

Megakaryoblastic Leukemia in a Shih-Tzu Dog: Clinical and Histopathological Findings

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Introduction: Acute megakaryoblastic leukemia is a rare form of myeloid leukemia and may be associated with platelet dysfunction.

Materials and methods: A 10-year-old female Shih-Tzu dog was presented to the Veterinary Medical Teaching Hospital of Konkuk University with a history of anorexia, depression, and generalized weakness of 3 weeks duration. Anti-human platelet glycoprotein (GP III), anti-human von-Willebrand factor (vWF) antibodies, and anti-human CD79a antibodies were used to identify neoplastic immunoreactive antigens of megakaryocytic cells

Results: Abnormal laboratory findings included neutrophilic leukocytosis (WBC 45,400/ μ l reference range, 6,000 to 17,000/ μ l), severe anemia (PCV 9.6%; reference range, 37% to 55%), and thrombocytosis (612,000/ μ l reference range, 200,000 to 500,000/ μ l). The blast cells resembling megakaryoblasts were also observed on peripheral blood smears. The animal died despite supportive therapy. Megakaryoblastic leukemia was diagnosed using immunological markers allowed visualization of neoplastic megakaryocytes. Antibodies against platelet GP III were demonstrated to be the most useful for the diagnosis of megakaryoblastic leukemia of paraffin-embedded canine tissues.

Clinical relevance: Hematological and histological data coupled with immunohistochemical reactivity for platelet GP III, vWF, and CD79a antigen in blast cells confirmed a diagnosis of M7 megakaryoblastic leukemia.

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