History

A 12-year-old 7.4-kg (16.3-lb) castrated male mixed-breed dog was evaluated because of a 2-day history of vomiting, anorexia, lethargy, tenesmus, and stranguria. The dog had a history of bilateral perineal hernias. The right-sided hernia had been surgically repaired approximately 3 years ago. The left-sided hernia had been managed medically with stool softeners and periodic digital evacuation of feces prior to initial evaluation.

On physical examination, the dog had a tense abdomen, with signs of pain on abdominal palpation; individual abdominal organs could not be evaluated on abdominal palpation. There was a soft, painful swelling present in the left perineal region. On digital rectal examination, a rectal diverticulum was palpable on the left side. Complete blood count revealed mild, mature neutrophilia (22,990 neutrophils/µL; reference range, 5,500 to 16,900 neutrophils/µL), monocytosis (3,030 monocytes/µL; reference range, 300 to 2,000 monocytes/µL), and thrombocytosis (579,000 platelets/µL; reference range, 175,000 to 500,000 platelets/µL). Serum biochemical analysis revealed a mildly high serum alkaline phosphatase activity (376 U/L; reference range, 23 to 212 U/L). All other hematologic parameters were within reference limits. Radiographs of the abdominopelvic area were obtained (Figure 1).

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

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The urinary bladder is not visible in the caudal aspect of the abdomen (Figure 2). There is a soft tissue opacity on the left side in the perineal area; within the soft tissue opacity, displaced and herniated loops of small intestine are evident. A tubular fluid opacity is evident on the lateral view from the vicinity of the right renal pelvis extending caudally to the level of L7.

Both the possibility of a postrenal obstruction as well as the herniated loops of small intestine indicated the need for surgery. However, to aid in localization of the urinary bladder, positive contrast cystography was performed beforehand. A urinary catheter was passed into the urethra to the bladder, and 1.5 mL of iodinated contrast medium was injected. On the positive contrast cystogram, the urinary bladder appears caudally displaced within the pelvic cavity (Figure 3). Although the urinary bladder is not fully distended by the small volume of contrast medium used, its abnormal position is easily identified. A small volume of contrast was used to avoid entrapping the urinary bladder in an abnormal location.

Treatment and Outcome

The patient was taken to emergency surgery because of the severity of the clinical signs and because of the possibility of obstruction or vascular compromise of the herniated structures. Both small intestinal loops and the urinary bladder were contained in the hernial sac. No vascular compromise or obstruction was evident. No abnormalities were observed in the kidneys or ureters. An exploratory laparotomy, perineal hernia repair by use of the internal obturator transposition technique, and cystopexy were performed. The patient recovered from anesthesia without incident.

Comments

The patient’s previous medical history, clinical signs (stranguria, vomiting, and signs of abdominal pain), and physical examination findings were suggestive of complications of a perineal hernia. Because of the stranguria, a herniated urinary bladder was suspected. Plain film radiographs supported that differential diagnosis because the urinary bladder was not visible in its normal location in the caudal portion of the abdomen, although the urinary bladder was not visible in the perineum either. However, plain film radiography did reveal loops of small intestine visible in the perineal swelling as well as a tubular structure visible on the lateral views extending from near the right renal pelvis to the level of L7. This structure was in the area where one would find a dilated ureter, although it probably represented the caudal vena cava, considering that there was no postrenal azotemia and that both ureters were grossly normal at surgery.

Contrast radiography was not necessary to explain the gas pattern in the perineum. The linear gas pattern in the perineum was most consistent with small intestinal loops. A barium enema could be used to highlight the colon and rectum, although an upper gastrointestinal barium series would be necessary to evaluate the small intestines. An IV pyelogram could have been used to determine whether the linear soft tissue struc-
ture identified on the lateral views was indeed a dilated ureter. In this case, however, no further imaging was pursued prior to surgical exploration.

The patient's stranguria was explained by the herniated urinary bladder, but the vomiting was not definitively explained by the radiographic findings. It is impossible to determine from the radiographs how long the structures had been herniated, and there was no radiographic or surgical evidence of obstruction or strangulation caused by the abnormal position of these organs (urinary bladder and small intestine). However, the patient's clinical signs were acute in nature and completely resolved after surgery. Additionally, there were no adhesions at surgery, indicating the herniations were not chronic. Vomiting can be a manifestation of abdominal pain from any source, possibly secondary to stretching of the mesentery in this particular case.

Perineal hernias occur when the pelvic diaphragm muscles weaken and fail to support the rectal wall, causing persistent rectal distension and potential fecal impaction.1 Potential risk factors include tenesmus, trauma, hormonal factors, and prostatic disease.2 Common complications of perineal hernias include herniation of pelvic or abdominal contents or rectal prolapse.3 Although herniation of the urinary bladder is a commonly reported complication of perineal hernias,4 there are no veterinary reports of hydrourter or hydronephrosis associated with urinary bladder herniation. Any herniated structures can become entrapped and strangulate, making this complication a surgical emergency. In addition, delay in surgical treatment can result in the formation of adhesions and inability to reduce herniated structures.5

In the case described in the present report, the herniated structures included the small intestine. This is somewhat unusual, compared with herniation of the urinary bladder or pelvic structures, because of its more cranial anatomic location normally. It was also notable that, despite the severe displacement of the small intestine, there was no damage to the mesentery or the intestine itself. The patient had been living with an unrepaired hernia for several years; it is unknown what triggered the herniation of abdominal contents that caused the clinical signs. Although this patient was castrated, it was castrated at the time of adoption 3 years earlier. In addition, the patient had no evidence of prostatic disease. The rapid decline in the patient’s status in the days prior to initial evaluation, along with findings on the survey radiographs, was diagnostic for complication of the perineal hernia and the need for prompt surgical intervention.