

Abstract:
Circulating eosinophilia, hepatic eosinophilic infiltrates, eosinophilic enteritis and accompanying abdominal pain, vomiting and diarrhoea were successfully managed by dietary modification in a border terrier in a case which showed marked similarities to hypereosinophilic syndrome.

Introduction:
Hypereosinophilic syndrome has been rarely reported in dogs⁽¹⁻⁵⁾. It is characterised by a persistent circulating eosinophilia with evidence of organ infiltration resulting in associated clinical signs and without an identifiable cause⁽⁶⁾. Whilst circulating eosinophilia has many possible underlying causes, the multi-organ infiltration in this case raised suspicion of hypereosinophilic syndrome.

History:
A young entire male Border Terrier presented with a 10 day history of episodic abdominal pain, trembling, vomiting and soft faeces. The patient had had infrequent episodes of vomiting and diarrhoea in the 6 months prior to presentation.

Physical Examination:

- Bright, alert and responsive
- Discomfort on cranial abdominal palpation
- Multiple small suspected masses palpable mid-abdomen
- Normal neurological examination

Diagnostic Tests		
Haematology	marked hypereosinophilia	10.9 x 10 ⁹ /L (0.1 - 1.2 x 10 ⁹ /L)
	mild neutrophilia	12.0 x 10 ⁹ /L (3.0 - 11.5 x 10 ⁹ /L)
	mild monocytosis	2.2 x 10 ⁹ /L (0.0 - 1.3 x 10 ⁹ /L)
Biochemistry	mild hypoalbuminaemia	25g/l (26- 40g/l)
	marked elevation in ALT	1260 U/L (13-28 U/L)
	mild elevation in ALKP	313 U/L (12-83 U/L)
Canine specific pancreatic lipase	within normal limits	41.0 ug/L (0.0 - 200.0 ug/L)
Ionised calcium	within normal limits	1.36 mmol/L (1.25-1.45 mmol/L)
Serological markers of gluten sensitivity	marked elevation in anti-gliadin IgG	0.42 (> 0.25)
	normal anti-transglutaminase Ig	0.4 (<0.41)
Urinalysis	unremarkable, USG 1.047, negative culture	
Abdominal CT	marked hepatic and jejunal lymphadenopathy (fig. 1)	
	moderate colic and splenic lymphadenopathy (fig. 2)	
	mild medial iliac lymphadenopathy	
Lymph node cytology	eosinophilic and neutrophilic lymphadenitis, consistent with pyogranulomatous and eosinophilic inflammation	
Histology	liver: chronic hepatitis with marked eosinophilic infiltrate	
	jejunum: marked eosinophilic enteritis	
	lymph nodes: non-specific follicular hyperplasia and prominent drainage response	
Lymph node culture	aerobic, anaerobic and fungal culture negative other than isolation of Enterococcus spp from enrichment broth	

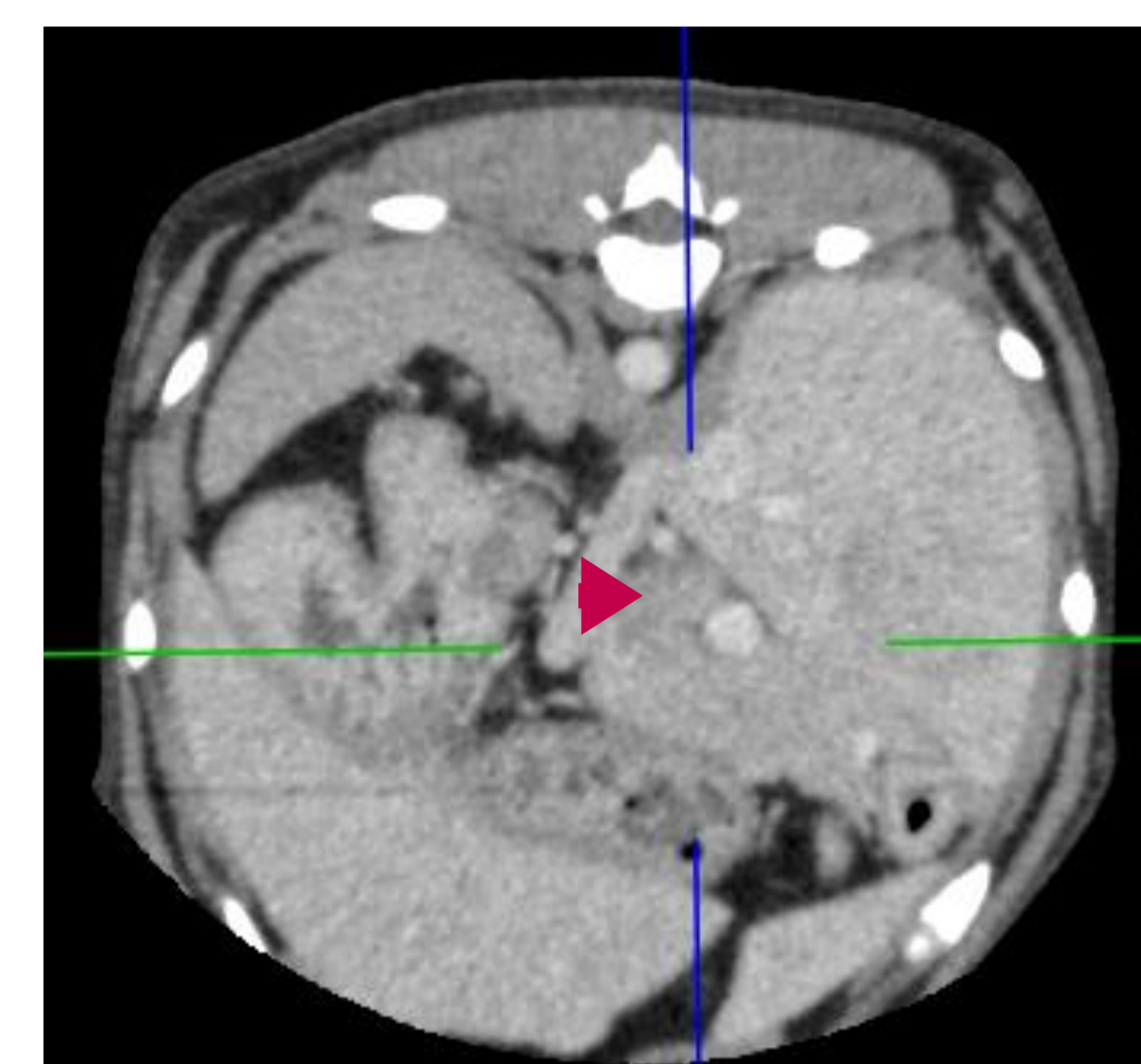


Fig. 1 CT image showing marked enlargement of the hepatic lymph nodes measuring up to 17mm diameter

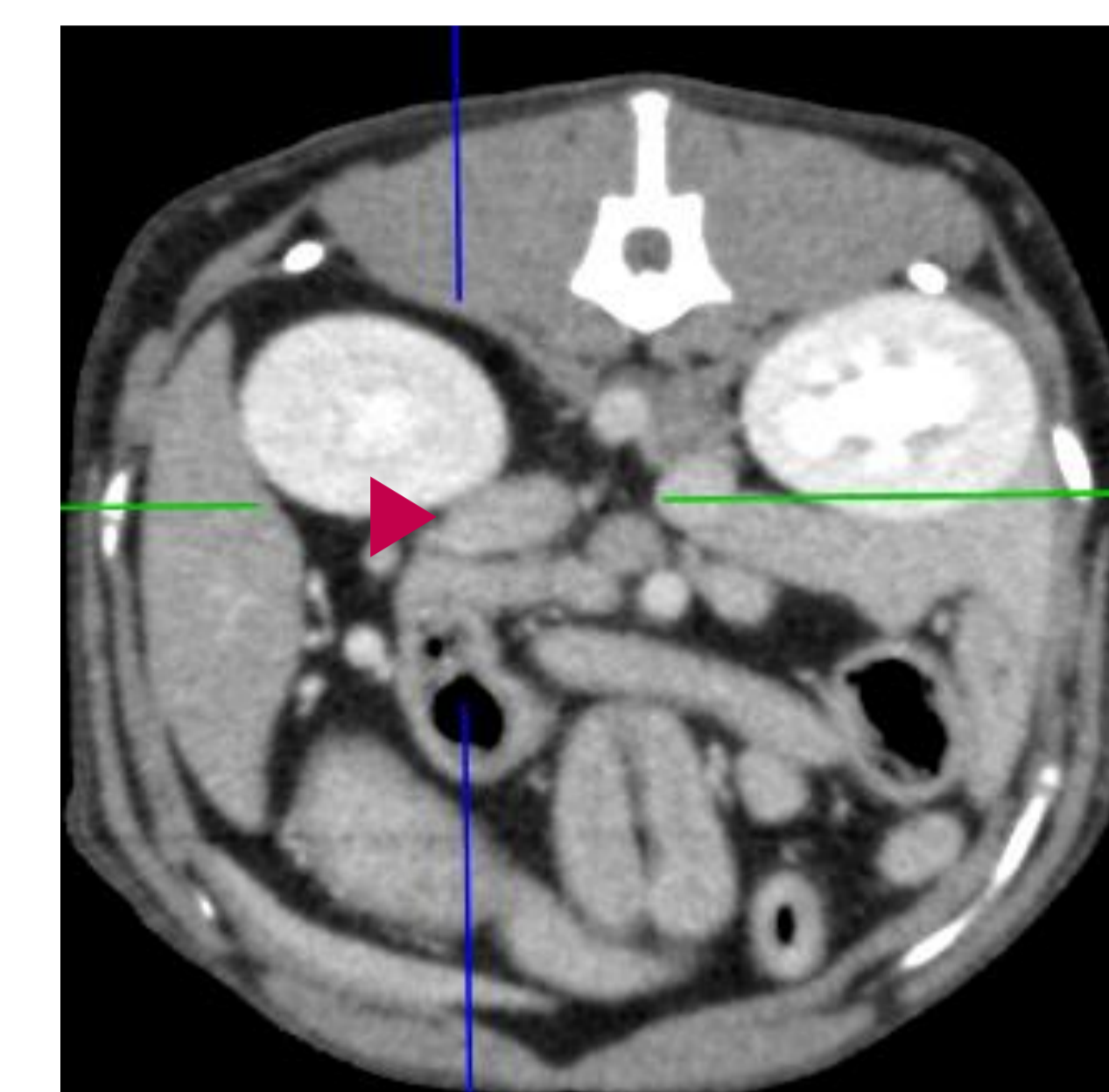


Fig. 2 CT image showing moderate enlargement of the colic and splenic lymph nodes

Treatment:

- Fenbendazole: 50mg/kg PO SID for 5 days
- S-Adenosylmethionine: 100mg PO SID for 6 weeks
- Ursodeoxycholic acid: 10 mg/kg PO SID
- Hydrolysed and gluten-free diet

Response to treatment:
Intermittent vomiting, diarrhoea and abdominal discomfort persisted 4 weeks after implementing treatment. On questioning, diet had been changed to a gastrointestinal support diet. Diet was changed to a hydrolysed, gluten-free diet and no further episodes were reported at follow-up 1 month or 4 months later.
ALT and ALKP normalised 6 weeks after implementing initial treatment at which point S-adenosylmethionine and ursodeoxycholic acid were stopped. Eosinophilia gradually reduced and completely resolved 3 months after starting hydrolysed, gluten-free diet.

Diagnosis:
Dietary hypersensitivity

Discussion and conclusions:

- Whilst this case did not strictly meet the criteria for hypereosinophilic syndrome as an underlying cause was identified, it did bear many resemblances to previously reported cases⁽¹⁻⁵⁾.
- Eosinophilic enteritis is most commonly associated with parasitism and dietary hypersensitivity⁽⁷⁾.
- Elevations in either Anti-gliadin IgG or anti-transglutaminase Ig can be associated with gastrointestinal signs⁽⁸⁾ though it is not possible to ascertain if gluten was the sole dietary intolerance in this case.
- Hepatic eosinophilic infiltration may be associated with parasitism (usually localised) or drug-induced (diffuse) but is generally considered a non-specific reactive change⁽⁹⁾.
- This case demonstrates the potential importance of dietary intolerance/allergy in disseminated eosinophilic disease

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