Septic peritonitis associated with caudal myotomy in a Tennessee Walking Horse

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A 2-year-old Tennessee Walking Horse colt was admitted for evaluation of signs of abdominal pain, inappetence, and constipation of 5 days' duration. Two days prior to the onset of signs, the owner had cut the sacrococcygeal muscles as part of a tail-setting procedure. The owner reported that the perineal area became swollen the day after the myotomy, and that he had been treating the horse with procaine penicillin G (6,000 IU/kg of body weight, IM, q 24 h). Perineal swelling had decreased over next few days, but the horse remained anorectic and had signs of mild abdominal pain. The day prior to admission, the owner had administered 1 gallon of mineral oil as an enema.

On admission, the horse appeared lethargic. Rectal temperature was 39.9 C, heart rate was 86 beats/min, and capillary refill time was > 4 seconds. Intestinal sounds were not heard on auscultation. Palpation per rectum revealed dry fecal balls within the rectum, but the rest of the intestinal tract felt empty. Myotomy incisions were located on the ventral side of the tail on each side of the midline, and 1 of the wounds contained a purulent exudate. Complete blood count revealed leukocytosis (25,000 cells/μl), with a predominance of neutrophils (82%). The PCV was 48%, and total plasma protein concentration was 7.5 g/dl. Peritoneal fluid obtained by abdominocentesis was serosanguineous in color, had a protein concentration of 4.1 g/dl, and a nucleated cell count of 34,000 cells/μl, of which 85% were neutrophils. Bacteriologic culturing of the peritoneal fluid was not performed. Initial treatment consisted of flunixin meglumine (500 mg, IV), procaine penicillin G (20,000 IU/kg, IM, q 12 h), gentamicin sulfate solution (3 mg/kg, IV, q 12 h), and lactated Ringer's solution, IV. Myotomy incisions were cleaned with a povidone iodine solution.

The next morning, the horse was still febrile (39.1 C), and had tachycardia (72 beats/min). Leukocytosis (24,000 cells/μl) with 78% neutrophils, PCV of 49%, and total plasma protein concentration of 7.8 g/dl were detected. Capillary refill time was 4 seconds, and the gums were cyanotic. Abdominocentesis was attempted, but peritoneal fluid was not obtained. Antimicrobials and fluids administered IV were continued. Flunixin meglumine (250 mg) was given for analgesia. The horse's rectal temperature decreased and feces were passed, but the tachycardia remained.

Analysis of peritoneal fluid obtained via abdominocentesis on the second day after admission revealed serosanguineous fluid with neutrophilia (73%), toxic neutrophils, leukocytosis (25,500 cells/μl), PCV of 55%, and plasma protein concentration of 5.2 g/dl. Treatment with antimicrobials, flunixin meglumine, and fluids was continued, but the horse deteriorated and died later that evening.

At necropsy, the peritoneal cavity contained approximately 20 L of serosanguineous fluid. Visceral and parietal peritoneal surfaces contained ecchymotic hemorrhages, and lymph nodes associated with the mesocolon were large and dark red. Gelatinous tissue was seen in the perineal region, extending to the scrotum. One of the myotomy wounds was filled with a yellow-green material that extended from the base of the tail along the ventrolateral side of the rectum and into the peritoneal cavity. *Escherichia coli* was isolated from the myotomy site and peritoneal fluid.

Myotomy of the ventral coccygeal muscles usually is considered a minor surgical cosmetic procedure intended to accentuate tail elevation when the horse is in motion.[1-4] Some enthusiasts of gaited-type horses believe that tail elevation enhances the appearance of the horse.[2] The procedure is performed with only local anesthesia. Skin incisions are left to heal by second intention, and aftercare involves local treatment until the wounds are healed. It has been recommended that the tail be wrapped in a sterile bandage during the early stages of healing,[4] because the tail-set harness, which is worn up to 3 months after surgery,[3] comes into contact with the myotomy site.

In the horse reported here, the myotomy site became infected after the owner cut the horse's tail.

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Examination per rectum gave no indication of the perirectal cellulitis, but necropsy confirmed that septic peritonitis was associated with the tail-cutting procedure. Though the horse was treated with penicillin, albeit an inadequate dosage, the infection migrated perirectally and caused peritonitis. Penicillin would not be considered an appropriate antibiotic for use against *E coli*. Though bacteria were not observed on cytologic examination of peritoneal fluid, bacteriologic culturing and susceptibility testing of the fluid may have been helpful. Abdominal lavage also may have been useful in treating the peritonitis.[5,6]

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