Split Session - Feedlot

Dr. W. V. McElroy, *presiding*

Bovine Surgery: The Rumen Fistula for Treatment of Chronic Bloat

Bruce L. Hull, *D.V.M., M.S.*
Professor, Department of Veterinary Clinical Sciences
The Ohio State University
Columbus, OH 43210

Bloat in feedlot cattle often fails to respond to medical therapy. Constant tubing of the bloated animal often leads to esophageal irritation which in itself may perpetuate the bloat condition. The chronic bloat animal is often a poor doer, either because of the underlying cause of the bloat, or because of the bloat itself which interferes with feed consumption. Also one must consider the economics of constant treatment and the possibility of sudden death.

Considering these things one should consider surgical methods of bloat relief in any case of bloat which fails to respond to 1-2 days of medical therapy. Often these are feedlot cattle which have recently been started on a high grain ration.

Many of the devices which are commercially available for relief of chronic bloat are not adequate. Often the hole in these commercial devices is so small it easily becomes plugged. One must also consider the infection potential around these artificial devices.

Surgery

A temporary (ususally close in 4-8 weeks) rumen fistula is easy to place, is very effective in bloat relief, and if placed properly, has minimal danger of infection.

With the animal in a squeeze chute with the tail tied to the right, a small area (15 cm x 15 cm) high in the anterior area of the left paralumbar area is clipped and prepped for surgery. An inverted L block along the last rib (10 cm) and beneath the transverse processes (10 cm) using about 20 cc of local anesthetic is placed.

Before the actual surgery, the bloat should be relieved by stomach tube if possible. Sometimes as in the case of choke, this is not possible. If possible, the relief of the bloat by tube facilitates the surgery by making the rumen easier to manipulate at surgery.

A 5 cm diameter circle of skin is removed. This circle should be located about 5 cm behind the last rib and 5 cm below the transverse processes. Once the circle of skin has been removed, the muscle fibers are separated in a grid-like approach. Care should be taken when separating the transversus muscle fibers and peritoneum to avoid damage to the underlying rumen. This grid approach through muscle fibers acts like a valve on the resultant fistula and is important in maintaining anaerobic conditions in the rumen.

Once the abdomen has been entered, the rumen wall is grasped with a towel forcep and pulled out through the incision. This step is very difficult if not impossible if the rumen has not been decompressed prior to surgery. With the rumen wall pulled up in this manner (approximately 4 cm of rumen outside the skin in a cone-like appearance), it is sutured to the skin with interrupted Cushing sutures of #3 Braunamid.* Usually 4-8 of these sutures are required to form a tight seal around the fistula. This suture pattern serves to attach the rumen serosa to the external surface of the skin. With the rumen attached to the skin in this manner, contamination of the peritoneum, muscle planes, and subcutaneous areas is avoided.

Once the suturing is completed, the rumen is opened (essentially cutting off the top of the cone of rumen which is still held with the towel forceps). This creates a rumen fistula which is about 2-4 cm in diameter. When the animal is not bloated, the fistula is held closed by the grid incision in the muscles. When the rumen becomes bloated, the muscle fibers separate allowing the gas to escape.

It is advisable to place the calf on antibiotics for 2 or 3 days, to treat for fly problems if necessary and to remove the skin sutures about 10-14 days after surgery.

These rumen fistulas usually close spontaneously in about 4-8 weeks. However, this is somewhat dependent on the bloat and as long as the bloat continues and stretches the fistula, it tends to stay patent. Once the cause of the bloat (often abnormal flora) corrects itself and the bloat ceases, the fistual will usually close. In the rare case where the fistual

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becomes permanent, it can be closed surgically if this is warranted.

The placement of a temporary rumen fistula is a simple, fast, and cost-effective method of treating chronic bloat. As such, it should certainly be considered over the more traditional and time consuming medical practices.

References

1. Noordsy, J.L.: Food Animal Surgery. Veterinary Medicine Publications. 2. Turner, A.S. and McIlwraith, C.W.: Techniques in Large Animal Surgery, Lea and Febiger, 1982. 3. Anderson, J.F. and Frederiksen, E.D.: Surgical Fistula as an Aid in the Treatment of Chronic Bloat in Cattle. VM-SAC, October, 1976, 1363-1367. 4. Edmiston, L.K.: An Indwelling Instrument for Relief of Chronic Bloat in Cattle. VM-SAC, October, 1979, 1497-1499.

Abstracts

Therapeutic failures with antimicrobial drug treatment

Malcolm C. Roberts, BVSc, PhD

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Little has been written on therapeutic failures with antimicrobial drug treatment in any species. These agents, although life-saving in many severe infections, are also used indiscriminately, which limits an objective assessment of their efficacy. However, blame cannot be ascribed solely to the antimicrobial agent in any instance, because it is but 1 component of the host-microorganism-drug interaction. Many factors can modulate or mediate this interaction, resulting in therapeutic failure that represents a response or outcome less than that anticipated with the selected antimicrobial agent because the host was weakened and/or the microorganisms gained an ascendancy. Even at this stage, a change in therapy may produce a favorable response. The outcome is satisfactory if accompanied by complete remission of clinical signs. A therapeutic failure is frequently cited when a clear indication for antimicrobial drug use did not exist for an animal with a fever of undetermined origin, too much time elapsed before antimicrobial therapy was instituted, or therapy for nontreatable systemic or local infection was attempted.

Hypersensitivity reactions induced by antimicrobial drugs

Lloyd E. Davis, DVM, PhD

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Hypersensitivity reactions are adverse effects of drugs based on immunologic mechanisms and are dependent on combination of antigen and antibody. Other types of adverse drug reactions due to direct toxicity, drug interactions, and modification of drug disposition by disease are not related to immunologic processes and generally can be anticipated and avoided. Generally, allergic reactions in a given patient cannot be anticipated unless the animal has a history of allergy to some drug. Allergic responses are generally not dose-related. Some animals will respond to exposure to minute drug quantities with severe allergic manifestations. Herein lies the risk of administering subtherapeutic doses of active drugs as placebos. Atopic individuals have a greater tendency to develop an allergy to therapeutic agents. The number of occurrences of true allergic reactions to drugs in veterinary practice is unknown. In people, allergic reactions accounted for 6% to 10% of all drug reactions. A comparatively small number of drugs account for most of the allergic drug reactions in people. Allergic reactions in animals have been associated most frequently with penicillin G and cephalosporins; although, allergic reactions to sulfonamides, nitrofurans, and isoniazid may have occurred.

Concurrent use of corticosteroids and antimicrobial drugs in the treatment of infectious diseases in large animals

William L. Jenkins, BVSc, MMedVet, PhD

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SUMMARY

A selection of the potential risks and benefits to be gained from the concurrent use of anti-inflammatory corticosteroids and antimicrobial agents in the treatment of infectious disease processes in large animals is reviewed. Although this form of combination therapy appears to be rational, there is cause for serious concern. Precautions and guidelines are presented for the therapeutic management of those cases in which the use of corticosteroids in conjunction with antibacterial agents is unavoidable.

Antibiotic treatment of *Moraxella bovis* infection in cattle

Lisle W. George, BS, DVM, PhD; W. D. Wilson, BVMS, MS; J. Desmond Baggot, MVM, DSc, PhD; J. E. Mihalyi, BS

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An inexpensive, yet effective method for the treatment of cattle with ocular *Moraxella bovis* infections is needed. Proper selection of an antimicrobial agent for the treatment of cattle with *M. bovis* infections requires knowledge of the average minimum inhibitory concentration (MIC) for the bacterium, as well as an understanding of the distribution of antibiotics into ocular tissues and tears after parenteral, topical, or bulbar subconjunctival administration.

Therapeutic strategies involving antimicrobial treatment of large animals with peritonitis

Jerry P. Kunesh, DVM, MS, PhD

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The treatment of large animals with peritonitis presents special problems because the infection is in a transcellular space. Animals with infections in transcellular spaces are frequently difficult to treat because antibiotics do not get into these spaces at concentrations comparable with that in tissue or serum. This is especially true because the volume of fluid in the space increases, creating a greater surface or volume to blood vessel ratio. To increase the success rate in treating animals with peritonitis in which peritoneal fluid has accumulated, paracentesis should be performed to withdraw excess fluid. By doing so, the amount of time and drug required to attain therapeutic concentrations of antimicrobial drugs is greatly decreased.

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