**Ultrasound Superior for Diagnosing Intestinal Obstruction**

Acute vomiting is a common problem in dogs, and intestinal obstruction is one of the major diagnostic differentials. Determination of the underlying cause of acute vomiting is critical to treatment, especially if surgery is needed. In this study, 82 adult dogs with acute vomiting underwent 3-view abdominal radiography (left lateral, right lateral, and dorsal recumbent) and abdominal ultrasonography. Imaging was reviewed by board-certified radiologists. All dogs additionally underwent one of the following: exploratory laparotomy, necropsy, or follow-up telephone call. An intestinal foreign body was confirmed via surgery or necropsy in 27 of 82 dogs. Agreement between 3-view radiography and abdominal ultrasonography was considered moderate.

Radiography resulted in a definitive diagnosis of an obstructive or nonobstructive lesion in 70% of patients. In comparison, ultrasonography resulted in a correct diagnosis in 97% of patients. A radiographic diagnosis of abdominal obstruction was based on finding segmental small-intestinal (SI) dilation, plication, or foreign body. Eight of 27 dogs with intestinal foreign bodies lacked segmental dilation. Of these, 4 had linear foreign bodies. Ultrasonographic diagnosis was based on detection of an obstructive object, sonographic signs of plication, or segmental SI dilation. The presence or absence of moderate to severe jejunal diameter enlargement (> 1.5 cm) was a key ultrasonographic finding; if present, a thorough investigation for SI obstruction is warranted.

**Commentary:** This report shows that abdominal ultrasound is the more accurate test for diagnosing SI obstruction in vomiting dogs. Abdominal radiographs still play an important diagnostic role, however. Ultrasound may not be available in many practices, whereas good-quality radiographs are easily obtained and evaluated. With ultrasound, equipment quality and operator skill are always a factor. Therefore, depending on the clinical situation, both tests may serve an important role for diagnosis of SI obstruction in vomiting dogs.—Jennifer Ginn, DVM, Diplomate ACVIM


**Immunity, Nutrition, & Their Relationship**

Both nutrient metabolism and immunity are essential for survival, and their organ systems and signaling pathways have co-developed over time. The gut can be considered the largest immune organ with over 65% of the body’s immune cells residing there. Nutrition interacts with the immune system at many levels that the author categorizes into 4 stages. Stage I is passive and entails providing complete nutrition, including dietary energy; vitamins A, C, and E; and minerals. Stage II is also passive and involves optimizing the key nutrients critical for the immune cells, thus maximizing immune system function. Various beneficial strategies that can be used at this stage include calorie restriction, increasing levels of antioxidants, and use of prebiotics. Stage III involves active modulation of the immune system with nutrients. An example would be use of bovine colostrum. Milk bioactives from bovine colostrum contain immunoglobulins, cytokines, lactoferrin, and lactoperoxidase, all of which can influence the immune system. Research in adult dogs fed bovine colostrum demonstrated enhanced immune status as measured by the dogs’ response to canine distemper vaccine and an increased level of gut-associated lymphoid tissue activity.

Stage IV is personalized nutrition. Although this area is still in its infancy, stage IV is currently used, for instance, in dietary management of diabetes mellitus or maintenance of a healthy lipid profile for managing cardiovascular disease risk. As research advances our understanding of the complex physiologic networks in health and disease and of the interaction of nutrition and the immune system, we will be able to better harness the power of immunonutrition. From Nestlé Purina Research, St. Louis, Missouri

**Commentary:** The gut is the largest immune organ in the body, and recent data demonstrate that proper nutrition and a proper balance of enteric microbiota have a crucial impact on host health. In recent years much research has been conducted to understand how nutrients (e.g., macro- and micronutrients, prebiotics, etc) can influence the immune system to prevent or ameliorate various disorders. This review article provides an overview about the current translational knowledge in immunonutrition. We are still in the phase of exploring this highly complex network, but ultimately such approaches may lead to development of optimized and individualized nutritional recommendations for our patients.—Jan Suchodolski, DrMedVet, PhD