

Intestinal Surgery



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KEYWORDS

• Cattle • Surgery • Intestine • Jejunum • Colon • Enterectomy

KEY POINTS

- The short mesentery in cattle makes intestinal exteriorization challenging.
- Duodenal sigmoid flexure volvulus is suspected if there is extreme hypochloremic alkalosis.
- Cattle with jejunal hemorrhage syndrome (JHS) have a poor prognosis.
- Intraoperative clot fragmentation should be favored with JHS rather than enterectomy.
- The prognosis is better for animals with ileal flange volvulus rather than mesentery root torsion.

Intestinal surgery in cattle is challenging because it is often done with the animal standing under sedation. Because of the abdominal pain and state of shock, affected animals will be prone to move constantly or even lay down. Moreover, it is technically demanding and can rarely be performed without assistance, unlike most common surgeries in cattle. Decision-making is crucial and appropriate technical technique is essential to improve success rate.

DECISION-MAKING

Doing an exploratory laparotomy in cattle is easy, fast, and inexpensive. There are less consequences if revealed to be unnecessary compared to other species. However, an unnecessary laparotomy could be harmful to a critical patient that could have been medically treated. Before making the decision to favor a surgical or medical approach, information must be gathered and the case approached in a logical manner: (1) review the possible causes of abdominal pain relevant to the particular case; (2) recognize the indications for immediate surgery; (3) determine if surgery is an option given the cost, facilities, and surgical abilities; (4) establish medical treatment before or during surgery; (5) if surgery is postponed, determine in advance a precise time and list criteria to be monitored to help decision-making; and (6) establish and present to

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the client a most realistic prognosis and cost estimate. A systematic approach based on adequate signalment and history, complete physical examination, and judicious choice of ancillary tests are the tools available to clinicians.

Frequent clinical signs and physical findings include colic, distended abdomen, tachycardia, and shock. A very distended abdomen requires rapid assistance. A stomach tube should be passed to decompress the rumen. If no free gas is coming out of the tube, it might be a frothy bloat or intestinal volvulus. Abnormal findings at rectal palpation are presence of fresh blood, absence of feces, tension band, distended small bowel, distended cecum, or a mass among small bowels. Ileus and peracute enteritis can be easily confused with jejunal obstruction. Usually, the small bowel will be distended primarily with fluids and easily palpable per rectum. Tension bands may also be palpated. In volvulus, intestines are severely distended with gas occupying the pelvic cavity. Intussusception is difficult to identify precisely but usually is suspected if a hard mass is felt among distended small bowels. Jejunal hemorrhage syndrome (JHS) might have a similar rectal examination finding except that the rectum is filled with ripe raspberry-like feces in variable quantity. Animals with enteritis may have a fever and show other clinical signs or laboratory results compatible with it (ie, leukopenia). Finally, the heart rate is a good indicator of the severity of the condition but should be correlated with other findings. A cow with mildly distended small bowel and a heart rate of 80 beats per minute (bpm) does not need immediate assistance. However, a cow with a distended organ and heart rate of 100 bpm and dehydrated needs immediate assistance.

Ultrasound imaging is very helpful to evaluate the abdomen in cattle.^{1,2} Presence of severely distended and empty intestines at the ultrasound examination indicates obstruction (**Fig. 1**). Surgery is indicated even if the cause is not clearly identified at this point.

PREOPERATIVE CONSIDERATIONS

The surgeon must decide if the procedure will be performed standing, or on lateral or sternal recumbency. If the animal is down, the decision is easy. If the animal is standing, the decision is often based on surgeon's training and experience. If the animal is

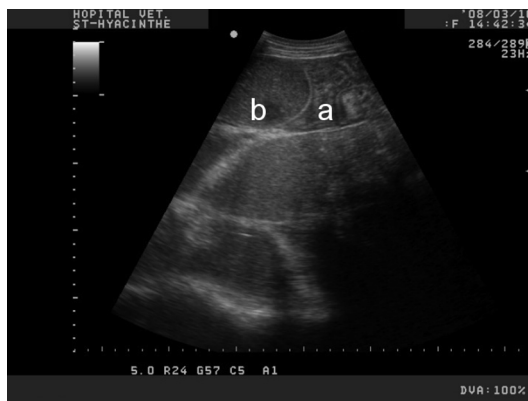


Fig. 1. Transabdominal ultrasound of the ventral right abdomen with a curvilinear probe on an adult Holstein cow. The jejunal loops are distended, occupying most of the ultrasound field (b). The presence of empty jejunal loops (a) adjacent to distended loops is compatible with intestinal obstruction.

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