

Cecal Dilatation in Holstein Friesean Cow: A Case Study

M. A. Panhale^{1*}, K.A. Toranpawar²

Livestock Development Officer, Nashik, Maharashtra, India

*Author for Correspondence: Email Id: drmahendrapanhale@gmail.com

ABSTRACT

Cecal dilatation and distention is a substantial disorder in primary lactation dairy cows, though, reports describing the anatomical pathology results of this ailment are infrequent in the literature. Etiopathogenesis of cecal dilatation and distention is often attributed to high concentrate feeds, but there is also evidence of myoelectrical dysfunction contributing to its occurrence. Judgement is often made based on physical exam findings, with the involvement of ancillary exams. This objective of this paper was to describe a case of cecal dilatation of a six years-old Holstein Cow that presented abdominal distension.

Keywords: *Cecal dilatation, Abdominal disorder, Holstein Friesean Cow.*

INTRODUCTION

Cecal dilatation is a common and economically important abdominal disorder that affects mainly dairy animals, but the pathogenesis of the diseases remains poorly understood. The cecum may become abnormally dilated with gas or distended with ingesta and associated with partial or complete cessation of the passage of intestinal contents which further leads to complete absence of defecation. Per rectal examination has been used as an important diagnostic tool to palpate dilatation or displacement of the cecum. Cecal dilatation may also, secondarily, be associated with foreign body syndrome. Radiographic evaluation of the cecum in bovine is not possible due to the massive viscera and body girth. Several studies claim ultrasonographic diagnosis of cecal dilatation in cattle. However, there is no report on ultrasonographic diagnosis of cecal impaction in bovine. Early diagnosis and surgical intervention are required for achieving a successful outcome. Conservative treatment is not rewarding in the bovine with cecal affection and surgery should not be delayed in these patients.

Dilatation and/ or torsion of caecum is common in cattle because apex of caecum is devoid of mesentry. Its aetiology is not very clear but excessive grain feeding has been reported as the main predisposing factor (Tyagi and Singh, 2008). Dilatation may precede or follow torsion. Dilatation and/or torsion of caecum involves distension, displacement and torsion of caecum including spiral colon (Steiner, 2002). With distension alone, the apex of caecum is displaced toward or into the pelvic inlet. With torsion, the distended caecum rotates about its longitudinal axis and with retroflexion, caecum folds dorsally or ventrally in ileocaecal region, resulting in cranial orientation of apex. Caecal torsion can lead to partial or complete obstruction to the flow of digesta. The present paper describes caecal dilatation/ torsion and its surgical management in a cow.

HISTORY AND TREATMENT

A six-year-old Holstein Friesean cow was presented with history of intermittent colic, abdominal distension (Fig.1), anorexia and complete cessation of faeces from last two days. The animal was eight months pregnant and was taking water only, kicking at belly, grinding of teeth, ruminal atony, rumination absent. Per rectal examination revealed ballooning in

pelvis indicating pregnancy. The animal had already been treated medicinally with fluid therapy, antibiotics, rumenototics and purgatives but no improvement was observed. The animal was subjected to exploratory laparotomy for confirmatory diagnosis and subsequent treatment through left flank under local infiltration anaesthesia with 2% Lignocaine & paravertebral nerve block. Previously ruminotomy was done to recover foreign bodies, two metal foreign bodies removed (Fig.2). Rumen was sutured in a routine manner. After opening the abdominal cavity, a distended mass extending right from mid of abdominal cavity to pelvis was seen. On palpation, it was confirmed as distended caecum with its blind end extending up to caudal end of pelvis (Fig.3). The caecum was exteriorized, longitudinal incision was given on dorsal aspect of caecum (Fig.4). The contents of caecum were evacuated completely and longitudinal incision was closed using lambert & cushings suture pattern with 0 number catgut. Caecum was positioned properly in abdominal cavity. The abdominal wound was sutured as per routine in three layers. Skin was sutured with nylon. Post-operatively, inj. Normal saline-500 ml 5 lits., inj.ringers lactate 2 lits. Inj.sodium acid phosphate 30 ml, inj.nervine tonics 15 ml, inj.calcium borogluconate 500 ml respectively by intravenous route, inj.ceftriaxone+tazobactam 4.5 gm inj.flunixin meglumine 20 ml, respectively. The owner was advised to keep the animal on fluid therapy for next three days and then start feeding gradually fourth day onwards. On third day animal started normal defecation. Sutures were removed after 12 days and animal recovered well without any complication.



Fig.1. History of intermittent colic, abdominal distension



Fig.2. Ruminotomy- two metal foreign bodies removed



Fig.3. Distended caecum with its blind end extending up to caudal end of pelvis





Fig.4. The caecum was exteriorized, longitudinal incision was given on dorsal aspect of caecum

REFERENCES

- 1) Allen, S.E. and Holm, J.L. (2008) Lactate: Physiology and clinical utility. J. Vet. Emerg. Crit. Care., 18: 123-132.
- 2) Avery, T.B., Nagaraja, T.G. and Frey, A. (1986) Blood, urine and ruminal fluid changes associated with metabolic alkalosis induced by duodenal obstruction. Am. J. Vet. Res., 55: 1633-1637.
- 3) Braun, U. and Amrein, E. (2001) Ultrasonographic examination of the caecum and the proximal and spiral ansa of the colon of cattle. Vet. Rec., 149: 45-48.
- 4) Braun, U., Beckmann, C., Gerspach, C., Hassig, M., Muggli, E., Schweizer, G.K. and Nuss, K. (2012) Clinical findings and treatment in cattle with caecal dilatation. BMC Vet. Res., 8: 75.
- 5) Braun, U., Eicher, R. and Hausammann, K. (1989) Clinical findings in cattle with dilatation and torsion of caecum. Vet. Rec., 125: 265-267.
- 6) Braun, U., Steiner, A. and Bearth, G. (1989). Therapy and clinical progress of cattle with dilatation and torsion of the cecum. Vet Rec. 125: 430-33.
- 7) Dar, S.H., Fazili, M.R. and Dar, H.K. (2015) Surgical management of cecal dilatation-torsion in two cows. SKUAST J. Res., 17(2): 122-124.
- 8) Dietz, O. and Prietz, G. (1968). Experience as to the occurrence, diagnosis, and therapy of right abomasal dislocation and cecal dilation and torsion in cattle. Monatshefte fur Veterinarmedizin. 23: 773-79.
- 9) Fubini, S.L. (1990). Surgery of the bovine large intestine. Vet Clinics North America: Food Anim Pract. 6: 461-71.
- 10) Fubini, S.L., Erb, H.N., Rebhun, W.C. and Horne, D. (1986) Caecal dilatation and volvulus in dairy cows: 84 cases (1977-1983). J. Am. Vet. Med. Assoc., 189: 96-99.
- 11) Hussain, S.A., Uppal, S.K., Randhawa, C.S., Bhutia, C.N., Hassan, N. and Dar, L.M. (2012) Clinical findings and haemato-biochemical alterations in caecal dilatation of buffaloes (*Bubalus bubalis*). Int. J. Livest. Res., 2: 127-132.
- 12) Imran, S. and Tyagi, S.P. (2014) Reliability of ultrasonographic examination of the large intestine in healthy cows. Vet. Med. (Praha), 59: 63-67.
- 13) Khalphallah, A., Aref, N.E.M., Elmeligy, E. and El-Hawari, S.F. (2016) Clinical and ultrasonographic observations of functional and mechanical intestinal obstruction in buffaloes (*Bubalus bubalis*). Vet. World, 9: 475-480.

- 14) Martig, J. (1996) Hochtönendes perkussionsgeräusch (PING) als leitsymptom, schweiz. Arch. Tierheilkd., 138: 351-352.
- 15) Mohan, R., Saini, N.S. and Singh, S.S. (2006) Changes in different body fluids during simple intestinal obstruction in buffaloes. Indian J. Anim. Sci., 76: 1001-1003.
- 16) Papadopoulos, P., Raptopoulos, D., Dessiris, A., Tsimopoulos, G. and Roumpies, N. (1985) Experimental intestinal obstruction in cattle. Part II: Changes in blood, urine and rumen content chemistry. Zentralbl. Veterinarmed. A, 32: 276-288.
- 17) Rantanen, N. and Ewing, R. (1981) Principles of ultrasound application in animals. Vet. Radiol. Ultrasound, 22: 196-203.
- 18) Rosenberger, G., Dirksen, G., Grunder, H.D., Grunert, E., Krause, D., Stober, M. and Mack, R. (1979) Clinical examination of cattle. In: Clinical Examination of Cattle. 1st ed. Verlag Paul Parey, Berlin, Hamburg, p. 151-453.
- 19) Saini, N.S., Sharma, S.N., Oberoi, M.S. and Arneja, J.S. (1992) Bacteriological, cytological and biochemical profiles of blood and peritoneal fluid during laparotomy in calves. Indian J. Comp. Microbiol. Immunol. Infect. Dis., 16: 42-47.
- 20) Singh, G. (2015) Clinical Studies on the Ultrasonographic Diagnosis and Surgical Management of Intestinal Obstruction and Caecal Dilatation in Bovine. M.V.Sc. Thesis (Department of Veterinary Surgery and Radiology). Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India.
- 21) Singh, G., Saini, N.S., Kumar, A., Mohindroo, J. and Sharma, M. (2017) Diagnosis and outcome of surgical management of cecal dilatation in bovine. Indian Vet. J., 94: 48-50.
- 22) Smith, D.F. (1985) Bovine intestinal surgery. Mod. Vet. Pract., 65(9): 705-710.
- 23) Steiner, A., (2002). Blinddarmdilatation und-dislokation beim erwachsenen Rind. Innere Medizin und Chirurgie des Rindes. Edited by Dirksen G, Grunder HD, Stober M. Berlin, Parey Buchverlag, pp.535-39.
- 24) Stocker, S., Steiner, A., Geiser, S. and Kündig, H. (1997) Myoelectric activity of the cecum and proximal loop of the ascending colon in cows after spontaneous cecal dilatation/ dislocation. Am. J. Vet. Res., 58: 961-968.
- 25) Tulleners, E.P. (1990). Prevention and treatment of complications of bovine gastrointestinal surgery. Vet. Clin. North Amer.: Food Anim. Pract. 6: 495-16.