

## Congenital Hypothyroidism in a Lhasa Apso pup

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### Introduction

Hypothyroidism is due to impaired production and secretion of the thyroid hormones which results in a decreased metabolic rate (The Merck Vet Manual, 2005). It is the most common endocrinopathy of the dog, however the clinical signs are quite variable and almost any organ or system may be involved. Dermatological changes more commonly occurs in 60-80% hypothyroid dogs which includes dry scaly skin, changes in hair coat quality or color, alopecia, seborrhea, hyperkeratosis, hyperpigmentation. Alopecia is usually bilaterally symmetric in areas of lateral trunk, ventral thorax and tail (Ettinger, 1983).

### Case history and Clinical Observations

A two month old Lhasa apso male pup, color black (Reg no 7451) was admitted to Medical Ward of Bai Sakrabai Dinshaw Petits hospital, Parel, Mumbai with the complaint of inappetance, stunted growth since birth and hair loss. Clinical examination of pup revealed palor mucus membrane, distended abdomen along with bilateral symmetrical alopecia on face, ventral side of abdomen, area of forelegs and tail. Alopecia was found to be non-pruritic and a typical rat tail appearance was observed.

On the basis of clinical observation the case was suspected as hypothyroidism. Further confirmation was done by thyroid function test (T3, T4, TSH estimation), which showed low levels of T3 - 27ng/dl, T4 - 1.4µg/dl and TSH - 0.2mg/dl.

**Therapeutic management:** The pup was further treated with thyroxin supplementation Tab Levothyroxine (Eltroxin) @ 0.02 mg/kg bwt orally. The dog was also treated for anorexia, anemia, and weakness by administering inj Dextrose 25% 10ml i/v, inj imferon 0.1 ml i/m, conciplex 0.2 ml i/m and protein sterile 5 ml i/v for 5 days. As a supportive therapy deworming was done with tab Drontal plus ½ tab orally. The dog was discharged from the hospital as per owner request & continued with oral supplementation of Tab Levothyroxine initially for one month. Regular monitoring and follow-up of the case was done every week. The clinical improvement was judged on the basis of reversal of changes in coat and body appearance after 1-2 month of therapy. There was significant improvement observed after 1 ½ months of treatment. The dog became alert & active. There was

also improvement in weight gain.

### Discussion

Congenital hypothyroidism (Cretinism) is rarely diagnosed in dogs. Report of congenital hypothyroidism includes iodine deficiency, thyroid dysgenesis and dysharmonogenesis. Congenital hypothyroidism results in mental retardation and stunted disproportionate growth and delayed skeletal maturation. Affected pups showed same dermatological findings similar to those seen in adult hypothyroid dogs. Affected puppies are often largest in the litter at birth but start to lag behind their littermates within 3 to 8 weeks (Ettinger, 1983).

Robinson et al (2008) reported congenital hypothyroidism in two Scottish deerhound puppies which were from separate litters, but were the progeny of the same sire and dam. The puppies were smaller, had shorter limbs & shorter, broader heads than their littermates. They also had histories of weakness, difficult in walking and somnolence. Both had depressed serum thyroxin (T4) levels. Both the reports are accordance with our findings.

The diagnosis of hypothyroidism is done by measuring total T4, total T3 & free T4. Total T4 concentration is most commonly used as diagnostic facet for thyroid dysfunction (Chakrabarti, 2007). The majority of hypothyroid dog demonstrate good control of disease at dose rate 0.02mg per kg b.wt. T4 administered orally once a day. However, therapy should be individualized based on clinical response, therapeutic monitoring, presence or absence of concurrent illness. According to Ettinger (1983) improvement of activity should occur in first 2 weeks of treatment and normal hair coat may take several months.

### References

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