Surgical fistula as an aid in the Treatment of Chronic Bloat in Cattle

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Medical treatment of chronic bloat in cattle often fails, resulting in acute death, no weight gain, or poor weight gain.

Several devices have been developed to facilitate the treatment of chronic bloat. These consist of self-retaining trocars,[1] plastic or metal fistulas, and pop-off valves. Usually these devices become plugged postoperatively, either by local infection of the rumen or by ingesta.

If an animal has been treated medically for bloat on three occasions within a short period of time, the case may be classified as chronic. Surgical intervention is then recommended. Young beef animals that develop chronic bloat soon after they are started on high-concentrate feed are the usual candidates for this procedure.

Surgical Procedure

The surgery is best performed with the animal restrained in a chute; however, it can be done wherever restraint in clean surroundings is possible. After the animal is restrained, its tail is secured to the right side of its neck with twine or light rope.

Preparation of the surgical site is begun by clipping the hair from the left paralumbar fossa. This clipped area should extend from the dorsal spines of the vertebrae cranially to include the last three ribs. The posterior aspect extends caudally over the wing of the ilium and ventrally approximately half way down the left abdominal wall.

After a three-scrub surgical preparation of the clipped area, a 2% solution of tincture of iodine is applied to the entire site. The iodine is subsequently removed with 70% alcohol.

Local anesthesia of the area is achieved with 2% Xylocaine (Astra). This is done from a single injections site, forming a circle and using a 2-inch, 18-gauge needle attached to a 35 ml sterile disposable syringe. Care must be taken to include the peritoneum, muscles, and skin in the blocking process. The injection site should be centered over the highest projection of the bloated rumen. The blocking site is the center of the circle of skin to be excised.

After local infiltration of the anesthetic five minutes are allowed for the anesthetic to take effect. During this time the surgeon scrubs with a surgical disinfectant. Vinyl examination gloves or sterile rubber gloves are essential.

A Backhaus towel clamp is placed at the center of the blocked site and moderate traction is applied. A circle of skin 7 cm in diameter is incised with a surgical scalpel and removed by sharp dissection.

After the skin is removed, a dorsoventral blunt dissection of the muscle layers is performed with a round-nosed scissors. The muscle fibers are then separated, and the peritoneum is exposed. An incision 1 cm long is made in the peritoneum to allow passage of the Backhaus towel clamp. The rumen is grasped with the Backhaus clamp and pulled through the peritoneal incision.

Four mattress sutures are placed with a ⅜ circle cutting-edge needle armed with 0.60 mm Vetafil (S. Jackson). These are placed at 3, 6, 9, and 12 o'clock, suturing the skin to the rumen wall that has been pulled through the incision.

The rumen wall is excised leaving a fistula approximately 5 cm in diameter. Simple interrupted sutures are placed between the mattress sutures in sufficient number to obliterate any skin folds that could predispose the area to gravitating infectious tracts.

After suturing is complete, the edge of the fistula is coated with Kopertox (Ayerst). This helps prevent peritonitis and essentially waterproofs the edges of the fistula.

Postoperatively, either long-acting antibiotics or daily injections of antibiotics are given for four days. Sutures are removed 10 days postoperatively. Aftercare consists of routine observations by the owner. Dry, long-stemmed hay should be included in the animal's diet. This decreases the rumenitis these animals frequently exhibit. It also restores rumen function and minimizes spillage of rumen content through the fistula.

Discussion

Fistulas created in the manner described remain patent during 150 to 300 pounds of weight gain. After healing closes the fistula, the animal usually continues gaining until it reaches slaughter weight.

Before surgical treatment was instituted, the rate of success in treating chronic bloat ranged from 20% to 50%, depending on the technique employed. With the use of the surgical procedure, the success rate has been greatly improved. Only

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three deaths have occurred among 120 animals subjected to this technique. One death was due to aspiration pneumonia resulting from previous chronic bloat. The second death was the result of an acute bacterial pneumonia, and the third was due to acute diffuse peritonitis. This last death was caused by sepsis of the ventral aspect of the incision because of an improperly placed suture.

References

1. Buff, B. Die Behandlung Chronisch-residioierender tympanien biem Rind mit eiren Schraubtrokar. *Deut. Tier. Wochr 76:607-609, 1969.*

Abstracts

Prevalence of Mycobacterium paratuberculosis in ileocecal lymph nodes of cattle culled in the U.S.

Mycobacterium paratuberculosis was isolated from 119 of 7,540 ileocecal lymph node specimens from cattle at 76 USDA-inspected cull-cattle slaughterhouses in 32 states and Puerto Rico. The prevalence of bovine paratuberculosis was 1.6% overall, 2.9% in dairy cattle, and 0.8% in beef cattle.—R. S. Merkal et al (J Am Vet Med Assoc 1987; 190:676-680).

Disseminated Mycobacterium paratuberculosis infection in a cow

A cow with chronic diarrhea and weight loss caused by localization of *Mycobacterium paratuberculosis* in the intestinal tract (Johne's disease) had gross and microscopic changes indicative of a disseminated infection.

A direct association between the remote lesions and the intestinal infection was shown by isolation of *M paratuberculosis* from renal tissue, detection of intracellular *M paratuberculosis* antigen(s), using an indirect immunoperoxidase method, and by the characteristic granulomatous nature of the leisons.

This case illustrates the potential for extra-intestinal lesions in *M paratuberculosis* infection of cattle and should cause veterinarians to consider mycobacterial disease when confronted with multinodular lesions of the bovine kidney. The immunoperoxidase method was useful in determining the cause of the inflammatory lesion in which intact organisms were not evident.—S. A. Hines et al (J Am Vet Med Assoc 1987;190:681-683).

JABLONSKI, P.-P. (1985): **Sampling of urine from female cattle by means of the diuretic furosemide.**
Dtsch. tierärztl. Wschr. **93,** 80–81

Summary

48 clinically healthy and 30 ketotic cows were used to prove that after intravenous administration of furosemide 4,0 ml Dimazon® ad us. vet/animal 85,8 % (97,4 %) of the cows urinated within 15 (20) minutes, a lapse of time tolerable under practical conditions. Respecting certain limitations, the urine-samples obtained by this method were suitable for diagnostic examinations.

GROTTKER, S., G. AMTSBERG, D. SCHLOTE and J. LATTMANN: **Serological controls of feeder bulls after vaccination against thromboembolic meningoencephalitis (TEME).**
Dtsch. tierärztl. Wschr. **93,**67–69

Summary

50 bulls out of a feedlot were vaccinated twice within a period of three weeks against TEME with an $(Al\text{-}OH)_3$-adsorbed *Haemophilus-somnus*-bacterin, containing whole cells; 30 non-vaccinated bulls served as controls. Antibodies were measured by bacterial microagglutination-test before the initial vaccination, six weeks after the second one, and a year later. A variable rise in antibody-titers was found in vaccinated bulls as well as in control animals. Some bulls showed continuous, others decreasing antibody levels. A year later, the titers laid below those of the year of vaccination in 50 % of the bulls; 32,5 % showed the same level as before, and 17,5 % had an increase in serum-agglutinins. The bacteriological isolation of *H. somnus* by nasal swabs failed, and no clinical case if TEME occurred during the period of observation.

U. PALLESEN (1986): **Concentrating of antibodies against leucosis in bulk milk (by a dialysis-system) for examination in an ELISA-system.**
Dtsch. tierärztl. Wschr. **93,** 319–320

Summary

Samples of bulk milk taken from 180 herds free from Enzootic Bovine Leucosis were examined by means of ELISA as to their BL-Absorbance after having been concentrated by a dialyser. 20 of these milk samples had been previously enriched with a weakly BL-positive milk to a concentration of 2 volumepercent. The results show that variations of absorbance of the BL-negative samples of bulk milk generally remain below the range of reaction of the BL-enriched mixed milks; an overlapping area is discussed. The ELISA proves to be suitable for finding out one BL-positive animal within a herd of up to 50 cows when samples of concentrated bulk milk serum are used for examination.