



## ULTRASONOGRAPHIC ANALYSIS OF LYMPH NODES IN ONCOLOGICAL PATIENT EVALUATION

Reapresentação do Congresso Online Internacional De Especialidades Veterinária., 1ª edição, de 17/01/2021 a 21/01/2021  
ISBN dos Anais: 978-65-86861-38-9

**COLLIERE; Angela Carolina Ivanski <sup>1</sup>, PRIETO; Wiliam da Silva <sup>2</sup>, PAULA; Carla Gomes <sup>3</sup>, JOJIMA; Flávio Shiguera <sup>4</sup>**

### RESUMO

Diagnostic imaging techniques are extremely important for oncological diagnosis routine, assisting in screening, staging and especially at patient response assessment and at metastasis identification. One of the main routes of metastasis occurs through the lymphatic channels. After detecting an abnormal lymph node and having knowledge about the regions and structures drained by it, it is possible to identify which organ will be or is being affected. At Ultrasonographic examination, one of the main parameters evaluated in the research for malignancy is the lymph node echogenicity, that should be isoechoic or slightly hypoechoic when compared to perinodal fat, whereas neoplastic lymph nodes have an important reduction of the echogenicity. However, this parameter is subjective and nonspecific to determine malignancy. The echotexture is a important parameter to identify lymph node malignancy, whereas there is a significant association between heterogeneity and neoplastic infiltration diagnoses in canine abdominal lymph nodes, in cats this finding tends to be nonspecific. The echo texture varies according to histopathological pattern present, and there are several characteristics that can be visualized, usually when lymph nodes presents a cystic echo pattern or different interlaced tissue patterns, relating to areas of neoplastic cell infiltration and/or necrosis areas. In terms of size and shape, normal lymph nodes are described as thin and elliptical, while neoplastic lymph nodes that present infiltration by tumor cells, neoplastic growth and expansion, have large sizes, rounded shape, curved margins and irregular contour. A quantitative form of evaluating size of lymph nodes is calculating short-to-long axis (SLA) ratio. High rates coming from this ratio reinforce the determination of malignancy, while low values tend to be compatible with inflammatory alterations presence. The cutoff point from this ratio continues to be discussed, some authors define the malignancy cutoff point by considering values above 0.5 and other authors by considering values above 0.7. The doppler analysis of the vascular lymphatic flow demonstrate more accurate distinction between malignant and benign lymphadenopathy. Additionally, a health lymph node has hilar vascular flow pattern. At color Doppler flow mapping, neoplastic lymph nodes can present two types of patterns, initially with infiltration and tumor growth, internal vascular compression occurs, leading to a peripheral vascular flow distribution. However, a intense stimulation of angiogenesis local occurs, which, later, added to the neoplastic inflammatory response, will trigger a mixed pattern. In case of suspected neoplastic invasion, not only the pattern must be evaluated, but also the

<sup>1</sup> Universidade Federal do Paraná, angela.collere@gmail.com

<sup>2</sup> Setor de Ciências Agrárias, willamsp98@gmail.com

<sup>3</sup> Universidade Federal do Paraná, carla3gomespaula@gmail.com

<sup>4</sup> Setor Palotina, fsjojima@gmail.com

Doppler flow indexes, such as resistivity index (RI). The blood difficulty to penetrate the tissues should be considered due to neoplastic invasion, in this cases, consequently, the RI values tend to be higher, at literature the cutoff is being described as RI values above 0.65. The ultrasound is an important tool to evaluate oncological patients due to it is a noninvasive method and because it provides relevant information that will aid in determining treatment and prognosis.

**PALAVRAS-CHAVE:** lymph node, metastasis, lymphatic system, ultrasonography.