# THERAPEUTIC MANAGEMENT OF HYPOTHYROIDISM IN A PUG DOG

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A four year old male Pug dog was presented to Veterinary Teaching Hospital, Pantnagar with a history of itching, hair loss. On clinical examination, normal rectal temperature along with bradycardia, oligopnoea was noticed. Laboratory examination of blood revealed normal haemoglobin, packed cell volume, total leukocyte count, but serum total T3 and T4 values were less than normal while TSH values were raised along with hyperproteinemia. Based on clinical and laboratory examinations, case was diagnosed as hypothyroidism. Dog was treated with Tab. Levothyroxine (0.02 mg/kg BID per orally), Shampoo Ketoconazole/Chlorhexidine for topical application and supportive therapy with antioxidant, antihistamines and essential fatty acids. After one and a half month of therapy animal recovered completely.

**Keywords:** Hypothyroidism, Ketoconazole, Levothyroxine.

**H**ypothyroidism is a common endocrine dysfunction in dogs. Adult onset hypothyroidism may be due to irreversible damage to thyroid follicles (Graham *et al.*, 2007). It may be due to lymphocytic thyroiditis or idiopathic thyroid degeneration (primary). Congenital hypothyroidism generally occurs due to decreased pituitary thyroid stimulating hormone production (secondary) or hypothalamic thyrotropin releasing hormone (tertiary) (Feldman and Nelson, 2004). The pathologic findings of thyroiditis predominantly involve lymphocytic component and consist of B- and T-cell components. Clinical signs of the dysfunction generally result due to reduced basal metabolic rate in the body. Canine hypothyroidism may affect a number of body systems including nervous system, reproductive system and integumentary system (Higgins *et al.*, 2006). Along with alterations in the thyroid hormone profile, there may also be hyperlipidemia (Vitale and Olby, 2007). In the present study, diagnosis and therapeutic management of hypothyroidism in a Pug has been attempted.

## Case History and Observations

A four year old male Pug dog weighing 15 Kg, was presented to Veterinary Teaching Hospital, Pantnagar with a history of hair loss, reduced activity, obesity and heat seeking behaviour from two and a half month. There was no history of any previous treatment been given to the animal for the problem. Animal was having generalized alopecia with rat tailed appearance of tail (Fig.1). On clinical examination, normal rectal temperature (101.6˚F) along with bradycardia

**Fig.1: Rat tailed appearance in a Pug**

(45bpm), oligopnoea (12/min) was noticed. Haematology revealed normal haemoglobin (12g%), packed cell volume (38%), total leukocyte count (8,000cells/µl), but serum total T3 (0.6nmol/l) and T4 (10nmol/l) values were less when compared to normal, while TSH (0.72ng/ml) values were higher than normal along with hyperproteinemia (8.1g/dl) and hypercholesterolemia (335mg/dl). Skin scrapping was taken from three different sites on body, which came out to be negative for any ectoparasitic infestation. Based on history, clinical signs, clinical and laboratory examinations, case was diagnosed as hypothyroidism.

**Treatment and Discussion**

Treatment for the dog was started with Tab. Levothyroxine (0.02 mg/kg BID orally) for one and a half month, Shampoo Ketoconazole/Chlorhexidine for topical application and supportive therapy with ascorbic acid 500mg (1/2 tab po ad a.d.) as antioxidant therapy, pheniramine 1ml I/M for 3 days as antihistaminic and omega 3 and omega 6 fatty acids 5ml po od for 21 days. After two months of therapy thyroid hormone levels reduced to normal and the animal recovered completely.

Hypothyroidism occurs mostly in 4 to 8 year old, mid to large sized purebred dogs. In the present case study, a case of hypothyroidism was treated successfully. Hair thinning / alopecia in dogs is the characteristic clinical sign in dogs suffering from hypothyroidism as also recorded by Mooney (2011). Reduced activity and heat seeking behavoiur occurs by low BMR associated with the hypothyroidism as also reported by Panciera (1994). Replacement therapy with levothyroxine is the prime choice of management as prescribed in the present case. To combat the symptoms and reduce severity, immune stimulants, antihistaminic, antibiotics and topical antifungal have been used in the present case. In conclusion, hypothyroidism in canines is a complex disease associated with variable and non specific clinical signs and requires a thorough diagnostic and therapeutic management for successful recovery.

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