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# Temporary Enterostomy in the Correction of Intestinal Intussusception

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# CLINICAL MEDICINE

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**1** **Temporary Enterostomy in the Correction of Intestinal Intussusception.** Dr. Fred Neal, the clinician on this case, offers two reasons why a temporary enterostomy may be helpful in the successful surgical correction of intestinal intussusception. First, in four previous cases of animals from which an intussusception was surgically removed and an intestinal anastomosis was performed at that time, those animals died in a period of six to twelve hours. Their death was attributed to the increased absorption of toxic ingesta from the previously static intestine anterior to the intussusception. With a temporary enterostomy the toxic ingesta is allowed to discharge through the enterostomy for a short time and the condition of the animal is greatly improved in a few hours. Secondly, the intestine proximal to the intussusception is always greatly distended with gas and ingesta, while the distal portion is constricted much smaller than its normal size due to inactivity. This extreme difference of size in the proximal and distal ends of the intestine makes it very difficult to obtain uniform coaptation.

On Nov. 23, 1958, a five-year-old Holstein cow was admitted to the clinic with a history of having calved ten days before admission and of being normal prior to this time. The veterinarian who referred the case had made a tentative diagnosis of an intestinal volvulus.

Upon clinical examination the temperature was within normal limits and the respiration and heart rates were depressed. There was a mucopurulent nasal

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discharge and the eyes had a hollowed appearance. The cow moved with a delicate, cautious gait with moderate kyphosis.

Upon rectal palpation thick masses of grayish mucus were found covering the mucous membranes of the rectum and colon. The rumen wall was atonic, and lacked the normal strength and frequency of contractions. The intestines in the anterior portion of the intestinal tract were greatly distended with gas and ingesta, while the intestines of the posterior part of the digestive tract were constricted and void of gas and ingesta. More detailed palpation was discontinued due to the friability of the small colon. Based mainly on two findings, a tentative diagnosis of intestinal intussusception was made. First, the complete absence of fecal material and the presence of volumes of grayish mucus found in the colon and rectum. Secondly, the greatly distended anterior portion of the intestine, while the posterior portion was

constricted and void of gas and ingesta.

A laparotomy was performed using a high epidural for regional anesthesia. The tentative diagnosis of intestinal intussusception was confirmed. The portion of the ileum anterior to the intussusception was greatly distended with retained ingesta. The affected portion was brought to the outside of the incision and hemostats were used to clamp off the intestine anterior and posterior to the intussusception. The vessels supplying the intussusception area were ligated. An enterotomy was performed and the intussusception was removed along with a small portion of the adjacent mesentery. The proximal and distal segments of the incised intestine were sutured to the ventral portion of the laparotomy incision, with about two inches of both segments protruding through the laparotomy incision. Both hemostats were released and several gallons of foul smelling ingesta were eliminated. The laparotomy incision was sutured dorsal to the protruding intestines.

Supportive and prophylactic therapy consisted of intravenous administration of 2.5 grams of active tetracycline hydrochloride in 1000 cc. of electrolytes, 500 cc. of 50 per cent dextrose and 100 cc. of calcium gluconate. One-half day after the operation the cow nibbled at grain, ate hay and drank some water.

The next morning the cow's temperature was normal. The mucopurulent nasal discharge was absent and her eyes had a bright appearance. She had eaten grain and hay, drank and was ruminating. Medication for the next seventy-two hours consisted of daily intravenous administration of 2.5 grams of active tetracycline hydrochloride in 1000 cc. of electrolytes and 1000 cc. 50 per cent dextrose in three divided doses. During this period the cow eliminated a thin liquid fecal material through the enterostomy opening.

Ninety-six hours after the intestinal intussusception was removed an intestinal anastomosis was performed. To decrease intestinal motility 5 cc. of Thorazine was given intravenously. The area

of the old incision was reopened. The proximal and distal portions of the protruding intestines were clamped off ten inches from the original enterotomy and the vessels to this area were ligated. Both portions of the intestines to be discarded were incised after clamping with hemostats to prevent fecal contamination. At this time the contaminated gloves were changed for sterile gloves. At all times during the operation strict asepsis was attempted.

An end to end anastomosis of the intestine was performed using a double interrupted Cushing suture with cotton suture material. The clamps were removed and the area of anastomosis was checked for leakage and patency by forcing intestinal ingesta past the area of repair. The intestine was returned to its normal position and approximately 50 grams of soluble crude Polyotic were sprinkled in the peritoneal cavity. The laparotomy incision was closed.

Immediate postoperative medication consisted of intravenous administration of 1000 cc. of electrolytes and 500 cc. of 50 per cent dextrose as well as 2,000,000 units of procaine penicillin-G and 2.5 grams of dihydrostreptomycin sulfate intramuscularly.

The following morning the cow was up and more alert, but showed complete anorexia. Intravenous medication consisted of 2.5 grams of active tetracycline hydrochloride dissolved in 1000 cc. of electrolytes and 500 cc. of 50 per cent dextrose.

Two days postoperative the animal was ruminating, eating hay and drinking water. Liquid feces containing some blood were passed. The same medication was given as previously.

Three days postoperative the feces had a more solid consistency and there was complete absence of blood. The same intravenous medication was continued for two more days. In addition, one-half bucket of boiled, hulled, rolled oats, one pound of vitamin supplement and one pound of calf starter were mixed with water to a soupy consistency then given orally via a stomach tube.

On the sixth day the temperature, heart rate and respiration were normal; the animal had a bright alert look, was ruminating, eating regularly and the feces were normal. The cow was ordered home.

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**2** **Central Nervous System Symptoms and Brain Damage Associated with Common Ruminant Digestive Disturbances.** With the exception of the optic papilla, the nervous system is not subject to direct examination. Diagnosis of diseases of the nervous system must, therefore, be made by interpretation of symptoms. These symptoms are manifested as disturbances of consciousness, locomotion, senses, incoordination and motor irritation.

The following cases are cited to illustrate central nervous system symptoms and brain damage associated with two common field cases of ruminant digestive disturbances. Intoxications involving the digestive tract may be a cause of motor irritation and nervous excitement.

### **Rumen Indigestion**

During the evening of Dec. 14, 1958, two 10-month old Hereford heifers were admitted to the I.S.C. Veterinary Clinic with a history of having been turned into the cornstalks several weeks previously. The animals were showing incoordination.

The following morning one animal was dead. The other was weak, incoordinated, trembling and at times was unable to rise. From time to time she would grit her teeth and periodically the large muscles showed "strychnine-like" contractions. She had a watery diarrhea and her temperature was 102.4. The heart beat was very rapid and the pulse weak.

Post mortem examination of the dead heifer revealed a sour smelling material throughout the entire digestive tract. The rumen was filled with material in an advanced state of decomposition.

A diagnosis of rumen intoxication was made.

The living heifer was treated with 350 cc. of 50 percent dextrose I.V. and considerable improvement was noted the following day. Although still unsteady, the animal could stand and eat some hay. The patient was retreated with dextrose. The following day the animal was unsteady on her feet, but could eat hay and grain. When released to go home, one could still detect some incoordination in the rear quarters with a slight bobbing of the head.

The continued consumption of cornstalks may have been the cause of a variable degree of indigestion due to the inability of the rumen microorganisms to adjust to this new type of feed. Over a period of many days ingesta accumulated in various stages of decomposition. The toxins absorbed from this decomposing mass of ingesta gradually depleted the detoxifying power of the body. The selective absorption of the rumen epithelium may be altered, resulting in passage of toxins from the mass of ingesta directly into the blood stream. The inability of the body to detoxify all the toxins may lead to hyperemia and finally demyelination necrosis of some of the brain tissue.

### **Coccidiosis**

On Dec. 9, 1958, two 8-month-old Hereford heifers were admitted to the I.S.C. Veterinary Clinic with a history of having had a diarrhea.

Physical examination of one of the heifers revealed a temperature of 104.4. She was reported as being very excitable and going into tetanic convulsions when moved. Laboratory examination of the feces revealed numerous oocysts.

Post mortem examination of one of the animals revealed the following: hyperemia of the terminal portion of the small intestine, focal areas of hemorrhage and linear ulcers in the spiral colon, severe diffuse, epithelial erosions of the entire cecum, and hemorrhagic proctitis. Scrapings of the cecum contained large numbers of *Eimeria zurnii*. A diagnosis of coccidiosis was made.

During the subsequent recovery of