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Hematogenous Metastasis in Embryonal Rhabdomyosarcoma of Scapular Skeletal Muscle in a Young Dog

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Rhabdomyosarcoma is a malignant neoplasm that arises from striated skeletal muscles or muscle progenitor cells. A 8-month-old intact male Golden Retriever dog was referred to the Veterinary Teaching Hospital of the Konkuk University with 2 month history of left forelimb lameness and left axillary region mass. On radiography, osteolysis of left scapular bone was confirmed on ventrodorsal view. On cytology, the neoplastic cells revealed prominent anisocytosis and anisokaryosis, and it was suspected to be a canine malignant mesenchymal tumor. On CT examination, the large mass extending from axillary region to thoracic wall invaded the infraspinatus muscle of scapula. The mass also invaded the intercostal muscles. On lung images, it was strongly suspected that there were metastasized nodules. The patient was euthanized, and we performed autopsy for histopathological examination. Grossly, tumor contained pus and was strongly adhered to the scapular bone. Round yellowish nodules 2~3mm in size were found in both left and right lung lobes. Microscopically, the cells were primarily large and round to oval with marked anisokaryosis. The cytoplasm was extremely eosinophilic and had distinct cell margin. In the lung where the nodules were formed, neoplastic cells were found with similar characteristics to those found in the mass. The neoplasm was invasive, and destroyed the adjacent scapular bone. In the blood vessel, we also found cells that were morphologically similar to the tumor cells. Immunohistochemical staining demonstrated that the neoplastic cells were positive for vimentin, desmin, myoglobin and actin. The tumor was diagnosed as rhabdomyosarcoma, embryonal type.

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