

Surgical Correction of the Displaced Abomasum

By
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Since 1950 the clinical diagnosis of displaced abomasum has been on the increase. Whether this is due to recent recognition of this malady or to an increased incidence in hereditary predisposition does not really concern us here. What we are concerned with is the treatment of this condition.

Pathogenesis

There are three predominant theories as to the cause of this condition. The first theory considers the possibility of abomasal atony. A few of the theoretical causes of this atony are stress of parturition, heavy lactation, toxemia due to mastitis or metritis, indigestion due to high concentrate rations, or metabolic disorders such as milk fever or ketosis. When atony occurs, the abomasum becomes distended and migrates ventrally and to the left side of the rumen.

The second theory, or mechanical theory for the displacement of the abomasum, advances the idea that the gravid uterus lifts the rumen from the abdominal floor while at the same time the abomasum is pushed to the left and forward. When the uterus is emptied, the rumen drops to the abdominal floor and traps the abomasum.

The third theory contends that the increased incidence is due to selective breeding. Dairymen prefer cows that are large in the abdominal cavity, and this excess room allows the abdominal contents to wander.

Clinical Signs

The clinical signs of a displaced abomasum closely resemble those of a ketosis. The animal shows an intermittent ano-

rexia (especially for grain) with a normal temperature, pulse, and respiratory rate. There is a rapid weight loss, depression, and decrease in production. The rumen sounds are weak, continuous, or absent; and the feces are scanty and putty-like. There is a good chance that there will be a history of recent calving. One would be unable to palpate the rumen on the left side and would find it displaced medially. Other signs would include a sunken left paralumbar fossa, borborygmus at the left costal arch, and a typical "ping" on the left side on auscultation and percussion. In a clinical pathology exam one would find a ketonuria.

Treatment

1) Medical: Using this approach to the problem one tries to stimulate the appetite and improve muscular tone and contractility. Glucose (IV), calcium gluconate, and cascara sagrada are used to medically treat a displaced abomasum.

2) Mechanical: There are several proposed ways to mechanically displace the abomasum back to its original position without surgical intervention. Three of these are truck rides, rolling, and forced exercise. The most effective of these is rolling. In this procedure the cow is cast on the right side, rolled in a ninety degree arc while in dorsal recumbency, and released on the left side.

3) Surgical: The method that we use to repair the displaced abomasum surgically is an abomasopexy.

ABOMASOPEXY

Pre-operative Care

Sedate the cow with five cubic centimeters of promazine hydrochloride (spa-

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rine*) IV or two ounces of chloral hydrate orally before she is cast.

Restraint

Cast the animal using the Burley method. While holding the animal with a rope halter, place a forty foot rope over the withers. Run the ends of the rope between the forelegs and cross at the sternum. Run the ends up each side of the body, and cross at the back. Run the ends down the sides of the body again and then out between the hindlimbs. Pull the cow down, tie the legs together, and stretch them out. Tie the head out straight. Roll the animal into right dorsal recumbency against a wall or manger. The body should tip slightly toward the operator and be blocked with feed sacks in this position. Tie the tail and restrain the feet by wrapping and tying to prevent manure contamination.

Preparation of Operative Site

Clip an area from the posterior aspect of the sternum (xyphoid) to the umbilicus and from one milk vein to the other. Scrub the area with soap and water and disinfect with alcohol and merthiolate.

Anesthesia

Using 4% procaine or 2% xylocaine for a local block, infiltrate the incision line with a two inch eighteen gauge needle and a twenty cubic centimeter syringe. Injection sites are about one and one half inches apart, and the abdominal wall and peritoneum must be infiltrated by using ten cubic centimeters at each site.

Surgical Considerations

1) Drape the area to the right of the midline so that an incision ten inches long immediately posterior to the xyphoid and parallel to, but one and one half inches to the right of the midline can be made.

2) Make the before described incision into the abdominal cavity by cutting

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through the skin, subcutaneous tissue, abdominal tunic, rectus abdominus muscle, aponeurosis of the transverse muscle, and the peritoneum. Control hemorrhage and ligate the larger branches of the milk vein.

3) The surgeon should introduce a hand through the incision and down along the left side. Cup the hand and sweep the displaced abomasum anterior and toward the incision. One stay suture should be used to hold the abomasum in place.

4) Using a half circle, taper-point needle and number two chronic catgut, place a simple continuous suture through the abomasal musculature and through the deep abdominal wall two and one half inches lateral to the incision. The second row of sutures will be made at the time that the peritoneum is closed by including the abomasum. Number two chronic catgut and a simple continuous suture pattern will again be used.

5) Using number three chromic catgut close the abdominal tunic and musculature with hand tied simple interrupted sutures. Using number one chromic catgut and a simple continuous suture pattern tightly close the subcutaneous tissues. Close the skin with a Ford interlocking suture pattern of heavy vetafil.

6) Roll the animal gently into right lateral recumbency and remove the ropes. Gently urge the animal to sternal recumbency. In twenty to thirty minutes the animal should be brought to its feet.

Post-operative Care

Systemic antibiotics should be used over a three day period because the area is constantly being contaminated. Feed four to eight pounds of grain per day and hay free choice. Remove the sutures in about seven days.

REFERENCES

1. *Diseases of Cattle*, American Veterinary Publications, Second Edition, pp. 198-204.
2. Fox, F. H., "Abomasal Disorders." *JAVMA*, 147, (Aug. 15, 1965) pp. 383-388.
3. Leahy, J. H., and Borrow, P., *Restraint of Animals*. Second Edition, pp. 117-120.
4. Lowe, J. E., et al., "Abomasopexy for Repair of Left Abomasal Displacement in Dairy Cattle." *JAVMA*, 147, (Aug. 15, 1965) pp. 389-393.
5. Mather, M. F., and Dedrick, R. S., "Displacement of the Abomasum," *Cornell Veterinarian*, (July, 1966) pp. 323-343.