

# Chronic diarrhea in west highland white terrier caused by hyperthyroidism

Maulana ArRaniri Putra, Isnin Ramadhani Nafiu\*, Diah Pawitri

PDHB Drh Cucu Kartini S Green Garden, West Jakarta

**ABSTRACT:** A 8-years old, female West Highland White Terrier, with a 7-month history of diarrhea and sometimes hematemesis, polyuria and polydipsia. The antibiotic, antihelminthic, antiprotozoal, vitamin and diet changing was given by the previous veterinarian, diarrhea was stopped for a while but the diarrhea reappear. The clinical symptoms was chronic diarrhea, polyuria, and polydipsia. Physical examination revealed a swelling in ventrolateral neck area suspected a enlarge thyroid gland in right side. Blood analyses performed a markedly elevated thyroxine (T4) level and increased alkaline phosphatase (ALP). An urinalysis revealed decreases specific gravity (hypostenuria). From an examination, the diagnose hyperthyroidism has been made. The dog was treated by unilateral thyroidectomy. Histopathology of thyroidectomy was thyroid adenoma. A month after surgery, diarrhea was gone and polyuria and polydipsia was better.

**Keywords:**

chronic diarrhea, hyperthyroidism, thyroid adenoma.

## INTRODUCTION

Chronic intermittent or persistent diarrhea is a common clinical sign in dogs with chronic enteropathy and might be a manifestation of gastrointestinal or extragastrointestinal disorders (Ettinger 2010). The primary problem might be caused by infectious, neoplastic, toxic, mechanical or non-infectious inflammatory. The extragastrointestinal disorder might be caused by exocrine pancreas, liver, kidney or a hormone abnormality such as hyperthyroidism.

Hyperthyroidism or thyrotoxicosis was uncommon disorder in dog. Hyperthyroidism is a disease that caused by overproduction of thyroid hormone and induced increasing of metabolism in the body. Metabolism increasing caused an intestinal peristaltic movement to be increased (Feldman & Nelson 2004).

## CASE

**Signalement and anamneses:** A 8-years old female West Highland White Terrier was present to clinic with complaints of intestinal problem. The dog had a 7-month history diarrhea and sometime hematemesis, polyuria and polydipsia. The antibiotic, antihelminthic, antiprotozoa, vitamin and diet changing was given by the previous veterinarian, diarrhea was stopped for a while but the diarrhea reappear.

**Clinical sign and physical examination:** The clinical symptoms was chronic diarrhea, polyuria and polydipsia. Physical examination revealed a swelling ventro lateral neck area suspected a swelling thyroid gland in right side. Based on anamnesis and clinical sign, blood analysis and urinalysis are needed for further examination.

## RESULT AND DISCUSSION

Hyperthyroidism is rare in dogs, and mosts cases are caused by functional thyroid carcinomas (Feldman & Nelson 2004) and the most common endocrinopathy in cats. Clinical signs of increased thyroxine concentration are similar to those seen in cats, such us weight loss, polyphagia, and polyuria/polydipsia. The blood analyses of this case was shows on Table 1.

Table 1 Blood analysis

Test	Result	Reference Range	Unit
Hemoglobin	17.6	12-18	g%
Eritrocite	7.5	5.5-8.5	10 <sup>9</sup> /μL
Leukocite	12	6-17	10 <sup>3</sup> /μL
Trombocite	451	200-900	10 <sup>3</sup> /μL
SGPT	64*	<50	U/L
Total Protein	6.2	5.4-7.5	g/dL
Albumin	3.5	2.6-4.0	g/dL
Globulin	2.7	2.7-4.4	g/dL
Bilirubin Total	0.28	0.07-0.61	mg/dL
ALP	351	<105	μL
Cholesterol	105	<200	mg/dL
Glucose	116	60-125	mg/dL
Ureum	17.9	10-20	mg/dL
Creatinine	1.0	1.0-2.0	mg/dL
Ca Total	10.9	8.7-11.8	mg/dL
Phospor	3.1		mg/dL
T4 Total	9.58	0.8-2.9	μg/dL

Note: SGPT=Serum Glutamic Pyruvic Transaminase; ALP=Alkaline phosphatase.

Received: 15-10-2019 | Revised: 23-11-2019 | Accepted: 26-11-2019

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Blood analyses performed and results markedly an elevated of thyroxine (T4) and increased of alkaline phosphatase (ALP) levels. That evidences can be caused by increasing of thyroid gland activity. Urine analysis revealed hypostenuria with no proteinuria and no glucosuria. High level of thyroxine causes metabolism increasing and tends to increase glomerular filtration rates.

Unilateral thyroidectomy has been chosen as therapy for the dog in this report. The thyroid gland was then analysed to laboratory for histopathology examination. The histopathologically, there was thyroid adenoma. Adenoma is common cancer found on 6-13 year old dog. For prevent the reappear of symptoms, a complete thyroidectomy was suggested. Dog has good recovery after the surgery. Polyuria and polydipsia markedly reduce, the problem of diarrhea also disappear and feces now have a good consistency. The blood examination showed a significantly decrease of thyroxine (T4) as shown on Table 2.

Table 2 Comparison of blood T4 level before and after thyroidectomy

Test	Before Thyroidectomy	After Thyroidectomy	Reference Range	Unit
T4	9.58	1.95	0.8-2.9	µg/dL

## ■ CONCLUSION

Hyperthyroidism will affected a metabolism in body which is will increased the activity by raising the thyroid hormone. The increase of thyroid hormone will caused some condition such as polyuria and polydipsia, increase of glomerular filtration rate and intestinal peristaltic movement. Thyroid adenoma will caused the excess of thyroid hormone. Thyroidectomy in affected thyroid gland will reduce the production of thyroid hormone.

## ■ AUTHOR INFORMATION

### Corresponding Author

\*IRN: info@pdhbvet.com

PDHB Drh Cucu Kartini S Green Garden, Jln Panjang, Green Garden Blok I9 No. 35, West Jakarta, DKI Jakarta

### Author Contributions

All authors contributed equally and approve with this publication.

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