



A Monthly e Magazine  
ISSN:2583-2212

Sept, 2023; 3(09), 2351-2353

Popular Article

## Intestinal Obstructions in Large Ruminants

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<https://doi.org/10.5281/zenodo.8367998>

### Introduction

Large animals, primarily cattle, commonly suffer from intestinal obstructions. These blockages can be either mechanical (luminal or extraluminal) or functional, with functional obstructions being more common. Extraluminal obstructions may result from conditions like volvulus or abdominal masses (e.g., lymphosarcoma or fat necrosis) in cattle. Functional obstructions, though lacking gross abnormalities, are characterized by reduced intestinal movement (ileus).

### Etiology and Pathogenesis

Functional intestinal obstructions often have unclear causes and relate to changes in intestinal motility, possibly due to dietary, management, phytobezoars, parasites, enteritis, peritonitis, or electrolyte imbalances.

Mechanical obstructions result from physical GI tract blockages, including congenital issues like atresia jejuni, coli, recti, and ani in calves, and atresia ani. Specific causes of intestinal obstruction include: Duodenal sigmoid flexure volvulus, Jejunal and ileal intussusception, Jejunoileal flange volvulus, Mesenteric root volvulus, Jejunal luminal occlusion due to hemorrhagic jejunitis-induced blood clot, Small intestine or spiral colon obstruction by phytobezoars, Cecocolic volvulus, Coli, recti, and ani atresia.

Intussusceptions may result from irregular peristaltic movements due to enteritis, parasitic infections, dietary issues, or mural masses.

### Clinical Findings and Diagnosis

Cattle in pain may display behaviors such as hind limb treading, stretching, restlessness, kicking the abdomen, and teeth grinding. In cattle, signs of intestinal obstruction include reduced or

absent feces, variable abdominal swelling, and abnormalities detectable through rectal examination, ultrasound, clinicopathologic analysis, or laparotomy.

Additional indicators of intestinal obstruction in cattle encompass decreased appetite, diminished milk production in lactating cows, and abnormal feces, sometimes mixed with mucus or blood. The presence of raspberry-colored blood mixed with feces suggests small-intestinal bleeding, while brighter red blood typically signifies colon or rectal bleeding. Abomasal bleeding is associated with melena.

Cecal distention may not cause abdominal swelling but can be detected by a ping in the caudal dorsal paralumbar fossa. In cases of cecocolic volvulus, palpation reveals distended loops of the large intestine, accompanied by rumen hypomotility. Metabolic and cardiovascular issues are generally mild, except for prolonged cecocolic volvulus.

Ultrasonography, performed through the right paralumbar fossa or rectum, can identify small-intestinal distention, ileus, hypomotility, atony, and increased peritoneal fluid. In some instances, it may detect intussusception.

Severe changes in cardiovascular parameters, such as tachycardia, abnormal mucous membrane color, prolonged capillary refill time, and dehydration, are often associated with hemorrhagic strangulating obstructions like volvulus of the jejunal-ileal flange or volvulus at the root of the mesentery. These conditions manifest sudden cardiovascular deterioration, unlike cecocolic volvulus or intussusception, which can persist for several days. Peritoneal fluid analysis can gauge the extent of peritonitis and assist in diagnosis.

## **Treatment**

Treatment of functional intestinal obstruction in cattle involves identifying and addressing the underlying cause, correcting dehydration and electrolyte imbalances with fluid therapy, administering calcium supplements as needed, providing oral potassium chloride, and managing secondary ketosis. Erythromycin may be considered to enhance abomasal emptying and intestinal motility, although evidence for functional obstruction is limited. Prokinetic agents are not recommended for mechanical obstruction due to the risk of intestinal rupture.

Mechanical obstructions almost always necessitate surgical intervention, with preoperative antimicrobial treatment and supportive care including fluids, electrolytes, and calcium. Most functional obstructions have a favourable prognosis when appropriate supportive therapy is applied, especially if the underlying cause is resolved.

## **Prevention**

Preventing all or most cases of intestinal obstruction in cattle may not be entirely possible. Nevertheless, several preventive measures can help reduce the risk:

1. Avoid abrupt changes in feeding and management practices.



2. Ensure cattle have access to an adequate supply of water to prevent dehydration.
3. Implement effective parasite control measures to minimize the risk of infection.
4. Address dental abnormalities in cattle to facilitate proper chewing and digestion.
5. Provide access to appropriate feeds and avoid coarse feeds, highly fermentable feedstuffs, and foreign materials that can contribute to obstructions.

While complete prevention may be challenging, these measures can significantly decrease the likelihood of intestinal obstructions in cattle.

## Conclusion

In conclusion, a comprehensive approach is crucial for managing mechanical intestinal ileus in cattle. This entails promoting proper feeding practices, employing thorough diagnostics, and utilizing prokinetic treatments. This approach helps prevent, diagnose, and treat the condition effectively, enhancing cattle well-being and reducing treatment costs, thus ensuring their overall health and welfare.

## References

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