Herniation and Anastomosis of the Intestines of a Bovine

Robert Glock
Iowa State University

Follow this and additional works at: https://lib.dr.iastate.edu/iowastate_veterinarian
Part of the Large or Food Animal and Equine Medicine Commons, and the Veterinary Anatomy Commons

Recommended Citation
Available at: https://lib.dr.iastate.edu/iowastate_veterinarian/vol22/iss2/15

This Article is brought to you for free and open access by the Journals at Iowa State University Digital Repository. It has been accepted for inclusion in Iowa State University Veterinarian by an authorized editor of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.
an excess of five drops is considered as a positive indication of liver dysfunction.

On the day of entry, the patient received one cc Intraheptol (Lederle Lab., Div. Amer. Cyanamid Co., N.Y., N.Y.) intravenously along with nine cc of five per cent dextrose. Also 250 cc of five per cent glucose with injectable B vitamins were given subcutaneously. This treatment was repeated on night medication.

On the following day, December 5, the temperature was 99.5 F and the dog was reported to be very ill. There was some anasarca present. A subcutaneous mass on the ventral abdomen was found and was suspected to be hemorrhage. The dextrose with B vitamins was repeated. One Canheptin lipotropic tablet (Jensen Salsberry Lab., Inc., Kansas City, Mo.) was given orally and one cc Crude Liver Injection USP (The Upjohn Co., Kalamazoo, Mich.) was injected intramuscularly. At 9 PM the patient was dead.

Postmortem examination revealed severe generalized icterus. The liver was swollen and congested. The liver was yellow colored with uniform brownish motling. The final diagnosis was infectious canine hepatitis.

The transmission of the organism is mainly by way of saliva and urine. The fact that recovered animals and subclinically sick animals can disseminate the virus in their urine for months is important. It must reach the oral cavity of a susceptible animal. Immunity from the live virus is considered long-lasting.

Francis X. Dieter, ’60

References
Canine Medicine, Multiple Authors, American Veterinary Publications, Inc., 1959.

Herniation and Anastomosis of the Intestines of a Bovine. On August 31, 1959, a five year old Holstein cow was admitted to Stange Memorial Clinic for treatment. She was part of a show herd and had been referred by the fairgrounds veterinarian at Des Moines, Iowa. History, as given by the owner, revealed that she had difficulty in calving and an unusual fulness in the perianal region was noted. When traction was applied to the calf, the rectum prolapsed and ruptured allowing several feet of the small intestine to herniate. In the confusion that followed either the calf or the attendant stepped on the herniated intestine and caused mechanical separation of a segment of the ileum. When the fairgrounds veterinarian arrived, only one end of the ruptured intestine could be found. This end, which later was determined to be the distal end, was closed by infolding sutures. After careful washing of the exposed intestine, it was replaced through the tear in the rectal wall. Epidural anesthesia was administered, the anus was closed with a purse string suture to prevent further intestinal prolapse, and the cow was trucked to Ames.

When the cow arrived at the clinic a laparotomy incision was made in the right flank and both ends of the ruptured intestine were located. About 24 inches of damaged tissue was removed and a “sewer pipe” anastomosis was performed. An eight inch tear in the rectal wall was closed by sutures, working through the laparotomy incision. The cow was given 1000 cc of electrolyte solution, and 500 cc of 25 per cent dextrose, and 1.5 gm. of oxytetracycline intravenously. Later in the day one gallon of mineral oil was admin-
istered by stomach tube and 10 cc of a penicillin-dihydrostreptomycin combination was injected intramuscularly.

On the second day after admittance the cow was eating but a temperature rise to 103.8° F. was noted. She was placed on intramuscular chloramphenicol therapy, 2 Gm. b.i.d. Her condition seemed to improve over the next few days.

On the fourth day the cow was not passing normal quantities of feces and the laparotomy incision was reopened. It was determined that the "sewer-pipe" anastomosis was not allowing free passage of ingesta. The initial anastomosis was removed along with several inches of intestine. An end-to-end anastomosis was formed. Electrolytes, dextrose, and calcium gluconate were administered intravenously along with continued chloramphenicol therapy. On the following day, September 5, she was given 500 cc of 25 per cent dextrose and 200 cc of saline solution intravenously. On September 6, the cow was eating well and passed some feces.

On September 7, the cow's temperature rose to 105° F. Chloramphenicol therapy was replaced by 2 Gm. of injectable neomycin given intramuscularly. Her temperature fell to 103° F. the following day but no further drop was noted after continued neomycin administration. On September 12, penicillin-dihydrostreptomycin combination was used to replace the neomycin with no significant change in the cow's condition.

Removal of the lower two sutures was followed by exudation from the laparotomy incision on September 13. Several more cutaneous sutures were removed on September 15, revealing a pus-filled cavity extending into the peritoneal cavity. This pocket was flushed with dilute potassium permanganate solution. On September 17, the opening through the abdominal muscles was enlarged. Approximately 500 cc of pus drained from the opening. It was thought that this had accumulated in a localized abscess within the peritoneal cavity. Apparently it was walled off with connective tissue, since when flushed with potassium permanganate solution, only a small amount of the solution could be infused into the opening before return flow was evident. Antibiotic therapy was discontinued and the only treatment was irrigation of the fistulous tract. The cow remained bright and continued to eat well.

It was noted that the cow's temperature returned to the normal range and remained there after the abscess was drained and antibiotic therapy discontinued. This would seem to indicate that the temperature increase may have been due to pyrogens absorbed from the circumscribed peritonitis.

On September 28, about one month after surgery, rectal palpation was performed. Adhesions were present in the peritoneal cavity and an abscess was palpated in the area of the tear of the rectal wall. Slight pressure was applied causing the abscess to drain into the rectum.

On October 7, the cow was eating, ruminating, and defecating normally but the fistulous tract in her flank continued to drain. The solution used to flush the cavity was changed to 1:1000 quaternary ammonium compound in water with 0.5 Gm. oxytetracycline added. This same treatment was continued until the cow was ordered home on October 14, with instructions for the owner to flush out the fistulous tract occasionally.

In December the owner of the cow reported that she was doing very well and producing about 40 pounds of milk per day. She had exhibited estrus, was bred, and was later determined to be pregnant by rectal palpation.

This case presents several interesting aspects of bovine surgery. Intensive parenteral antibiotic therapy is beneficial in the localization of many peritoneal infections in cattle, but it is unlikely that these infections will be readily eliminated by this means alone. Surgical drainage of fluid accumulations in circumscribed peritonitis should be established whenever possible. Infections in the area of the ovarian bursae may result in adhesions that prevent the ova from passing into the Fallopian tubes. This has resulted in sterility, but apparently this cow's reproductive ability was not impaired.
Adhesions involving segments of the intestine are a common cause of obstruction of the small intestine of humans, but are relatively rare in cattle. When incarceration of the intestine does occur in cattle from this cause, the symptoms are frequently evident within two weeks following the inflammatory reaction. Certainly this cow’s progress must be followed for several months before complete evaluation of the apparent recovery can be made.

Robert Glock, ’61

Rumen Engorgement in Three Bovine. On Feb. 26, 1959, two angus cows and a bull were presented at Stange Memorial Clinic with a history of overeating cracked corn. Physical examination revealed that a very loose, foul-smelling diarrhea was present with the hind parts of the cattle being red. The temperatures were normal. Severe tympanites was present. The affected animals constantly shifted their weight, especially on the hind feet, denoting inflammatory changes in the sensitive laminae from absorbed toxins. On auscultation of the heart, one could readily note the characteristic “watch tick” sound of the toxic heart in which the first heart sound is decreased in amplitude and more nearly resembles the second sound.

A stomach tube was passed with the aid of a Frick tube resulting in release of a foul-smelling gas. The area over the left paralumbar fossa was clipped, shaved and antiseptic was applied. Local infiltration with 4 percent procaine was used to anesthetize the area. An incision ten inches long was made through the skin, muscle, and peritoneum. The rumen was sutured to the skin with nylon suture material thus allowing blood, peritoneal fluid and fibrin to form a seal and prevent peritoneal contamination. The rumen was incised and a great deal more foul-smelling gas was released. A rumen ring shroud was introduced. It was noted that the rumen mucosa was very hyperemic. A large quantity of solid material, consisting mostly of cracked corn was removed by hand. A Kingman tube, filled with water to create suction, was introduced into the rumen and a large volume of fluid was removed. Water at body temperature was introduced into the rumen. This was removed and the process repeated several times to remove as much of the toxic material as possible. The rumen was left partially filled with fluid and was closed with two rows of continuous infolding sutures using #3 chromic catgut. The rumen was very difficult to suture because it was extremely thin and friable. The peritoneum and muscular layers were closed with interrupted catgut sutures and the skin was closed with a blanket stitch using nylon suture material.

Postoperative treatment consisted of 1000 cc. of 50 percent dextrose intravenously and 25 mg. of decadron phosphate intramuscularly. The patients ate some hay and drank water the next day. On February 28, one cow and the bull died and were taken to the postmortem laboratory. The other cow aborted on March 4. The cow was estimated to be about six months pregnant. This cow seemed to be doing well until she lost her calf. The placenta was removed on March 6 and three Furea boluses (Eaton) were placed in the uterus. During subsequent days, the cow was treated with dextrose intravenously and a n d penicillin-streptomycin combination intramuscularly. The animal was raised to a standing position with the aid of a hip bone sling. This cow died on March 12. The liver and kidneys were found to contain septic infarcts, there were fatty changes in the liver, and a suppurative metritis was present.

It was felt that the poor response to treatment in this case was due to the length of time that elapsed between the time the cattle overindulged and the time they were presented for treatment. Evidence of the length of delay was exhibited by the presence of laminitis and a toxic heart.

Early treatment cannot be overemphasized.

Keith Cogley, ’60