

# Granulomatous Colitis : more than a canine disease?

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## Introduction

- ✓ Granulomatous Colitis (GC) is a rare form of inflammatory bowel disease (IBD) predominantly diagnosed in young Boxers and French Bulldogs<sup>1,2</sup>. It is usually associated with mucosally invasive *E.coli* that are able to persist in macrophages<sup>1</sup>.
- ✓ Eradication of invasive *E.coli* correlates with remission of clinical signs and histopathological abnormalities<sup>3</sup>. Genetic analysis of affected dogs has implicated a region on chromosome 38 that is involved sensing and killing of *E.coli* in other species<sup>4</sup>.
- ✓ Thus it is emerging that *E.coli* associated GC in Boxers and French bulldogs is likely a heritable genetic defect sensing or killing of intracellular *E.coli*. *E.coli* associated Granulomatous colitis has not been documented in cats.

## Case Report

- ✓ A 4 years old male neutered cat was referred for chronic intermittent hematochezia and fecal incontinence of 7 months duration. No weight loss was reported and the cat was keeping a good appetite. Symptomatic treatments (including deworming, metronidazole and hypoallergenic diet) have been tried without clinical improvement.
- ✓ Physical examination, Complete Blood Count and biochemistry panel (including folate and cobalamin) were within normal limits.
- ✓ Fecal flotation, PCR for *Trichomonas* and *Giardia* was negative.
- ✓ Abdominal sonography revealed a colonic wall thickness.
- ✓ Colonoscopy showed an irregular and thickened colonic wall with multiple erosions, compatible with ulcerative colitis or infiltrative neoplasia (Figure 1).
- ✓ Histopathologic analysis revealed a multi-focal ulceration of epithelium, with marked PAS positive cell and a moderate diffuse lympho-plasmacytic infiltration of the lamina propria (Figure 2). Toluidine-blue and Fite-Faraco stains did not show mast cell infiltration or mycobacteria-like bacteria, respectively.
- ✓ Rectal wall culture was positive for *E.Coli* and negative for *Salmonella*, *Yersinia* and *Campylobacter*. Mucosal *E.coli* were susceptible to multiple antimicrobials that can penetrate macrophages.
- ✓ Fluorescence In Situ Hybridization (FISH) of colonic biopsies revealed multifocal clusters of intracellular *E.Coli* (Figure 3).
- ✓ Treatment with enrofloxacin (5mg/kg SID for 6 weeks) led to the complete resolution of clinical signs with remission sustained for 4 months to date.

## Conclusions

- ✓ *E.coli* associated granulomatous colitis can also affect cats and should be considered on the differential diagnosis of chronic hematochezia.
- ✓ Further studies are needed to assess molecular, genetic and immune pathways underlying intracellular invasion by *E.coli* in cats with GC.

## References and Acknowledgements

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Figure 1: Colonoscopy showed thick irregular mucosa with multiple superficial ulcers (1st image 11'oclock). The mucosa was friable and bled easily during the procedure.

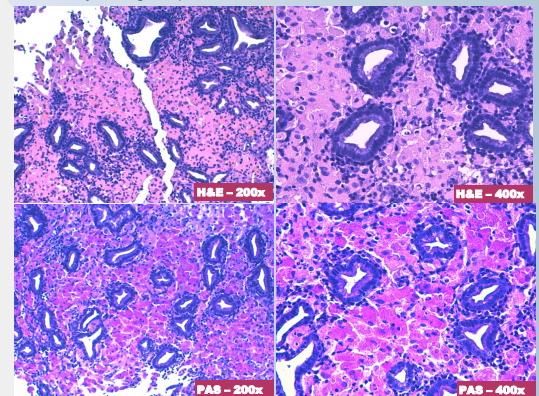


Figure 2. : Histopathologic of colonic biopsies showed marked accumulation of PAS positive macrophages and a moderate diffuse lympho-plasmacytic infiltration.

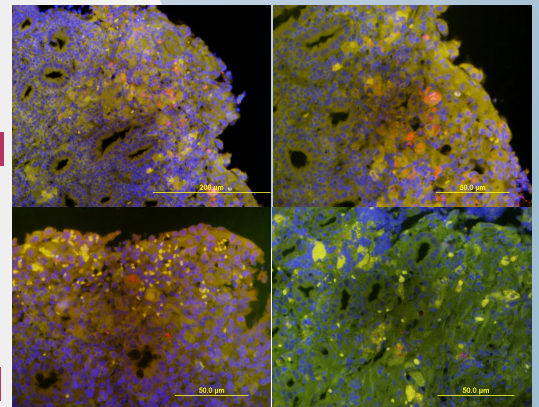


Figure 3. : FISH of colonic biopsies showing multifocal clusters of invasive intracellular rods (EUB-338, upper row) that hybridized with a probe to *E.Coli/Shigella* (lower row), similar to granulomatous colitis in dogs.