What Is Your Diagnosis?

History

A 6-year-old spayed female Boxer was evaluated for mild intermittent lameness of the left hind limb of 3 months’ duration. The lameness progressively worsened during the month prior to evaluation, and the left stifle joint was moderately distended. The lameness did not resolve after nonsteroidal anti-inflammatory drug treatment.

Physical and orthopedic examinations revealed lameness of the left hind limb and that the left stifle joint was palpably large. Signs of discomfort were detected during flexion of the left stifle joint. Radiographs of the left stifle joint were obtained (Figure 1).

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page.

Figure 1—Lateral (A) and caudocranial (B) radiographic views of the left stifle joint of a 6-year-old Boxer evaluated for progressively worsening lameness of the left hind limb of 3 months’ duration.

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mitoses were detected. Immunohistochemistry was performed to further characterize the origin of the tumor, and results of staining for the mesenchymal marker vimentin were positive. Results of staining for the epithelial markers pancytokeratin and cytokeratin AE1/AE3, smooth muscle actin, CD-18 (a histiocytic marker), and S-100 (a neural tissue marker) were negative. Although synovial sarcomas often contain both spindle cell and epithelialoid components (ie, biphasic), monophasic tumors with only a spindle cell population can develop. Results confirmed a mesenchymal tumor of the stifle joint compatible with synovial sarcoma.

Synovial sarcoma is an uncommon tumor in dogs. Synovial sarcomas are malignant neoplasms that arise from mesenchymal precursor cells outside the synovial membrane. The median age of dogs with this type of tumor is 8 to 9 years, and the stifle and elbow joints are most commonly affected. Histologically, these tumors can be composed of epitheliod or fibroblastic cells and can have 1 (monophasic) or both (biphasic) cell types in various proportions, making definitive diagnosis challenging. Immunohistochemistry has been used to help delineate the presence of antigens to differentiate synovial cell sarcomas from other spindle cell and round cell tumors. More specifically, special stains for cytokeratin, vimentin, smooth muscle actin, CD-18, and others have been evaluated to help define prognostic factors, disease-free intervals, and survival times.

Three months after amputation of the left hind limb, the owner reported that the dog was clinically normal. Six months after amputation, recurrence of the tumor at the amputation site was detected. Histologically, this tissue was identical to that of the original tumor. Further treatment was not pursued.