

# Unclassified Sarcomas

**J. A. Impellizeri, DVM, DACVIM  
(Oncology), MRCVS**

*Veterinary Oncology Services  
Multiple locations, New York*

## In the Literature

Boerkamp KM, Hellmén E, Willén H, Grinwis GCM, Teske E, Rutteman GR. Unclassified sarcomas: a study to improve classification in a cohort of golden retriever dogs. *J Vet Diagn Invest.* 2016;28(6):623-631.

## FROM THE PAGE ...

Unclassified sarcomas encompass a wide array of subtypes, including fibrosarcoma, myxosarcoma, malignant fibrous histiocytoma, liposarcoma, leiomyosarcoma, rhabdomyosarcoma, hemangiosarcoma, peripheral nerve sheath tumors, synovial cell sarcoma, malignant histiocytosis, hemangiopericytoma, and several others. Management includes staging the patient (eg, tumor location, any other tumor/disease), grading the tumor (ie, low, intermediate, high), and evaluating surgical margin. The latter 2 are determined via histopathologic assessment. With these results, a clinician may assess prognosis and provide therapeutic intervention (eg, surgery, radiation therapy, immunotherapy, electrochemotherapy). In addition, confirming the specific subclassification may allow clinical trial options for owners willing and able to commit to them.

This article strengthens the argument for application of immunohistochemistry and the importance of identifying these subtypes using this laboratory technique. Immunohistochemistry allows for the detection of specific tissue of origin by exploiting the principle of antibodies binding specifically to antigens in cells of a tissue section obtained via biopsy. In this study, the authors evaluated a cohort of golden retrievers diagnosed with unclassified sarcomas and assessed the ability to further define their specific characteristics as a component of clinical management.

If a client is interested in all treatment options, confirmation of sarcoma subtype is imperative. It is important to note that both clinically and within this study, a subset of tumors were not able to be subclassified to delineate the tissue of origin—an important point to be discussed with the client as the cost of immunohistochemistry is usually significant.

## ... TO YOUR PATIENTS

Key pearls to put into practice:

- 1 Subclassification of unclassified sarcomas is critical for clients looking to pursue all therapeutic options and gauge prognosis.
- 2 The request to add immunohistochemistry, an additional cost, can be a difficult conversation with owners after sarcoma biopsy, especially given that subclassification may not be revealed even with this technique.
- 3 Unclassified sarcomas are a subset of malignancy commonly seen in dogs. Using appropriate diagnostics with client education allows the veterinarian to provide the best options.

## Suggested Reading

- Caserto BG. A comparative review of canine and human rhabdomyosarcoma with emphasis on classification and pathogenesis. *Vet Pathol.* 2013;50(5):806-826.
- Kreilmeier T, Sampl S, Deloria AJ, et al. Alternative lengthening of telomeres does exist in various canine sarcomas [published online September 1, 2016]. *Mol Carcinog.* doi:10.1002/mc.22546
- Milovancev M, Hauck M, Keller C, Stranahan LW, Mansoor A, Malarkey DE. Comparative pathology of canine soft tissue sarcomas: possible models of human non-rhabdomyosarcoma soft tissue sarcomas. *J Comp Pathol.* 2015;152(1):22-27.
- Spugnini E, Vincenzi B, Betti G, et al. Surgery and electrochemotherapy of a high-grade soft tissue sarcoma in a dog. *Vet Rec.* 2008;162(6):186-188.