

**HYPOTHYROIDISM, A MULTISYSTEM ENDOCRINE DISORDER:  
EVALUATION OF SEVEN CANINE CASES PRESENTED TO THE  
VETERINARY TEACHING HOSPITAL, PERADENIYA, SRI LANKA**

**U.G.V.S.S. Kumara, A.G.M. Chathurangi, A.S.M. Athukorala and  
E. Rajapaksha\***

*Department of Veterinary Clinical Sciences, Faculty of Veterinary Medicine and Animal  
Science, University of Peradeniya, Sri Lanka  
\*earajapaksha@gmail.com*

Hypothyroidism is a multisystem disorder in dogs where clinical signs reflect generalised decreased cellular metabolism. Hypothyroidism is a differential diagnosis for many problems because thyroxine influences the function of multiple organs. Presentation of hypothyroidism is nonspecific and is commonly under-diagnosed or misdiagnosed. Clinical signs of hypothyroidism include lethargy, mental dullness, obesity, exercise intolerance and dermatological lesions. Causes of dermatological lesions are misdiagnosed in Sri Lanka mainly due to secondary complications with common fungal and ectoparasitic infections. Seven dogs with dermatological signs were diagnosed with hypothyroidism during a five month period. These dogs showed bilaterally symmetrical alopecia in the ventro-lateral trunk, caudal thigh and dorsal tail regions, together with dry scaly skin. All seven dogs were lethargic and obese while one had poor libido. Clinical examination revealed bradycardia and cardiac arrhythmias in four dogs and testicular atrophy in one dog. It is known that myocardial contractility is commonly reduced with hypothyroidism. However, in this study, only four of the seven dogs showed evidence of this with low QRS amplitude in three dogs and an inverted T wave in one dog. Low basal serum concentration of free thyroxine (FT<sub>4</sub>; < 11 pmol/l) and thyroid stimulating hormone (TSH; < 0.7 mIU/l) were detected in five serum samples by using the laboratory techniques applied to human samples. Low TSH and normal FT<sub>4</sub> was detected in two samples suggesting pituitary-dependent hypothyroidism with the normal FT<sub>4</sub> level being due to non-specificity of the testing method. The technique used to measure FT<sub>4</sub> in this study was different from the standard equilibrium dialysis method ideally used in dogs. Therefore, clinical signs along with reduced levels of either FT<sub>4</sub> or TSH were considered as inclusion criteria and all dogs were treated with levothyroxine (20 µg/kg once daily). Three dogs were given supplementary vitamins and shampoo. All patients became more active with treatment and hair re-growth occurred within two months. Follow-up tests showed that two dogs had regained normal basal serum concentration of FT<sub>4</sub> at the time of writing. All owners were advised to monitor FT<sub>4</sub> values quarterly to prevent iatrogenic hyperthyroidism. This study suggests hypothyroidism may be a common endocrine disorder in dogs and that history taking and careful attention to clinical and laboratory findings are important to diagnose this condition. Further, it is important to take into consideration the laboratory technique used to measure FT<sub>4</sub> and TSH when interpreting results.