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Colonoscopy to diagnose chronic ulcerative colitis in an 11 year old Maltese

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ABSTRACT: An 11-year-old castrated male Maltese was examined for increased frequency of defecation, mucus in feces, and chronic diarrhea with hematochezia. The dog was referred to Veterinary Teaching Hospital, Faculty of Veterinary Medicine, IPB University for further evaluation. Ultrasonography and colonoscopy were performed to further diagnose. Abdominal ultrasonography was taken using a linear probe with frequency 6-11 MHz. Colonoscopy was performed using colonoscope with tube length 700 mm and diameters 10 mm under anesthesia. Abdominal ultrasonography showed that the dog had a mucocele gall bladder, cholecystitis, hepatitis, slight-mild splenitis, nephrolithiasis, urolithiasis and thickened of the duodenal wall due to inflammatory bowel diseases. Colonoscopy showed ulceration and hemorrhage along the surface of the colon, whereas hyperemia only seen on the ascending colon. Based on endoscopic examination, the dog was diagnosed with severe and chronic ulcerative colitis. The authors recommended that the colonic biopsy should be undertaken in the dog presented with chronic ulcerative colitis.

Keywords:
Colonoscopy, dog, inflammatory bowel diseases, ulcerative colitis, ultrasonography

■ INTRODUCTION

Colonoscopy was an examination performed to determine the occurrence of disorders or abnormalities in the large intestine (colon) and rectum that often cause symptoms such as abdominal pain, blood in the stool, chronic diarrhea, defecation disorders or abnormal images in the intestine on radiography or ultrasonography examination (Cartwright *et al.* 2016). Ulcerative colitis in the dog was a condition that may occur following the ingestion of sharp foreign objects, primary GI neoplasia or inflammatory bowel disease (Argenta *et al.* 2018; Davies *et al.* 2004; Stokes *et al.* 2001). Dogs with ulcerative colitis may present lethargy, fever, anemia, dehydration, inappetence, weight loss vomiting, increased frequency of defecation, mucus in feces, and chronic diarrhea with hematochezia (Cain *et al.* 2017).

■ METHOD

Physical examination and complete blood were performed before colonoscopy. An abdominal ultrasonography examination was performed on the dog before endoscopy examination using a microconvex probe with frequency 4-8.5 MHz. Colonoscopy was performed under anesthesia using colonoscope with tube length 700 mm and diameter 10 mm. The dog was positioned dorsal recumbency for abdominal ultrasonography and colonoscopy. The hair on the examined area was shaved before the examination.

■ RESULTS AND DISCUSSION

An 11-year-old castrated male Maltese was examined for increased frequency of defecation, mucus in feces, and chronic diarrhea with hematochezia. The dog was referred to Veterinary Teaching Hospital, Faculty of Veterinary Medicine, IPB University for further evaluation. Abdominal ultrasonography showed that the dog had amucocele gall bladder, cholecystitis, hepatitis, slight-mild splenitis, nephrolithiasis, urolithiasis, and thickened of the duodenal wall due to inflammatory bowel disease (IBD) (Figure 1). Colonoscopy showed ulceration and hemorrhage along the surface of the colon, whereas hyperemia only seen on the descending colon (Figure 2).

The IBD is a chronic inflammatory disease that attacks the digestive tract (especially in the intestine). This disease is indirectly caused by a reaction system in the hypersensitivity of the immune system that is unable to distinguish antigens, including the digestive tract and food bacteria (Cain *et al.* 2017; Davies *et al.* 2004). This condition was very common in older dogs because the more age increases the function of the organs also decreases including the organs in the digestive tract (Cartwright *et al.* 2016). The IBD is divided into two types, namely ulcerative

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colitis (chronic inflammation of the large intestine) and chronic diseases (chronic inflammation of the small intestine) (Davies *et al.* 2004).

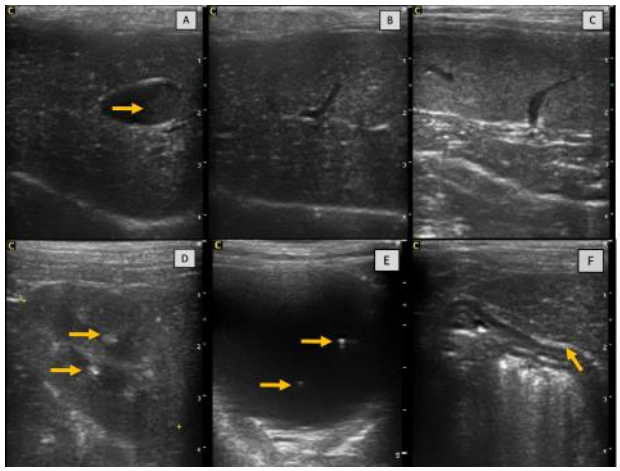

Figure 1. Sonogram of abdominal organs: [A] biliary sludge in gall bladder (arrow), [B] enlarged size of right liver lobe; [C] enlarged size of spleen; [D] multiple hyperechoic mass (arrow) in the right kidney [E] stones (arrow) in the urinary bladder (arrow); [F] thickened of the proximal duodenal wall (arrow).

The cause of inflammatory bowel diseases was not known. However, several factors that can usually trigger IBD including genetic factors, infection factors, immunologic factors, and environmental factors. In general, IBD is usually caused by an infection of the digestive tract due to pathogenic agents such as bacteria and viruses. Some case reports state that the bacterium *Pseudomonas* sp. is a common bacterium found when cultured isolates were carried out in patients diagnosed with IBD. Pseudomonas bacteria are normal flora or organisms commonly found in the intestinal tract. This bacteria has a cytopathic effect (bacteria that can damage cells or interfere with cell development). These bacteria can irritate the intestinal cell wall so that it can cause hemorrhage (bleeding) in the digestive tract (Cain *et al.* 2017; Cartwright *et al.* 2016).

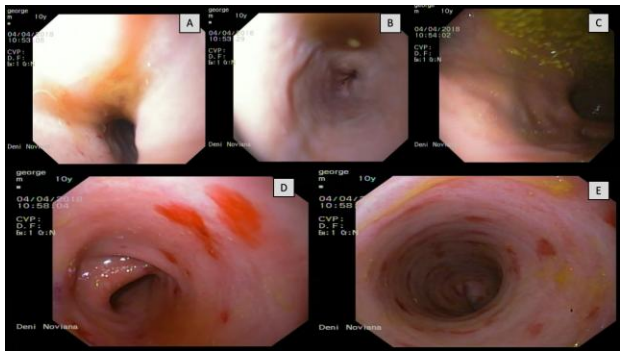

Figure 2. Colonoscopy showed hyperemia in esophagus pars thoracalis [A]; normal stomach sphincter [B,C]; ulceration and hemorrhage along the surface of colon descendens [D,E].

Several recent studies have shown that the causes of IBD can also occur due to the use of non-steroidal anti-inflammatory drugs (NSAIDs). This drug was usually used as an arthritis medicine. This was because the drugs were able to inhibit the cyclooxygenase 1 enzyme which served as a synthesis of PGE2 (prostaglandin) and the production of mucus where the material is used to protect the small intestinal mucosa from bacterial and viral infections that cause infection (Argenta *et al.* 2018; Stokes *et al.* 2001). To find out the exact cause of this disease, the colonic biopsy was recommended at the time of colonoscopy.

■ CONCLUSION

The result of abdominal ultrasonography and colonoscopy examination indicated this dog had inflammatory bowel disease and chronic ulcerative colitis.

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Author Contributions

The manuscript was written through the contributions of all authors. / All authors have approved to the final version of the manuscript. / ‡These authors contributed equally.

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