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Colonoscopic diagnosis and management of colitis in a dog

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Abstract

Colitis refers to the inflammation of colon mucosa resulting in inflammatory bowel disease which affects large intestine. One of the most efficient and appropriate tool in examination of large intestine is colonoscopy. A 3 years old female intact German Shepherd dog weighing about 20 Kgs presented to Small Animal Medicine Unit, VCC, VCRI, Namakkal with the history of inappetence and straining while defecation with raw blood in faeces for the past 2 weeks. On Clinical examination and abdominal palpation animal evinced pain. Digital rectal examination showed thickened mucosal wall and scanty faeces with blood and mucous. Haematological examination revealed leukocytosis with neutrophilia. Abdominal radiography showed gas-filled intestinal loops. Abdominal ultrasonography revealed thickened intestinal loops. Contrast radiography with barium meal revealed no radiolucent foreign body. Colonoscopic examination showed hyperemic, ulcerated and thickened mucosal wall. The dog was treated with Tablet. Mesalazine and Prednisolone which resulted in the uneventful recovery of the animal.

Keywords: Dog, colitis, colonoscopy, ulceration, Mesalazine, prednisolone

Introduction

Colitis is one of the inflammatory bowel disease affecting the mucosal wall of the colon resulting in chronic intestinal disease in dogs. Colitis is manifested as hematochezia and dyschezia. It may be of many types Plasmacytic-lymphocytic colitis, histiocytic colitis more common in boxers (Churcher *et al.*, 1997) [2], parasitic colitis, infectious colitis, auto-immune colitis, iatrogenic colitis and ischemic colitis. The animal with colitis have the common clinical symptoms like mucoid faeces, tenesmus, haematochezia, mucoid faeces, constipation, dyschezia. Ultrasound is a non-invasive tool to measure the thickness of the intestine. Colonoscopy is performed to determine the occurrence of disorders or abnormalities in the large intestine (Cartwright *et al.*, 2016) [1]. Colonoscopic examination with endoscopically guided mucosal biopsy is the basis for confirming chronic inflammatory diseases (Rychlik *et al.*, 2007; Rychlik and Kaczmar, 2020) [6, 7]. Colonoscopy helps to visualizing the lesions in mucosal inflammation, confirm by biopsy and to estimate the efficiency of the treatment strategy applied. This study sets out a colonoscopic diagnosis and medical management of colitis in a dog.

Case history and diagnosis

A three years old intact German Shepherd bitch weighing about 20 Kgs was presented with the history of inappetence and straining while defecation with raw blood in faeces for the past 2 weeks. On clinical examination the animal was dull and depressed with slight dehydration and with a body temperature of 37.8 °C, heart rate of 128 beats per min, respiratory rate of 27 breath per min, capillary refilling time of less than 2 sec with other vital parameters were normal. Abdominal palpation revealed pain. Digital rectal examination showed thickened mucosal wall and scanty faeces with blood and mucous. Faecal sample and whole blood were collected for faecal, haematological and biochemical analysis. Animal subjected to abdominal radiography. Ultrasonography was performed using a real time B mode 5 to 6.5 MHz probe convex transducer. For further etiological and confirmative diagnosis, animal was subjected to colonoscopy with the consent of pet owner and advised to withhold the food for 18 to 24 hours.

On the day of colonoscopy phosphate enema was given for better visualization of the intestinal tract. The animal was sedated by administering Inj. Xylazine at the dose rate of 1 mg/kg intramuscular and Inj. ketamine at the dose rate of 5 mg/kg intramuscularly. Colonoscopy was performed by placing the animal in left lateral recumbency with flexible gastrointestinal video fiberscope (Olympus GIF-V70). During the procedure, the entire colon was visualized and an endoscopic guided biopsy was collected from the colon mucosa for histopathological examination.

Results and Discussion

Haematological examination revealed leukocytosis with neutrophilia (Table 1). Serum biochemical analysis were within the reference values. Faecal analysis revealed no parasitic ova or Oocyst. Radiography revealed gas filled intestinal loops. Abdominal ultrasonography revealed thickened intestinal loops (Fig 1). Hyperaemic ulceration (Fig 2) and mucosal thickening (Fig 3) and at the level of transverse colon were observed under colonoscopy. Histopathology revealed moderate infiltration of mononuclear cells. Based on the above observations, the case was etiologically diagnosed as colitis. Animal was treated with Inj. Enrofloxacin @ 5 mg/kg, Inj. Prednisolone @ 1 mg/Kg and Inj. Pantoprazole 1mg/kg on the day of admission. Further the animal was managed with oral medications viz. Tab. Enrofloxacin @ 5 mg/Kg, Tab. Prednisolone @ 1 mg/Kg, Tab. Metronidazole @ 10 mg/Kg, Tab. Mesalazine @ 12.5 mg/Kg and Tab. Pantoprazole @ 1 mg/Kg for a week. The animal had an uneventful clinical recovery (Fig 4). The

leukocytosis with neutrophilia becomes normal after a week of post-treatment. The animal was followed up for a period of eight months post-medical treatment. Animal voided normal stool with no reoccurrence of colitis.

Canine inflammatory bowel disease is one of the chronic enteropathic disease characterized by persistent or recurring gastro-intestinal symptoms with unknown etiology which are related to histopathological changes in large intestine (Malewska *et al.*, 2011) [5]. The classification of inflammatory bowel disease is determined by dominant type of inflammatory cells in the lamina propria of large intestinal mucosa (German, 2001) [3]. The diagnosis of the canine inflammatory bowel disease is difficult which requires vast knowledge and involvement on behalf of clinical physician (Malewska *et al.*, 2011) [5]. Mean ± SD thickness of colonic wall for small, medium and large breeds were 1.5 ± 0.3 mm, 1.4 ± 0.5 mm and 1.6±0.4 mm respectively (Nicole E Gladvin *et al.*, 2014) [4]. In this case, the mucosal wall thickening in colon was about 1.10 cm, which shows the severe degree of colitis. Patient preparation for colonoscopy involves complete rectal and colonic fecal evacuation because residual fecal material impairs visualization and may prevent complete examination. In this case, phosphate enema resulted in complete evacuation of the intestinal tract. Even though, severe colitis was visualized through colonoscopy a good clinical recovery was reported because of the combination therapy with Mesalazine and prednisolone. Churcher and Watson (1997) [2] described one severely affected dog that responded well clinically to prednisolone, sulphasalazine and dietary modification.

Table 1: Haematological analysis

S. No.	Parameters	Present case	Normal range
1	Hb (g/dl)	12.1	12-19
2	PCV (%)	38	37-57
3	RBC (×10 ⁶ /µl)	5.2	5.0-9.0
4	WBC (×10 ³ /µl)	25	5.0-15.0
5	NEUTROPHILS (%)	73	60-75
6	LYMPHOCYTES (%)	19	17-21
7	MONOCYTES (%)	8	2-10
8	PLATELET COUNT (10 ⁵ /µl)	4.9	1.6-5.1



Fig 1: Ultrasonography revealing thickened intestinal loop

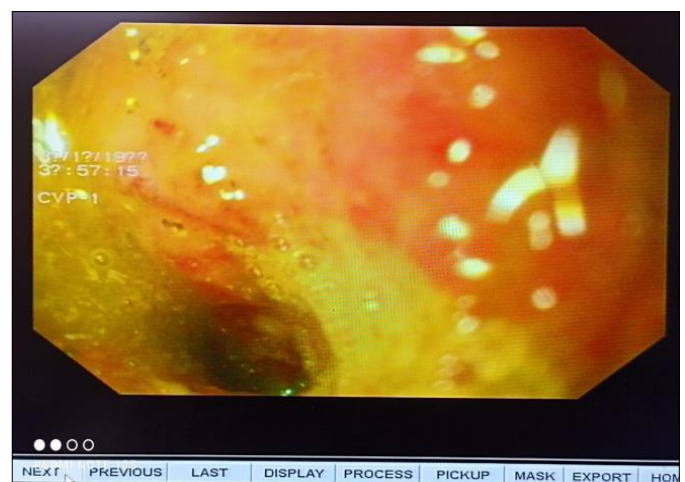


Fig 2: Colonoscopy revealing hyperemic ulceration

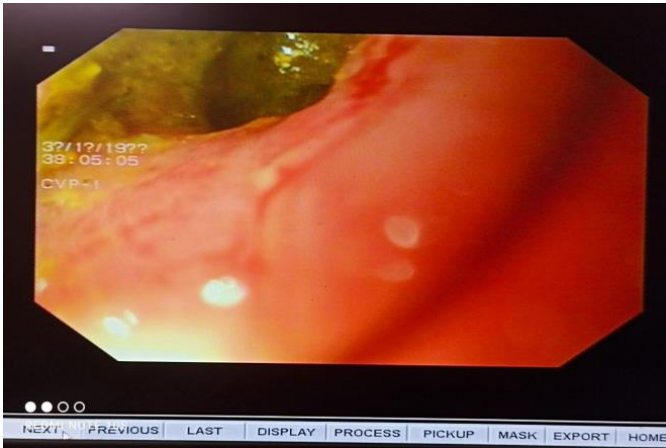


Fig 3: Colonoscopy revealing mucosal thickening



Fig 4: Animal recovered after successful medical management

Conclusion

From the present case findings, it may be concluded that colonoscopy is the basic examination technique for diagnosis of inflammatory bowel disease in dogs. In this study, the therapy with Mesalazine and prednisolone helped in early recovery of colitis in dog.

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