

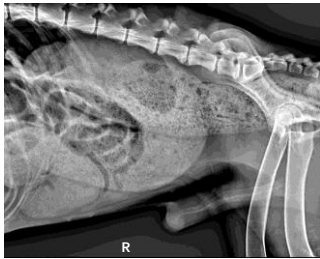


(DYS)AUTONOMIC DIARRHEA IN A GERMAN SHEPHERD DOG

Turin, 17-09-2019



Marco Isidori

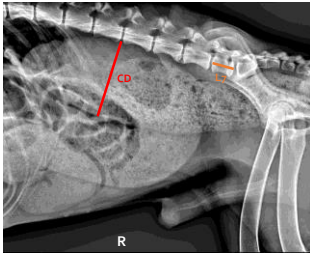


Definitions



"Megacolon is a pathologic condition of **hypomotility** and persistent, irreversible **dilation** of the colon that results in **constipation** and **obstipation**"

"Colon diameter should be less than the length of the body of **L7**, with enlargement greater than **one and a half times** the length of **L7** an indicator of **large bowel dysfunction**"



CD
L7

$$CD \div L7 = 3.5$$

Signalment



Name: Zeus
Age: 9 yo
Breed: German Shepherd Dog
Sex: Male
Neuter status: Intact

Medical history



- Constipation enduring for more than **12 months**;
- Chronic vomiting (**daily episodes** in the last week);
- Chronic weight loss (**20 kgs** in **6 months**);
- No benefit noticed after medical therapy institution:

1. lactulose
2. liquid paraffin
3. ranitidine

Nutrition history



- Never eaten **BARF** or bony diets



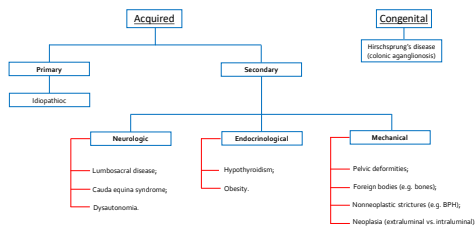
- Proximate analysis: CP 26.0%, EE 17.0%, Ashes 6.6%, CF 1.2%, Moisture 8.0%
- Energy density: 4.034 kcal ME/g
- Daily ration: 500 g → 2037 kcal EM/day



- Proximate analysis: CP 6.6%, EE 4.8%, Ashes 2.10%, CF 1.6%, Moisture 75.0%
- Energy density: 0.995 kcal ME/g
- Daily ration: 4 and a half (400 g) cans → 1792 kcal EM/day

Weight: 35 kgs BCS: 3/9 MCS: moderate muscle loss

Classification of megacolon



Diagnostic work-up



Labworks

- CBC & hematochemistry ✓
- Urinalysis ✓
- Endocrinology (TSH, TT₄, FT₄, TLI) ✓
- Genetics (degenerative myelopathy) ✓

Diagnostic imaging

- X-ray ✓
- Ultrasonography ✓
- CT scan ✓

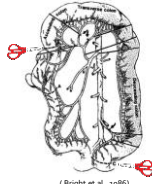


ACQUIRED IDIOPATHIC
MEGACOLON

Therapeutic plan

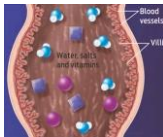


- High-fiber diet ($CF \geq 7\% \text{ DM}$)
- Low-fiber diet ($CF \leq 5\% \text{ DM}$) + medical therapy
- Surgical therapy (sub-total colectomy)



(Bright et al., 1986)

Post-op dietary recommendations



Reduce fecal bulk

Make up for mineral losses

Increase food-associated water intake

Post-op dietary recommendations



COMPOSITION

Pork and poultry meals, salmon, rice, vegetable fibres, sunflower oil, minerals, gelling agents, lactic acid, yeast hydrolysate, lysine of Mannan-Oligo-Saccharides, mangrove meal (rich in iodine), trace elements (including chelated trace elements), vitamins.

KEY VALUES

	per 100g as fed	per kg dry matter
Protein	8.5%	21%
Fat content	6.5%	24%
Carbohydrate	6.5%	24%
NFE	6.5%	24%
Digestible fibre	1.1%	2.8%
Crude fibre	1.1%	2.8%
Starch	1.1%	2.8%
Starch 2	1.1%	2.8%
Crude fibre	1.1%	2.8%
Cellulose	1.1%	2.8%
Phosphorus	0.09%	0.09%
Sodium	0.09%	0.09%
Potassium	0.09%	0.09%
Magnesium	0.09%	0.09%
Mineral content	1.0%	1.0%

$\Delta BW = 31.8 \text{ kgs (BCS 3/9, moderate muscle loss)}$

$iBW = 40 \text{ kgs}$

$DER \geq iBW^{0.75} \times 70 \times 1.6 \geq 1850 \text{ kcal} \rightarrow 1700 \text{ g of food divided into 4 to 6 meals}$

$\text{WATER REQUIREMENT} = 1.6 \times \text{RER (mL)} = 1780 \text{ mL} \leftarrow 1275 \text{ mL}$

75% moisture content

Follow-up: 8 weeks post-op

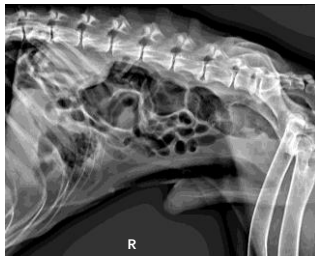


«Reduction of fecal moisture and restoration of intestinal peristalsis beyond the site of anastomosis seen 8 weeks post-op (Jimba et al., 2002)»

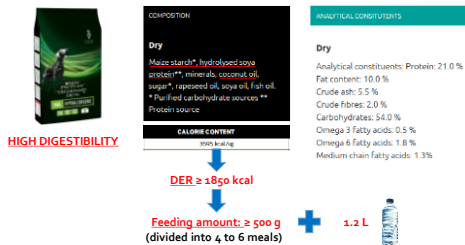


aBW: 30.2 kgs
BCS: 2/9
MEG feeding amount: 500 g Royal Canin GI
Daily energy intake: 2516 kcal/day
DER: 1850 kcal/day
No laboratory findings of malnutrition/malabsorption (TLI, serum citrulline WRR)

Follow-up: 8 weeks post-op



Updated dietary recommendations



Updated dietary recommendations



- Psyllium husks (0,3 g/kg/day)
2 tablespoons/day



ANTI-GULPING BOWL



- Vivomixx 450 bn sachets (100 bn/10 kg/day)
1 sachet/day



Emergency X-ray



Emergency procedures



- Mechanical obstruction → Fecal disimpaction
- Hypovolemic shock → Fluid resuscitation
- Acute vomiting → Antimetetics



KEY VALUES	per 100g	100g dry matter
Protein	7.5g	28.8g
Fat content	1.7g	11.1g
Carbohydrate	12.4g	52.2g
NRE	12.4g	52.2g
Dietary fibre	2.7g	17.2g
Crude fibre	1.7g	6.5g
Omega-6	0.3g	1.2g
Omega-3	0.03g	0.1g
EPA/DHA	0.02g	0.1g
Calcium	0.24g	0.9g
Phosphorus	0.19g	0.7g
Sodium	0.06g	0.2g
Potassium	0.12g	0.5g
Metabolizable energy*	253 kcal	253 kcal

INTRACTABLE VOMITING

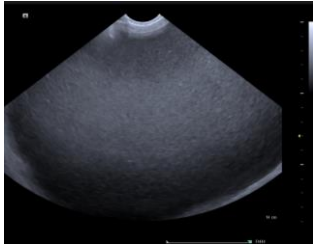
- DER ≥ 1850 kcal
- Feeding amount
1 (400 g) can
- Daily energy intake
370 cal

BW= 27.8 kgs

RCS=1/9

MCS=severe muscle loss

Urinary bladder ultrasound



Diagnostic suspect



"**Dysautonomia** is a degenerative polyneuropathy characterized by neuronal degeneration within the autonomic, somatic, central, peripheral, and/or enteric nervous system causing multisystemic effects"



(Detweiler et al., 2002)



(Longshore et al., 1996)

Treatment plan



10 mg TID; PO

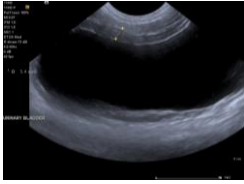


0,5 mg/kg TID; PO



≥ 1850 kcal

Outcome



No signs of urinary bladder overdistension



Absence of rectal tenesmus

Body weight gain of 2 kilograms in 14 days!



"Give him this laxative
and run like hell."

CartoonStock.com
