Case File: Enterolith

**SIGNALMENT AND HISTORY**

Hand A Lee

- 11-year-old, American Paint Horse, mare
- Working / performance horse / pet
- Owners report mare has experienced chronic abdominal pain and no interest in food or water that was first noticed three days prior to presentation along with a few episodes of diarrhea. The mare also had history of other episodes of abdominal pain that were treated as impactions and were resolved with medical therapy. The mare was taken to CSU due to the low grade pain that was this time, non-responsive to therapy instituted at the farm which consisted of oral fluids and analgesics.

**INITIAL EXAMINATION**

- Upon arrival, the mare had a normal attitude but showed signs of decreased appetite.
- Temperature, heart rate, and respiration were within normal limits and her manure was normal consistency.
• A naso-gastric tube was passed to verify the contents of her stomach, which was normal.
• Her gut sounds were decreased mostly on the left upper quadrant.
• Rectal palpation revealed an extremely hard impaction located at the right upper quadrant of the abdomen.
• Abdominal centesis (belly tap) was performed to verify potential abnormalities with the abdominal fluid, but the results were normal.
• Ultrasound evaluation did not reveal any abnormalities.
• Due to the chronicity of the colic signs, episodes of diarrhea and the presence of a very hard impaction on the upper right quadrant of the abdomen, radiographs of the abdomen were offered to the owner.

RADIOPHGRAPHIC AND ULTRASOUND FINDINGS
• Large (approximately 10 inches in diameter) dense, radiopaque, circular shaped mineral opacity, consistent with an enterolith.
• In the cranial ventral abdomen, there was a large amount of heterogeneous material within the large bowel, consistent with an impaction.
PROPOSED TREATMENT

- Elective colic surgery to explore the abdomen and remove the enterolith.

TREATMENT

- The mare was taken to surgery 24 hours after presentation.
- She was anesthetized and placed in dorsal position.
- Her abdomen was opened with a ventral midline incision.
- The abdominal organs and intestines were palpated and what was possible to be exteriorized was done so to allow a thorough inspection.
- A severe impaction was found in the large colon, and the enterolith could be palpated through the wall of the right dorsal colon.
- The contents of the large colon were removed through an enterotomy at the pelvic flexure, and the stone was then brought up above the incision.
- Another enterotomy was then performed over the enterolith, making sure that no contamination of the abdomen would happen.
- The second enterotomy was closed routinely.
- The intestines were then lavaged with sterile saline before being replaced inside the abdomen.
- The abdominal cavity was also lavaged with sterile saline to minimize any contamination.
- The abdomen was closed with two layers of sutures and one layer of staples.

Enterotomy over the stone.
Closure of the second enterotomy.
The stone weighted 13 lbs. here is a size comparison between the stone and a pack of cards.
Radiograph of the stone by itself. Note the “nidus” a piece of wire clearly evident at the center of the enterolith.
At Colorado State University equine veterinary care is delivered through the collaboration of three nationally recognized equine service centers: (1) Colorado State University Veterinary Teaching Hospital Equine Service; (2) Colorado State University Equine Reproduction Laboratory; (3) Colorado State University Orthopaedic Research Center. Equine treatment capabilities at CSU are at the forefront of equine veterinary medicine through the shared expertise of these organizations.

DISCUSSION POINTS

- Obstruction of the large colon with enteroliths is a well-documented but not completely understood cause of intestinal obstruction in the horse, and the risk factors include the geographic location of the animal, with California and Florida having the highest prevalence for this cause of colic.
- Other factors include breeds such as Arabians and Arabian crosses, Morgans, American Saddlebreds, Donkeys and Miniature Horses, and also the consumption of alfalfa hay, and less than 50 percent of time spent outdoors.
- Physical examination findings can vary depending on where the stone is located inside the intestines and whether or not the intestinal wall becomes compromised by the pressure caused by the stone.
- Radiographs are a useful method to identify enteroliths, although the sensitivity of this technique can vary depending on the location of the stone, its size and the size of the horse.
- The prognosis for surgical removal of the stone in cases that don’t have intestinal compromise is usually excellent. However, local necrosis of the intestine in a area that cannot be exteriorized is associated with a grave prognosis.
- The recurrence rate of enteroliths is unknown, but dietary modifications such as avoiding alfalfa hay are usually recommended.
- Removing horses from dirt or gravel, which can serve as a nidus is also a good practice.

TAKE HOME MESSAGE

Hand A Lee was never in California or Florida, and although she did not fit many of the principal predisposing factors usually seen in cases of colic caused by enteroliths, her case was a classical example of scenario encountered in such cases. This can serve as a reminder that we have to always keep our minds open to all possible causes of abdominal pain in horses, regardless of predisposing factors. This approach was instrumental in the diagnosis of her problem, and ultimately resulted in her full recovery.

RESOURCES

- Colorado State University Veterinary Teaching Hospital: csuvth.colostate.edu
- CSU Equine Emergency and Critical Care Center: http://csuvth.colostate.edu/equine/medicine_surgery/emergency_urgent.aspx