Thrombocytopenia in Japanese Akita dogs

We recently read with great interest the case report “A novel form of macrothrombocytopenia in Akita dogs”, describing 3 unrelated Akita dogs with a common history of persistent macrothrombocytopenia. Two dogs (1 and 2) were Japanese Akitas and for the third dog, pedigree information was not available. Dogs 1 and 3 were living in the United States and dog 3 in Japan. All dogs showed persistent thrombocytopenia based on platelet counts determined with unspecified analyzers by the referring veterinarians. Blood smears were prepared immediately from all 3 dogs, and a blood sample from dog 1 was also sent to the Auburn University College of Veterinary Medicine (AUCVM). A CBC performed upon arrival at the AUCVM using an Advia 120 hematology analyzer on the blood sample of dog 1 confirmed the thrombocytopenia (81,000/μL, reference interval [RI] 164,000–510,000/μL), and a markedly increased mean platelet volume (MPV, 23.7 fL, RI 8.4–13 fL) was noted. Blood smear examination of all 3 Akitas showed many large elongated platelets mixed with variable numbers of normal-sized platelets and large round platelets. The rare long linear platelets (40–70 μm) had a morphology similar to proplatelets. No morphologic abnormalities or inclusions were observed in other cell lines. Based on the persistent thrombocytopenia in the absence of clinical bleeding or response to glucocorticoid or doxycycline treatment, the authors suspected a possible congenital macrothrombocytopenia in these Akitas, although the MPV in dog 3, when measured with the hematology analyzer of the referring veterinarian, was within the RI.

We agree with Hayakawa et al that Japanese Akita dogs may have persistent thrombocytopenia. In fact, since a few years, in our laboratory we collect blood samples from clinically healthy dogs to evaluate age-, sex-, sexual status-, and breed-based RI. We analyze all samples with Advia 120/2120 hematology analyzers, always followed by a blood smear examination. To date, we have collected data from more than 60 clinically healthy Japanese Akita dogs living in Italy. Our preliminary results show, in agreement with the report of Hayakawa et al, a thrombocytopenia in this breed of dogs when platelet counts are compared to the general dog population RI. However, our population of clinically healthy Akitas does not have an increased MPV or abnormal platelet morphology. The different results from our population of Akita dogs compared to the 3 dogs described in this report may suggest that the platelet alterations described by Hayakawa et al may be due to a coincidental finding, pharmacologic effect of some sort, occult disease, or might reflect specific characteristics of some Japanese Akita dogs living in different geographic areas.

In conclusion, we believe that the report of Hayakawa et al gives important clinical information and may help prevent inadequate and potentially dangerous immunosuppressive treatment for supposed (and never confirmed) immunemediated thrombocytopenia. Nevertheless, until the macrothrombocytopenia is confirmed in studies including a larger population of dogs, the hypothesis of a congenital macrothrombocytopenia in the Japanese Akita should be considered with caution. In fact, according to our preliminary data, a congenital thrombocytopenia seems to be more likely than a macrothrombocytopenia.

Marco Caldin and Andrea Zoia
San Marco Veterinary Clinic, Padua, Italy
mc@sanmarcovet.it
zoia.andrea06@gmail.com

Silvia Tasca and Tommaso Furlanello
Laboratorio d’Analisi Veterinarie San Marco, Padua, Italy
silvia.tasca@sanmarcovet.it
tf@sanmarcovet.it

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