

The second instrument I wish to present to you makes this job a little easier. We obtained these cutting-edge tongs from a local veterinary supplier. One side of the pincer part of the tongs has a cutting edge, and with a squeeze and slight twist the nasal septum is punctured. The pincer part of the tongs also has a concave surface to allow you to slide the bull ring right over the tongs and makes it easier to put the screw in the ring. One can normally place a ring in a yearling bull on the end of a halter rope, as the control of the animal is increased by your grasp on the tongs.

The third instrument is a metal rod, 30 inches in length with a smooth wooden ball on each end. We use this instrument as an extension of one's arm in attempting to get a complete replacement of the prolapsed uterus. First, replace the prolapsed uterus and then by using this instrument attempt to complete the replacement. We have had no problems with excessive straining, re prolapsing, or the need for more than simple interrupted suturing of the vulva.

Use of a Large Cattle Trocar

Max C. Joseph, D.V.M.

North Vernon, Indiana 47264

Use of the large cattle trocar is not original in our practice. It goes far back in veterinary medical history and I think its demise is unjustified. I was introduced to its use by one of my best friends, a veterinarian licensed and practicing from 1903 to 1963.

The term "general practice" must have been coined to describe our practice and it carries on through the bovine portion of the operation. This means that we have all types of cattle operations with an assortment of owners ranging from the full-time professional cattleman to the part-time hobbyist who may be a production line worker in one of the local industries. The variety of methods concocted to overload the ruminant digestive system is mind-boggling and some of the facilities we find never cease to amaze me. If this presentation does no more than provide you an "out" when you are at your wit's end, then hopefully this time is not wasted.

The object of our attention is a large trocar utilizing a cannula nine inches long by seven-eighths inch in diameter with a flange on one end. Holes are drilled in each ear of the flange in order to anchor the cannula to the skin after it is placed in the rumen.

The trocar is used as a safe, quick, easy and fairly efficient method of removing excessive or toxic rumen contents. We use it in any type of rumen overload when results cannot be obtained by more conservative treatment. It is a very good substitute for rumenotomy in many cases. Considering the shock to the animal in major abdominal surgery, I feel it may be preferred course of action in many cases. A scalpel is used to make a two-inch horizontal incision low in the left flank, going through the skin and into but not through the muscle layers. Location of the incision

would be very near to the fold in the flank and a little anterior. The trocar with cannula is then thrust sharply into the rumen and withdrawn from the cannula. A halter, tail-hold, and sometimes a nose lead are the only restraints required.

The cannula can be moved in any direction in the rumen to aid in the expulsion of contents, whether gaseous, liquid or semi-solid. Directing the cannula forward, down and medially usually will remove the most fluid contents. Moving the cannula in and out with a kind of pumping action will facilitate the flow. Insert a stomach tube through the cannula and pump five gallons or more of water into the rumen; remove the stomach tube and allow fluid contents to escape. This procedure may be repeated as often as you feel necessary. We sometimes instruct the owner to instill water a few hours later with a hose from a hydrant. If the animal is not extremely toxic, it isn't necessary to devote a lot of time at this point—let the cow and the farmer worry about it.

It seems well to finish by pumping in your favorite compound of ruminatorics, antacids, detoxicants and laxatives. In toxic, acidotic or dehydrated animals we include intravenous fluid therapy depending on the conditions found.

The last thing we do is to suture the cannula to the skin with one-fourth inch umbilical tape. The cannula is to be left in place for a minimum of three days and probably should not be left over five days. The sutures are cut and the cannula withdrawn. No further treatment is necessary, except in fly time some fly spray or screw worm spray should be used occasionally. The hole into the rumen may require three weeks or so to close but will not cause trouble.

The greatest problem we have had is in delaying our decision too long before using the trocar. Needless to say, we don't save them all. We have used the trocar for twenty years and I can't remember a real complication caused by it. It is safe in advanced pregnancy—I have used it two or three times on cows that calved normally while the cannula was in place.

We include in our fee a five dollar deposit on the cannula to encourage the owner to return it.

I think you will especially appreciate this instrument when faced with a barn full of foundered cattle on a busy day or a cold night or, better yet, a barn full of cattle and no barn. Thank you.

A Successful Treatment for Cows with Clinical Signs of Fatty Liver Syndrome

Paul G. Eness, D.V.M.

Ames, Iowa 50010

The fatty liver syndrome (FLS) of dairy cows is similar to some other bovine nutritional problems in that the incidence of the disorder is reflected by economic conditions at play in the cattle industry. Reports of the condition appear to be again on the in-

crease now that grain prices are declining concurrently with an increase in milk prices. Dairymen once again feel that they can afford to take good care of their animal and be paid for this care. Unfortunately, in the case of the dry cows some herdsmen and owners are lavishing too much attention in the form of high-energy corn silage and other feeds.

Prevention of the disorder must simply be directed at avoiding excessive condition at calving time. To accomplish this it may not be enough to reduce the energy intake of the dry cows. The efficiency of fat metabolism is greater in lactating animals than in those which are dry, therefore cows in late lactation which are consuming energy at a level greatly in excess of their requirements for maintenance and production will have a tendency to become grossly overconditioned. These animals, even if later limited to a conventional dry cow ration which provides only the energy required for maintenance and gestation, in some cases may still be excessively fat enough to be subject to problems in the post-calving period. To avoid these candidates for FLS a dairyman must therefore correct overfeeding practices, especially in the dry period but in many cases in late lactation as well.

The practitioner who has previously been through an episode of FLS will readily recognize herds which are candidates for the problem and should be able to make feeding recommendations which will help alleviate the problem once the overfat animals have all calved. In the interim those cows which have calved and display clinical signs, and many of those which are due to calve before a weight reduction program can show results, will require medical treatment. FLS is a complex syndrome and as the manifestations of the disease are numerous it has been traditional to follow a "shotgun" approach to therapy. The typical case is very ketotic and completely anorectic, displays rumen atony, may show evidence of various electrolyte deficiencies or imbalances and at the same time may be afflicted with septicemia or toxemia secondary to mastitis or metritis. Thus, if a symptomatic approach to treatment of the condition is followed, intravenous dextrose and electrolytes plus antibiotics, antihistamines, steroids, vitamins and rumen stimulants may all be indicated, and may need to be repeated daily for a prolonged period. The problem with this approach is that even though the clinician may see *some* improvement in *some aspects* of the condition, the dairyman is often left with a ketotic, anorectic cow which may linger for a week or more before succumbing. Specific therapy for the condition which has been recommended in these cases includes the use of insulin. In our practice we have found most animals afflicted with the FLS to be hypoglycemic and we have been reluctant to initiate insulin therapy in animals with blood glucose levels of 15 to 35 mg % for fear of producing hypoglycemic shock and death.

For the past three years the Iowa State University Veterinary Clinic has been using repeated doses of

ACTH (Adrenamone®, Armour-Baldwin) to successfully treat many cases of FLS. Our diagnostic and treatment regimen involves the determination of serum glutamic oxaloacetic transaminase (SGOT) levels to screen animals which are showing clinical signs of FLS. The purpose of the SGOT is to determine which animals are seriously enough involved to require ACTH therapy, as well as to measure response to therapy. The transaminase enzyme is released in large amounts from necrotic muscle and hepatic cells. SGOT levels of 200 to 300 Reitman-Frankel (RF) units two to three days post calving indicate a potential serious problem if the elevation is the result of damaged liver cells. These animals bear close observation. From previous experience we have learned that animals with SGOT levels of over 500 RF units suffer liver damage of a degree that most will not survive even with the employment of the most intensive shotgun therapy as previously discussed. Of the first fifteen animals observed with SGOT levels of over 500 RF units, all but two died. ACTH therapy was not utilized on these animals. Clinical pathology records are available on twenty-six animals in which SGOT levels of 500 RF units or higher were observed and which were treated with ACTH. Only four of these animals did not survive. Among those which survived were several with SGOT levels of over 1500 and one of 3300 RF units.

Various dosage levels and schedules have been employed but the most successful appears to be one which provides continuous therapy for several days. An initial dosage of 600 units intramuscularly is followed by 400 units per day the second and third day, none the fourth day and 200 units on day five. Most animals which have been completely anorectic will commence eating on the second or third day of treatment. The response of these animals is enhanced by the daily administration of one to two pints of propylene glycol by oral drench during ACTH therapy and until ketonuria is no longer evident. As FLS animals appear more susceptible to infectious diseases, it is recommended that cows be covered with indicated antibacterial agents during treatment.

As ACTH is relatively expensive, the practitioner who follows this program is committing himself to approximately twenty dollars in drug cost for ACTH alone when he initiates this therapy in an animal. Where it has not been convenient for us to visit the farm every day for four or five days and in an attempt to reduce the cost per animal, we have in some cases made only one call back. If the animal shows improvement on the second day we have dispensed the drug in daily measured doses in disposable syringes, labeled as to the date the animal is to receive that dose.

Through the use of ACTH plus moderate supportive therapy in treating cows with FLS, we have not only been able to greatly increase our survival rate but in many cases by shortening the course of treatment have been able to reduce our cost of treatment below what it was when we did not use ACTH.



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