

Nutritional support in a dog with secondary nutritional hyperparathyroidism

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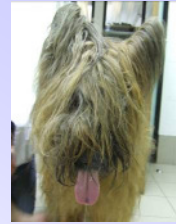
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9-year-old, intact male, Briard

HISTORY

Problems started 1 month ago

- Weight loss
- Inappetence
- Listless, depression, weakness
- Rather immobile
 - difficulty walking, standing, getting up
 - lame on his forelegs
 - unable to do any activity
- Drooling a lot
 - thickening of the gingiva
- History of diarrhoea but not at this moment



9-year-old, intact male, Briard

PHYSICAL EXAMINATION

- Very calm
- Thin
 - BW: 38 kg; BCS 2/5 (ideal BW 42 kg)
- Muscle atrophy
- Strong diffuse swelling of the jaws on both sides
- Abdominal palpation: no abnormalities
- Rectal examination: no abnormalities
- Neurological examination: no abnormalities

9-year-old, intact male, Briard

STOMATOLOGY

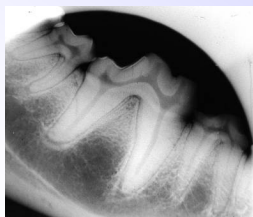
- Teeth
 - mobile without pocketing
 - like rubber
- General thickening of the jaws, without ulcerations
- Jaws could be crushed



9-year-old, intact male, Briard

Right Mandibula

NORMAL



PATIENT



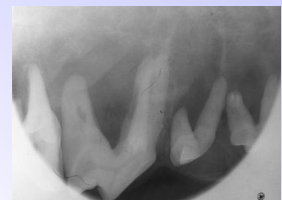
9-year-old, intact male, Briard

Right Maxilla

NORMAL



PATIENT



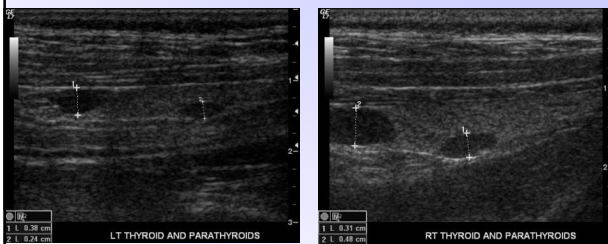
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All parathyroid glands are very prominent !!

Ex. Left: cranial gland: height 4.7 mm, length 7.2 mm
Normal gland should measure 2 mm maximum.

9-year-old, intact male, Briard

- Routine blood work: CBC and biochemistry
 - Urinalysis
 - RX thorax
 - Ultrasound abdomen
- NO abnormalities

		References
PTH (pmol/l)	> 210 /	3.00 - 17.00
PTHrP (pmol/l)	0.0	
Ca (mmol/l)	2.28	2.21 - 2.79
Ionised Ca (iCa ²⁺) (mmol/l)	1.27	1.25 - 1.45
Vitamin D (nmol/l)	4	60 - 215

9-year-old, intact male, Briard

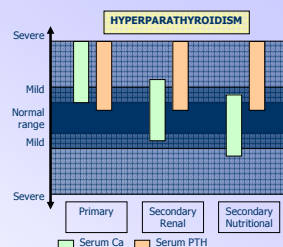
DIAGNOSIS

- Rubber jaw
- Hyperparathyroidism



DIFFERENTIAL DIAGNOSIS

- Primary → NO
- Secondary
- Renal → NO
- Nutritional



(Nelson & Couto, 2003)

9-year-old, intact male, Briard

DIET HISTORY

- Since puppy → diarrhoea with all consumed commercial diets
- HOME MADE DIET
 - Protein source → Beef, Veal, Pork, Lamb, Chicken, Turkey → Diarrhea
 - Horse meat

9-year-old, intact male, Briard

DIET HISTORY

	For years	Since 2 weeks
Horse meat	100 g	→ 250 g
Tricolore pasta	120 g	
Bread	400 g	
Cocos oil	2 thee spoons	→ NO
Carrots	500 g	
Spinach	50 g	
Tomato	1	
Garlic		
Thym		
Bay leaves		

9-year-old, intact male, Briard

DIET HISTORY

MER 415 kJ/kg^{0.75} → 6850 kJ/day

		First HMD	Second HMD
Protein	% dm	18.52	23.04
	g CP/kg ^{0.75}	4.8	6.6
Fat	% dm	4.39	5.46
CHO (NFE)	% dm	72.13	66.63
Fibre	% dm	1.66	1.52
Ash	% dm	3.31	3.35
Calcium	% dm	0.15	0.14
Phosphorus	% dm	0.32	0.34
	mg/kgBW	33.14	37.79
Ca/P		0.45	0.41
Energy intake	kJ	6590	7437

9-year-old, intact male, Briard

DIETARY TREATMENT

Hypoallergenic diet

→ Hill's PD Feline Z/D ULTRA allergen-free canned

MER 415 kJ/kg^{0.75}; idBW 42 kg
→ 1730 g/day (11 cans)

Change the diet gradually



Owner did not follow our advice
→ DIARRHEA

Composition of the diet:

	Dry matter (%)
Crude protein	33.7
Crude fat	18.4
NFE	40.3
Crude fibre	1.4
Calcium	0.71
Phosphorus	0.63
Ca/P	1.1

9-year-old, intact male, Briard

DIETARY TREATMENT

Hypoallergenic diet

→ 1014 g Hill's PD Feline Z/D ULTRA allergen-free canned

+ Home made diet

Horse meat 125 g
Tricolore pasta 50 g
Carrots 250 g
CaCO₃ 6.5 g

Composition of the diet:

	Dry matter (%)
Crude protein	32.73
Crude fat	14.83
NFE	46.10
Crude fibre	1.13
Calcium	1.17
Phosphorus	0.55
Ca/P	2

MER 415 kJ/kg^{0.75}; idBW 42 kg

9-year-old, intact male, Briard

DIETARY TREATMENT

Hypoallergenic diet

→ Home made diet

Horse meat 600 g
Rice 200 g
Rapeseed oil 10 g
Carrots 200 g
Vit/min premix 9 g

MER 415 kJ/kg^{0.75}; idBW 42 kg

Composition of the diet:

	Dry matter (%)
Crude protein	35.12
Crude fat	10.40
NFE	52.05
Crude fibre	0.16
Calcium	0.60
Phosphorus	0.45
Ca/P	1.3

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FOLLOW UP: 3 months later

- Gained weight: 42 kg; BCS 3/5
- Good appetite
- Increased activity

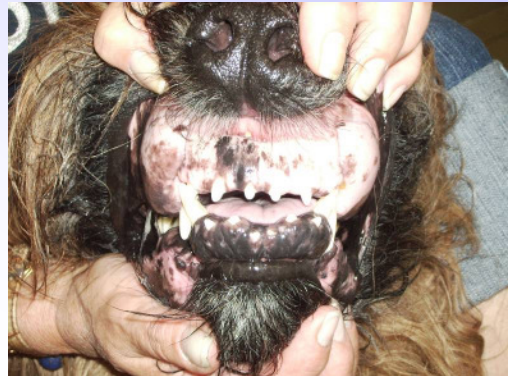
- Swelling of the jaw is reduced, jaws can not be crushed
- Teeth immobile, feel much harder

9-year-old, intact male, Briard

FOLLOW UP: 3 months later



9-year-old, intact male, Briard



9-year-old, intact male, Briard

FOLLOW UP: 3 months later

➤ DIARRHOEA !!!

→ Combination of large and small bowel diarrhoea

PLAN

- Blood analysis → routine + PTH, iCa, VitD, ...
- Endoscopy & Colonoscopy → Cause of diarrhoea?

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TO BE CONTINUED...