

Prognostic Significance of Diarrhea in Cows with Left Displacement of the Abomasum

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Summary

The recovery rate from surgical and medical therapy for left displacement of the abomasum (LDA) was much lower in 74 cows presented with diarrhea. Severe concurrent disease was often present, but the incidence of metritis, mastitis, and peritonitis was not significantly different from the entire group of 315 cows with LDA. There were significantly more cases of peritonitis in cows with LDA showing diarrhea than in cows with LDA not showing diarrhea. The death rate was almost twice as great in cows with diarrhea as in the entire group, and nearly 2½ times greater than for cows not showing diarrhea. These latter differences were highly significant.

According to some veterinary practitioners, cows with left displacement of the abomasum (LDA) presenting with diarrhea respond less favorably to surgery and treatment than do cows without diarrhea.¹ Although there have been many reports on the recovery of dairy cows from surgical correction of abomasal displacement (1,2,3,4,5,6,7,10), there have been no comments concerning cows showing diarrhea. Therefore, a retrospective study of such a group of dairy cows was conducted.

Materials and Methods

A retrospective study was made of 315 cases of LDA diagnosed by the author during a three-year period from July 1, 1971, to June 30, 1974 (9). The case record was abstracted in each instance, and the owner was personally contacted regarding the post operative results.

Blood samples were collected for analysis before any treatment or surgery was initiated. However, many cows had been treated before referral to the hospital. All hemograms were performed by personnel of the Ohio State University Veterinary Clinical Laboratory.

Results

Seventy-four (23.5%) of the 315 cows with LDA were presented with diarrhea (Table 1). Concurrent diseases in this group included 37 (50%) with metritis,

15 (20.3%) with mastitis, and 8 (10.8%) with peritonitis. This compares with percentages of 43.5%, 19.0%, and 4.1% respectively for the group of 315 cases as a whole (9), or percentages of 41.5%, 18.7%, and 2.1% respectively for the group of 241 cases not showing diarrhea. Using chi-square analysis there was a statistically significant difference of increased incidence of peritonitis in cows showing diarrhea compared to cows not showing diarrhea.

Leukocyte counts were performed in 49 (66.2%) of the cows showing diarrhea. Fifteen (30.6%) of those checked had leukopenia (white blood cell count below 4000/mm³) while 4 (8.2%) had leukocytosis (white blood cell count above 12000/mm³). Of the 241 cows not showing diarrhea, 94 leukocyte counts were recorded. Seventy-five (79.8%) had normal counts, 9 (9.6%) had leukopenia, and 10 (10.6%) had leukocytosis. Since a significantly greater number of cows with LDA and diarrhea had hemograms than did cows with LDA and no diarrhea, a comparison between the groups was not made.

The recovery from surgery and treatment was considered satisfactory in 46 (62.2%) of the cows with LDA and diarrhea based upon the cow returning to the herd and producing well. In five cases (6.8%) the cow recovered from the surgery but was sold later because of poor production. Sixteen (21.6%) of the cows died, one preoperatively and the rest shortly postoperatively. The recovery was unknown in 7 (9.5%) of the cases. Abomasal displacement subsequently recurred in 2 (2.7%) of the 74 cases.

Discussion

The recovery rate for cows initially showing diarrhea was much lower than it was for cows with LDA not showing diarrhea. Some of the causes of diarrhea were categorized. A clinical diagnosis of enteritis evidenced by a foul odor of the feces (8) was made in 22 (29.7%) of the cows showing diarrhea. Bovine virus diarrhea (BVD) was confirmed in two cases and suspected in others. Salmonellosis was confirmed in one case. Irritation of the serosal surface of the intestinal tract due to peritonitis could have accounted partially for diarrhea in some cases. Strongylosis seemed partially responsible for diarrhea in only one case.

The death rate was almost twice as great for cows

¹Personal communications from veterinarians attending the American Association of Bovine Practitioners meeting, Columbus, Ohio, December 1974.

Table 1
Results of Cases of Left Abomasal Displacement Presented with the Clinical Sign of Diarrhea

	1971-1972	1972-1973	1973-1974	Totals	
Total No. of Cases	132	91	92	315	100%
Cases with Diarrhea	25	19	30	74	23.5%
Concurrent Diseases					
Metritis	9	10	18	37	50.0%
Enteritis	9	7	6	22	29.7%
Mastitis	4	3	8	15	20.3%
Peritonitis	2	1	5	8	10.8%
Retained fetal membranes	2	2	2	6	8.1%
Pneumonia	1	0	0	1	1.4%
Nephritis	1	0	0	1	1.4%
White Blood Cell Counts					
Normal	10	7	13	30	
Leucopenia	4	6	5	15	
Leucocytosis	2	0	2	4	
Recovery					
Satisfactory	11	13	22	46	62.2%
Satisfactory recovery from surgery, but sold - Poor Production	1	2	2	5	6.8%
Died	7	3	6	16	21.6%
Unknown	6	1	0	7	9.5%
Recurrence of Displacement	1	1	0	2	2.7%

showing diarrhea (16 or 21.6%) as for the entire group (10.5%), and nearly 2½ times greater than for cows not showing diarrhea (8.3%). These differences were highly significant. Coliform mastitis, metritis/hepatic lipidosis, and traumatic reticulitis were each implicated in two cases of death. Of the remaining 10 cows which died soon postoperatively, unfavorable drug reactions were responsible in three cases. These unfavorable reactions included one case a month postoperatively when a cow was given a pint of an antibiotic-methylscopolamine mixture orally by the owner; a case of overdosage of calcium solution intravenously; and a case of propylene glycol toxicity when a gallon of that substance was given orally instead of a pint.

The recurrence rate for LDA was not different in cows initially presented with diarrhea (2.7%) than in the group as a whole (3.2%) or for cows not showing diarrhea (3.3%).

The reasons for poor recovery in cows presented with diarrhea probably relate to the severity of the pre-existing and concurrent diseases in those cows. The fact that many of the cows had leukopenia may indicate a more extreme inflammatory reaction somewhere in the body and less ability to cope with that reaction, or perhaps that bovine virus diarrhea with concurrent bone marrow depression played more of a role in the overall clinical situation than was formerly appreciated.

Oral and intravenous therapy together with appropriate therapy for existing concurrent diseases was given in these cases. Mastitis and metritis cases were usually treated with both systemic and local antibiotics. Fluid and electrolyte therapy was administered to maintain or improve hydration and

combat ketosis. White blood cell counts were monitored in severe cases on a daily basis and surgery was delayed until the leukogram was normal (greater than 4000 cells/mm³) and the clinical appearance of the cow was such that surgery seemed to be a reasonable risk. Even so, the recovery rate was not good and perhaps in the future more intensive monitoring of these patients should be considered.

References

- Gabel, A. A., and Heath, R. B.: Correction and Right-Sided Omentopexy in Treatment of Left-Sided Displacement of the Abomasum in Dairy Cattle. *J.A.V.M.A.*, 155, (August 15, 1969): 632-641. - 2. Hoffsis, G.F.: Right Paralumbar Omentopexy for the Correction of Left Displaced Abomasum. *Proc. 4th Ann. Conv. Amer. Assn. Bovine Pract.* (1971): 179-185. - 3. Lagerweij, E., and Numans, S.R.: The Utrecht Procedure in the Surgical Treatment of Displacement of the Abomasum in Cattle. *Neth. J. Vet. Sci.*, 1, (1968): 155-165. - 4. Pearson, H.: The Treatment of Surgical Disorders of the Bovine Abdomen. *Vet. Rec.*, 92, (March 10, 1973): 245-254. - 5. Pinsent, P. J. N., Neal, P. A., and Ritchie, H. E.: Displacement of the Bovine Abomasum: A Review of 80 Clinical Cases. *Vet. Rec.*, 73, (July 29, 1961): 729-735. - 6. Robertson, J. M.: Left Displacement of the Bovine Abomasum: Epizootiological Factors. *Am. J. Vet. Res.*, 29, (February 1968): 421-434. - 7. Steenhaut, M., DeMoor, A., Verschooten, F., Desmet, P., and DeLey, G.: Surgical Treatment of Left Abomasal Displacement. *Vet. Med./S.A.C.*, 69, (February 1974): 161-165. - 8. Stober, M., and Serrano, H. S.: Gross Findings in Bovine Faeces. *Vet. Med. Rev.*, (1974), 4:361-379. - 9. Wallace, C. E.: Left Abomasal Displacement—A Retrospective Study of 315 Cases. *The Bovine Practitioner*, (1975): 50-58. - 10. Weaver, A. D.: Left Abomasal Displacement in Cattle. *Br. Vet. J.*, 126, (April 1970): 194-201.