FL (Lymph node)	TZL (Lymph node)
Prevalence % of total lymphoma	nodalMZL : 6-10% splenicMZL: 0,2-1%	0,7-1,8%	<1%	10-12%
Cytology	Nucleus: <u>irregular*</u> and prominent. Peripheral chromatin. Central nucleolus. Abundant pale cytoplasm. *sMZL: <u>round</u> nucleus.	Deeply stained cells. Round nucleus. Condensed chromatin. Discrete or without nucleolus. Scant cytoplasm.	Centrocytes predominance: Indented nucleus. Pale and disperse chromatin. Small nucleolus. Pale cytoplasm. Few centroblasts	Small nucleus with deep indentations. Some: central nucleolus. Granular chromatin. Pale cytoplasm: “ <i>hand-mirror cell</i> ”
Histology: follicles	 <small>Figure 1: Canine MZL lymph node. (Valli et al., 2006)</small>	 <small>Figure 2: Canine MCL spleen (Valli et al., 2006b)</small>	 <small>Figure 3: Canine FL lymph node, CD3+. (Valli et al., 2011)</small>	 <small>Figure 4: canine TZL lymph node, CD79a+ (Valli et al., 2011)</small>
Immunophenotype	CD20+ CD21+ CD45+ CD79a MHCII+ PAX 5			• CD3 + • CD4+/- and CD8+/- • CD5+ • High levels: CD21, • CD45- MHC II and CD25
	• CD5+ • MUM-1+ • Bcl-2+ • (MCL-1)	• CD5+ • Cyclin D- • Bcl-2 • (MUM-1+)	• Bcl-2 +++ • CD19+ • CD5-	
Survival	sMZL: <1800 days (60 months) nMZL: -259 days (8,6 months)/ 636 days (21,2 months)	502 days (16,7 months)	• 47/200 days (1,5-6,6 months) • 630 days (21 months)	630- 990 days (21-33 months)

There is a lack of consensus regarding other subtypes of lymphomas with lower prevalence that exhibit characteristics suggestive of indolent behavior: Lymphoplasmacytic lymphoma, Non-epitheliotropic cutaneous lymphomas and Chronic lymphocytic leukemia.

CONCLUSIONS

- The classification of indolent lymphoma is challenging due to the lack of consensus and the diversity in its presentation.
- We highlight the need for research to define specific biomarkers.
- Transformation into more aggressive forms is an area requiring further exploration.
- Using techniques such as histological examination and immunophenotyping, remains essential for the accurate diagnosis.