

Landseer Thrombopathia

Landseers of European Continental Type (ECT) have been described with a bleeding disorder secondary to platelet dysfunction. Platelets are small, circulating cytoplasmic fragments that are the first line of defense in stopping the flow of blood from injured blood vessels. An important aspect of platelet function is their ability to stick to each other and plug holes in damaged vessels until blood clotting and tissue repair can occur. The platelets of Landseers with thrombopathia are defective in their ability to stick to each other due to the inability of the platelets to transmit internal signals properly. Therefore, these dogs are at increased risk for spontaneous hemorrhage and they are also at high risk for excessive hemorrhage as a result of injury or surgery. Affected Landseers experience spontaneous mucosal type bleeding (including gingival bleeding, particularly during permanent tooth eruption, gastrointestinal bleeding, urinary tract bleeding, and nose bleeds), and petechial and ecchymotic hemorrhages of the skin (bruising that can range from small, pinpoint lesions to lesions as large as a half-dollar or larger). Skin lesions on the abdomen can best be observed where the hair tends to be thinner. Gastrointestinal bleeding may or may not be apparent. If bleeding is severe, the stools will appear black and tarry. Gastrointestinal bleeds can also be slow and insidious (microscopic and not visibly apparent) resulting in iron deficiency anemia with time.

Until recently, the disease could not be diagnosed without bringing dogs to a testing facility that specialized in studying platelet function disorders in animals. Although these methods were accurate in diagnosing affected dogs, the methods could not readily identify carriers of the disease. Carrier detection is vital in controlling spread of inherited defects and DNA testing is the only reliable method of detecting these animals. During the summer of 2006, the molecular basis for thrombopathia in Landseers was determined at Auburn University. A mutation was found in a gene that encodes for a signal transduction protein vitally important in transmitting signals that result in normal platelet aggregation and granule release. By using DNA testing, affected and carrier Landseers can now be identified by simply submitting a blood sample through the mail.