

What Is Your Diagnosis?

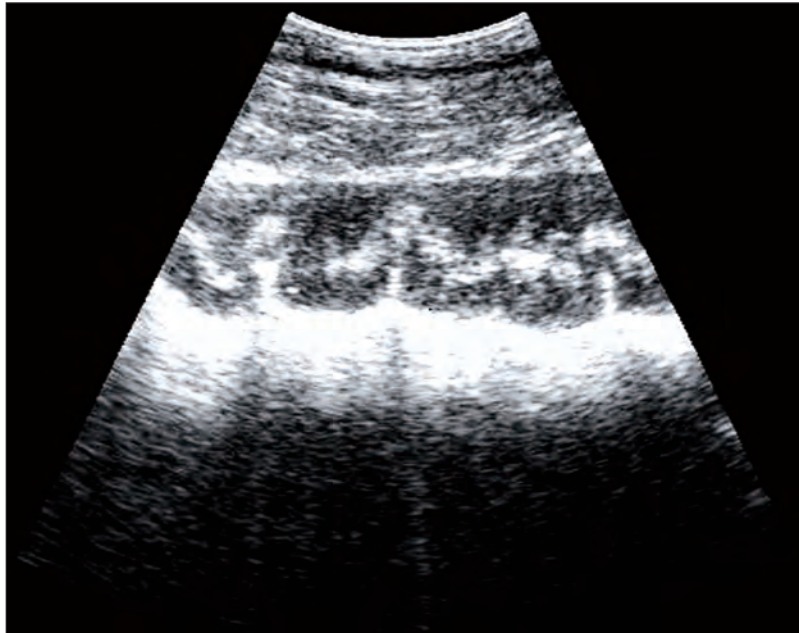


Figure 1—Ultrasonographic image of the left ventral colon in a 7-year-old Andalusian mare evaluated for diarrhea, signs of abdominal pain, anorexia, and lethargy of 5 days' duration.

History

A 7-year-old Andalusian mare was evaluated for diarrhea, signs of abdominal pain, anorexia, and lethargy of 5 days' duration. The horse's vaccination status was adequate, and anthelmintics had been routinely administered for parasites. The horse was fed oats (2 kg [4.4 lb]) twice daily and had access to alfalfa hay and water ad libitum. Abnormal physical examination findings included severe dehydration, increased capillary refill time, purple mucous membranes, and increased abdominal sounds. Transcutaneous ultrasonography of the colon was performed (Figure 1).

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page ▶

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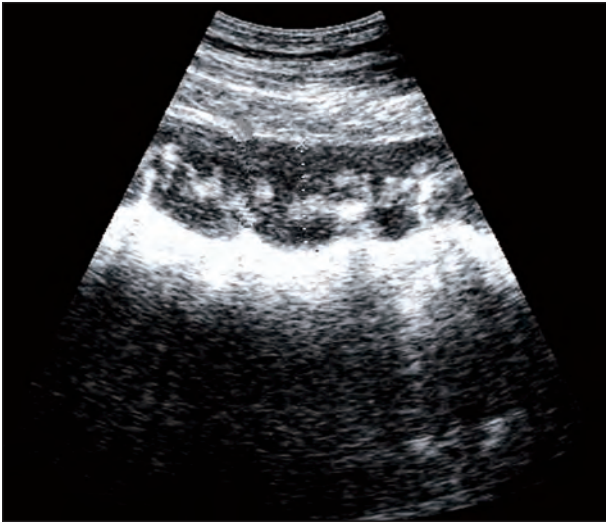


Figure 2—Same ultrasonographic image as Figure 1. Notice the marked thickening (3.09 cm) of the wall of the left ventral colon (dotted line). This mural thickening may reflect edema and diffuse cellular infiltrate.

Diagnostic Imaging Findings and Interpretation

Marked thickening (3.09 cm) and an increase in echogenicity of the wall of the left ventral colon are evident (Figure 2). Differential diagnoses for these ultrasonographic findings included any inflammatory and infiltrative disease of the colon.

Comments

Ultrasonographic evaluation of the gastrointestinal tract is useful in the evaluation of horses with colic and other intestinal diseases. For examination of superficial abdominal structures, a 5.0- to 7.5-MHz transducer can be used. Ultrasonographic evaluation of organs deep within the abdomen requires use of a 3.5- or 4.0-MHz transducer. Although transrectal ultrasonography only permits access to structures within the caudal portion of the abdomen, transcutaneous ultrasonography permits detailed evaluation of the large colon and the cecum.^{1,2} The contents of the large intestine are composed predominantly of gas and ingesta, which cause marked acoustic shadowing, which prevents imaging of the entire intestinal diameter and any structures deep to the large intestine. Findings such as loss of the sacculated appearance of the large colon, increased thickness of the intestinal wall, and abnormal motility are reliable indicators of large intestinal disease.³

In the horse of this report, a marked increase in the thickness of the wall of the left ventral colon (3.09 cm vs 0.2 to 0.4 cm in clinically normal horses) and an increase in echogenicity were evident, suggestive of inflammatory or infiltrative disease.^{3,4a} However, neither abnormalities in other abdominal viscera nor abdominal lymphadenopathy were detected. Although ultrasonography did not permit a definitive diagnosis to be made, given the history and clinical signs in this horse, the ultrasonographic findings were likely to have been caused by acute colitis. Abnormal findings detected on CBC and serum biochemical analyses included leukope-

nia, hyperfibrinogenemia, hypoproteinemia, hypoalbuminemia, hyponatremia, hypochloremia, hypocalcemia, and metabolic acidosis, which were also compatible with a diagnosis of acute colitis. *Salmonella enteritidis* was identified on microbial culture of feces. Susceptibility testing was also performed.

Infection by *Salmonella* spp is the most frequently diagnosed cause of diarrhea in horses. Salmonellosis is typically characterized by an acute septic colitis resulting in profuse diarrhea. In most horses treated appropriately, the diarrhea and the associated metabolic disorders improve within 7 to 10 days of the onset of illness. Horses that have severe diarrhea and septicemia for ≥ 10 days are unlikely to survive because of extensive loss of colonic mucosa. In horses, medical treatment of acute colitis caused by *Salmonella* infection includes IV administration of fluids and plasma; nutritional support; and administration of endotoxin antisera, anti-inflammatory drugs, antisecretory agents, and antimicrobials.⁵

The horse of this report was treated intensively with polyionic fluids and plasma to improve the electrolyte and acid-base imbalance. Feeding the horse via a nasogastric tube provided enteral nutritional support. Low doses of flunixin meglumine (0.25 mg/kg [0.1 mg/lb], IV, q 8 h) were used to control clinical signs of endotoxemia. Broad-spectrum antimicrobial treatment (potassium penicillin [50,000 U/kg {22,727 U/lb}], IV, q 6 h) and gentamicin sulfate [6.6 mg/kg {3.0 mg/lb}], IV, q 24 h) was administered to prevent bacteremia before isolation of the causative agent. After results of susceptibility testing were obtained, antimicrobial treatment was changed to enrofloxacin (7.5 mg/kg [3.4 mg/lb], PO, q 24 h). After 15 days of treatment, the consistency of the feces had improved and the horse was able to maintain hydration by drinking water with supplemental electrolytes. Signs of abdominal pain and endotoxemia were no longer detected, and the horse slowly increased its food intake. Although the thickness of the colonic mucosa was increased as determined ultrasonographically, the horse was discharged because of economic reasons; enrofloxacin treatment was continued by the owner for an additional 15 days. Three months after discharge, the owners reported that the horse had a good appetite and was gaining weight, although the feces were soft.

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