Could it be zinc-responsive dermatosis?

Zinc is an essential nutrient because it is an important cofactor of many metalloenzymes involved in cell functions and is closely linked with essential fatty acids. This function is particularly important in the maintenance of epidermal integrity where the cells undergo rapid proliferation to replace those that are shed through desquamation. Zinc is also associated with immunity and neurological and intestinal functions.

Zinc-responsive dermatoses are clinical syndromes recognised in dogs, which respond to zinc supplementation. They are associated with either a metabolic abnormality (syndrome I), or a nutritional deficiency (syndrome II).

**Syndrome I zinc-responsive dermatosis**

This form of dermatosis has been associated with defective intestinal absorption and is breed associated – primarily in the Siberian Husky and Alaskan Malamute.

A syndrome associated with an autosomal recessive genetic defect that inhibits the absorption and utilisation of zinc is recognised in Bull Terriers with lethal acrodermatitis. Affected individuals develop signs as puppies and they fail to thrive; they normally don’t live beyond 18 months of age. Affected puppies were seen in the 1990s, but this genetic defect may now have been bred out in the UK. The author hasn’t seen any cases for over 15 years.

**Syndrome II zinc-responsive dermatosis**

Syndrome II is associated with a reduced availability in food; however, not all cases are linked with a dietary deficiency of zinc per se. Other nutritional factors that can reduce the availability of zinc include diets containing high levels of phytates, low levels of essential fatty acids, high levels of minerals such as calcium, phosphorus and magnesium and certain dairy products. Rapidly growing pups of certain large and giant breeds such as the Great Dane are also at risk if sufficient levels of zinc are not present in the diet.

**Clinical signs**

Cutaneous signs associated with syndrome I in the early stages include erythema, which is followed by alopecia, crusting and scaling around the mouth, eyes and ears (Figure 1). Other mucocutaneous areas such as the vulva, scrotum and anal areas may also be affected. Hyperkeratosis at pressure points such as the elbows, tarsi and footpads may be evident. Secondary infections are commonly seen.

Breeds more likely to be affected with syndrome II inc-