

## AVTCP Case Report

Title: Cecal Torsion in a Holstein Cow Author: Sonia Lyn Clinton, RVT

### **Signalment**

The patient is a two year old Holstein-Friesian cow weighing 545.45 kg.

### **Presenting Complaint**

The patient was presented for having decreased feed intake and decreased milk production.

### **History**

The patient is ten days post-parturition. Prior to milking, the patient was reluctant to move from the free stall, which caused her owner to be concerned about her depressed attitude. During the morning milking the owner also noticed that she had decreased milk production. Following milking, the owner also noticed that the patient was not at the feed bunk eating with her herd mates. The owner administered one 500 ml 50% dextrose solution IV q24h with 80ml of oxytetracycline hydrochloride 100mg IV q24h to help her feel more comfortable until she could be further examined by the veterinarian.

### **Physical Exam Findings/Observations**

The patient was laying down in sternal recumbency when the doctor and I first arrived. The patient was reluctant to stand for the physical exam, indicating a depressed mental attitude. On physical exam, she had sunken eyes and a skin turgor lasting longer than five seconds indicating a 10% dehydration status. Upon further physical examination, her heart rate was 90 bpm, respiratory rate 30 bpm, and temperature was 99.0 degrees Fahrenheit. There were poor rumen contractions during auscultation of the left side. Auscultation and percussion of right flank was performed and a tympanic ping was heard that extended from the tuber coxae filling the entire paralumbar fossa to the last thoracic rib.

### **Problem List/Differential Diagnosis**

Whenever a patient has a tympanic ping on the right side there are several possibilities of what could be

causing it. Possibilities include a right displaced abomasum, a right volvulus abomasum, accumulation of gas in the duodenum, spiral colon, ascending colon, small intestine, or torsion of the root of mesentery.

Location of where the tympanic ping is heard is indicative of which organ it is.

### **Diagnostic Approach**

One of the ways to diagnose a cecal torsion is where the percussion of the tympanic ping is located on the patient's body. Typically, a cecal torsion tympanic ping is heard on the right flank, near the paralumbar fossa and the sound extends caudally. To get the definitive diagnosis for a cecal torsion is to perform a rectal exam. On rectal examination the doctor can feel the dilatation of the cecum, the torsion of the cecum on itself which feels like bands going around the cecum.

### **Treatment Plan**

With the patient's deteriorating condition, the original recommendation was to send the patient to market. However, the patient still had a meat withdrawal time that needed to be taken into consideration. With the patient being a young animal, the owner then elected for surgery to be performed. First, the patient was administered 20 ml of flunixin meglumine 50mg IV q24h to help manage pain. The patient would remain standing and a right side paralumbar fossa approach would be used. The patient would be prepared for surgery by clipping the right flank at the paralumbar fossa. The length of the surgery site would be from the last rib extending the most caudal aspect of the paralumbar fossa. The width of the surgery site would extend from the spine to the most ventral aspect of the flank. The surgical area would then be scrubbed three times with a betadine scrub. Analgesia would then be provided by administering a proximal paravertebral block using 36 ml 2 % lidocain hydrochloride. Three more scrubs were performed using a chlorhexadine scrub. The surgery would then begin. During surgery, the apex of the cecum would be exteriorized and a pursestring suture pattern would be made in the cecum. After the technician applied sterile gloves, the technician would make a one inch incision would be made in the center of the pursestring suture pattern to drain the contents of the cecum. Once the contents are completely drained the pursestring suture would be closed and the cecum would be rinsed with two 1000 ml sterile saline. The cecum is then placed back into the abdominal cavity and the torsion is corrected. The sterile gloves would be changed and

new sterile gloves applied. Prior to a three-layer muscle closure using number 3 Catgut suture, a therapeutic abdominal lavage consisting of 1000 ml sterile saline infused with 20 ml penicillin g procaine 300,000 units is administered into the peritoneal cavity. The skin was closed using number 3 Braunamid suture in a Ford interlocking pattern. Then following surgery the patient would be administered 500 ml 50% dextrose solution IV q24h infused with 80 ml oxytetracycline hydrochloride 100mg q24h, along with two 1000 ml bottles of 7.2 % hypertonic saline IV q24h .The owner would follow up with 20 ml penicillin g procaine 300,000 units IM q12h for three consecutive days. Suture removal in 14 days.

### **Final Diagnosis**

The doctor performed a rectal exam. With the rectal exam, the doctor could feel the cecum; it was distended and the doctor could palpate spirals bands going around the cecum. The definitive diagnosis is a cecal torsion.

### **Outcome**

Surgery was performed, and the patient recovered from the surgery without any complications. The owner gave the follow up treatment of 20 ml penicillin g procaine 300,000 units IM q12h and removed the sutures in 14 days. Several weeks after her surgery, her milk production didn't return to full production amount that she had prior to developing the cecal torsion and surgery. Three months later she was later culled from the herd.

### **Conclusion**

The exact cause of cecal dilatation or a cecal torsion is unknown. There are several hypotheses as to why it can occur, and those hypotheses indicate diets that are rich in starch, which causes an increase in carbohydrate fermentation in the large intestine. This causes an increase in the amount of contents that enters the cecum that leads to the dilatation.<sup>1(p250)</sup> Torsion of the cecum is less likely to occur compared to a cecal dilatation. The cecum rotates along its long axis which is the cecal torsion<sup>1(p250)</sup> Symptoms of a cecal torsion are decreased feed intake, decreased milk production, there is little production of feces, and

the cow may be painful at her abdomen. Upon physical examination, a tympanic ping can be heard on the right flank that extends from the tuber coxae to the last thoracic rib with the ping greater than 10 cm in diameter.<sup>1 (p221)</sup> The confirmatory test to diagnose a cecal torsion is rectal palpation; the cecum distension can be felt with spirals around it.<sup>1 (p251)</sup> If blood chemistry was performed, it could indicate metabolic alkalosis, hypochloremia, or hypokalemia.<sup>1(p251)</sup> Medical treatments include intravenous fluids, and NSAIDS. Surgery is performed using the standing right flank approach. The patient is aseptically prepared for surgery and administered a local anesthetic. An incision is made in the cecum to drain the digesta. The cecum is then rinsed with sterile saline and sutured closed. Then, once the cecum is rinsed and sutured closed, the cecum is placed back into the abdominal cavity and the torsion is corrected. The abdomen is then inspected to ensure that the spiral loop of the ascending colon is the correct position.<sup>1 (p253)</sup> The abdominal muscles and skin are then sutured closed.

Following surgery, the patient is placed on broad-spectrum antibiotics, and intravenous or oral electrolytes should be administered. The patient should have limited amount of coarse feed for 24 to 48 hours after surgery. Complication with a cecal torsion is septic peritonitis. If cecal dilatation or cecal torsion reoccurs it is recommended that the cecum be surgically removed.<sup>1(p250)</sup> Short term (19 month period) survival rate for correction of a cecal torsion is 91% with average being 65% at 11 months.<sup>1 (p253)</sup>

## **Discussion**

One recommendation that could have improved the outcome of the patient would have been to have the owner limit the feed intake post-operatively. Another recommendation that could have changed the outcome is to have the owner or veterinarian administer post-operative electrolytes for three consecutive days following the surgery to help correct the alkalosis and electrolyte imbalances.

## **References**

1. Fubini SL, Ducharme NG, Steiner A, et al. Fathman EM, eds. Farm Animal Surgery. St. Louis, Missouri: Saunders Elsevier; 2004.