INTERNAL MEDICINE CASE STUDIES

Case 18: Myelofibrosis in a 7 year old female neutered Springer Spaniel

A 7 year old female neuter Springer Spaniel presented to the R(D)SVS Internal Medicine Service for investigation of progressive lethargy over the previous three weeks. The dog was bright, alert and responsive on initial examination. Routine haematology revealed a PCV of 9%. A blood smear analysis showed marked red blood cell anisocytosis. Moderate numbers of hypochromic cells, elliptocytes and schistocytes were seen. A small number of spherocytes, polychromatophils and ghost cells were also detected. Overall the anaemia appeared poorly regenerative. The dog was blood typed as DEA 1.1 negative. A slide agglutination test was negative. A Coombs test was weakly positive for polyvalent canine Coombs reagent. After 24 hours of hospitalisation, the dog’s PCV dropped to 8%. The dog received a transfusion of half a unit of packed red blood cells without complication. Her post transfusion PCV was 22%.

A bone marrow biopsy was taken from her left humerus and was diagnostic for severe myelofibrosis (figure 1). Myelofibrosis is characterised by fibroblastic proliferation and various degrees of collagen deposition in the marrow cavity. The cause of the dog’s myelofibrosis remains uncertain. There was some indication of immune mediated haemolytic anaemia in the blood smears, as well as the Coombs test, and the myelofibrosis could have occurred secondary to this. Other possible causes include a response to previous marrow necrosis, vascular damage and inflammation. It can also occur in myelo- or lymphoproliferative disease and megakaryoblastic leukaemia. Our investigations did not identify any other obvious underlying causes. In many cases of myelofibrosis an underlying disease cannot be detected and they are classified as idiopathic. The treatment therefore consisted of immunosuppressive doses of prednisolone. We may also consider the use of azathioprine. Anabolic steroids can also be given to stimulate erythropoiesis non-specifically.
Figure 1: Histology of bone marrow biopsy revealing myelofibrosis

References

1 Weiss et al (2002) A retrospective study of 19 cases of canine myelofibrosis. JVIM. 16, 174-8