Case Report: Abomasal Displacement in an Indubrazil Zebu Bull

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On January 22, 1989 we were called to the state of Veracruz, on the coast of Mexico, to examine a 19-month old Indubrazil Zebu bull (Bos Indicus), that had presented recurrent bloat and progressive loss of physical condition for the last three and a half months.

Clinical History

The bull was born on June 1st, 1987 on the same farm and was reared on improved tropical grass (Cynodon plectostachyus), alfalfa hay, 2-3 kg. of concentrate per day and all the milk he could suck from his mother. After weaning, (February 1988) he was fed concentrate during the next four months and there after only the same tropical grass. In October, he was thin, presented diarrhea and moderate bloat, for which he was wormed and given ADE vitamins. The bloat was frequently relieved by introducing an esophageal tube. He was given a ration consisting of 3 kgs of concentrate mixed with molasses.

Clinical Exam

The animal presented a poor body condition, with an obvious gas accumulation in the rumen. Temperature, respiratory rate and cardiac rates were within normal limits. A high toned ping was elicited over the left side from the tenth intercostal space to half the paralumbar fossae. The ping was positive on auscultation/percussion, and on auscultation/sucussion; very clear tinkling sounds were audible. A diagnosis of left displacement of abomasum (LDA) was given. On rectal palpation the rumen was detected to be in the middle of the abdomen, the left kidney was palpated immediately below the right transverse processes of the lumbar vertebrae, but the displaced abomasum was not palpated. The bull was rolled over right side in a clockwise direction, as viewed from behind, in an attempt to relocate the abomasum to its normal ventral position. However, the abomasum moved to the right side of the abdomen being indicated by the presence of the ping and tinkling sounds using auscultation/percussion and auscultation/sucussion. On rectal palpation the rumen was located to the left of the abdomen, the kidney was in a medial and more ventral position, and the abomasum could be felt between the rumen and the right costal arch. This rectal palpation further confirmed the diagnosis of LDA. Since the owner rejected surgery as the choice treatment, the bull was rolled in a counterclockwise direction relocating the abomasum to the left side of the abdomen and was given calcium gluconate (55 ml) SC and instructions were given to administer glucose serum (500 ml) IV BID for three days, magnesium sulfate (100g) per Oz BID for three days and Pilocarpine (80mg) + Arecoline (32 mg)* SC BID for three days. He was kept off concentrate and was fed alfalfa hay ad libitum.

The bull continued presenting recurrent bloat during the following weeks. On February 19, 1989 (28 days later), on inspection, it was evident that the bull had lost considerable weight and presented a meager condition (Figure #1), the left flank was sunken in, and on auscultation/percussion, there was a dull ping over the left side. Conversely, a "good ping" could be elicited over the right side from half the paralumbar fossae to the 11th intercostal space. On rectal palpation the cecum, resembling a

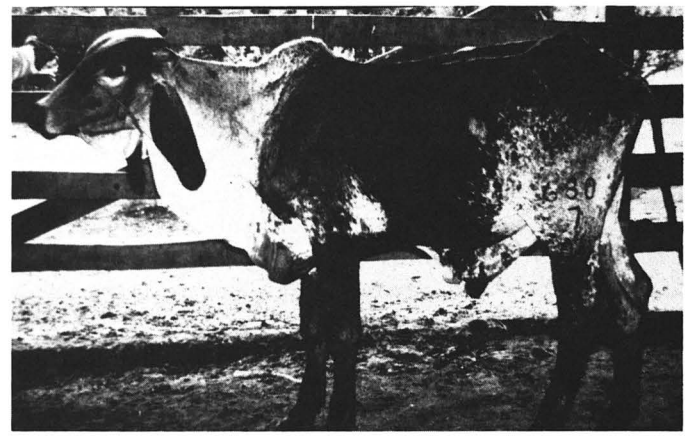

FIGURE 1. Indubrazil bull with left displacement of abomasum presenting a meager condition and a sunken left flank.

* Laxotonico Inyectable. Loeffler—Insituto Agrobioquimico SA de CV, Mexico D.F.

huge sausage projecting into the pelvic cavity, was evident. It was decided to roll the bull over on its right side in order to produce a right displacement of abomasum (RDA) instead of a left one. Then a high toned "ping", typical of abomasal displacement was detected from the 9th to the 12th intercostal space using auscultation/percussion. The presence of gas bubbles and liquids splashing against the abomasal wall was evident in the upper half of the right abdomen (Figure 2). On rectal palpation the cecum had disappeared and by deep examination the abomasal displacement was felt. With the consent of the owner, a surgical treatment was carried out.

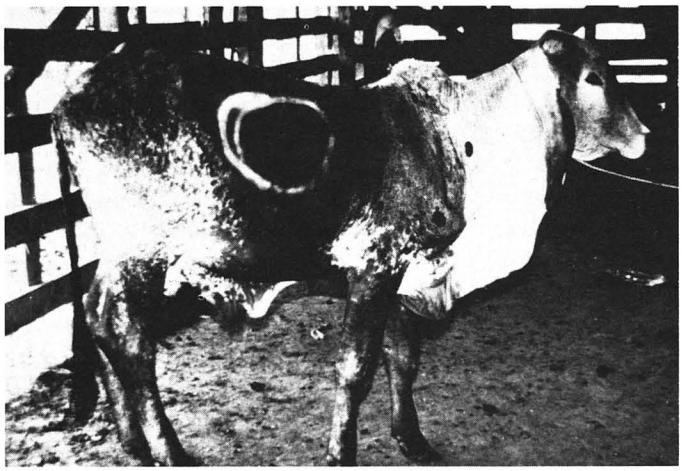

FIGURE 2. Left displacement of abomasum converted to right displacement of abomasum. The area of tympanitic resonance is shown by the circle.

The right paralumbar fossae was prepared in an aseptical manner. The patient was sedated with 18 mg of Propiopromacin* and the right paralumbar fossae was blocked with 2% Lidocaine**, in a line parallel to the last rib. After exteriorizing the abomasum, a sample of abomasal fluid was taken. This sample yielded a pH of 4***. While manipulating the organ its liquid contents drained cranially into the forestomachs and caudally into the duodenum. A right flank abomasopexy was performed (Figure 3). The cecum was exteriorized, deflated and repositioned into the abdominal cavity. After finishing the surgical procedure, high doses of Penicillin (20,000 IU) IM SID for one week were prescribed. Three months later, the owner reported the bull was doing well.

* 1% Combelen. Bayer de Mexico, SA de CV, Mexico D.F.

** Servacaina. Laboratorios Intervet, Mexico D.F.

*** Hydrion papers. MicroEssential Labs., Brooklyn, NY 11210, USA.

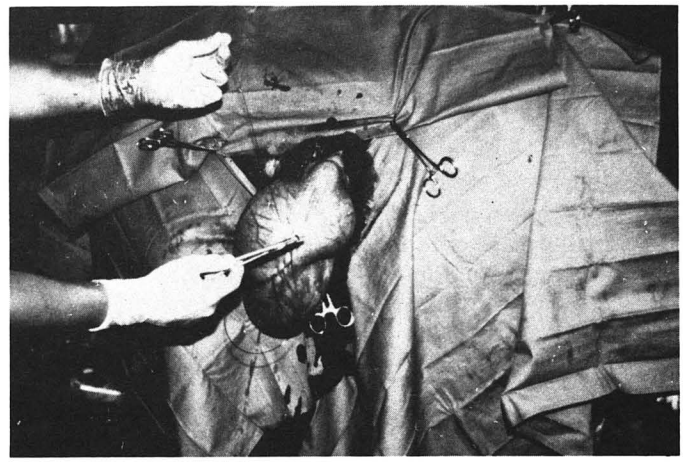

FIGURE 3. Right flank abomasopexy. Placing a continuous suture pattern through the serosa and muscular layers of the abomasum's greater curvature.

Discussion

Abomasal displacements had not been recognized as a disease of growing cattle until recently. It has been reported in breeds such as Holstein-Friesian, Aberdeen Angus, Guernsey and different cross-breeds.[2,3,4,7,10] To our knowledge, this is the first report in the world of an abomasal displacement in a Zebu bull and therefore in the Indubrazil breed. The clinical history of this bull losing weight for no apparent reason and recurring bloat, has been frequently mentioned in the clinical histories of growing animals with abomasal displacements.[2,4,5,10] Even so, one would not have this problem among the differential diagnoses for a bloating, poorly animal, grazing on tropical land. In these systems, the farmers that sell pure breed stock feed their cattle with considerable quantities of concentrate. The author has observed the presence of diseases related to feeding high levels of concentrate, such as metabolic acidosis, acute and chronic laminitis.

During the first visit to the farm it was decided to leave the animal with an LDA, instead of an RDA, which was produced by rolling the animal over, due to the severe metabolic changes and vascular damage that occur as a consequence of an RDA.[5,6,8] The medical treatment instituted to the bull[1,9] did not successfully correct the LDA.

By working with dairy cattle, the author has had the opportunity to observe abomasal displacements in growing calves and heifers. Once a diagnosis of LDA is given and the calf is kept off feed for one day to be surgically treated the next day it sometimes becomes totally impossible to say if that particular animal is still displaced or not, because the metallic sounds or pings totally disappear. That is what happened to this bull on the second visit to the farm since instructions were given not to feed

him from the night before. In addition, on rectal palpation, it was felt that the cecum was filled with gas and very enlarged. Considering this, the bull was rolled over producing an RDA. This was a right flank abomasopexy was performed and the cecum was easily manipulated.

Trying to establish the cause for the abomasal displacement in this bull, one can think that the concentrate given to him from the time of weaning, might have been the reason, which means that the problem was one of a long duration when it was diagnosed (at least 5 months). Abomasal displacements are no longer a disease exclusive of dairy cows as it has been shown by many clinicians.[2-5,7,10] Abomasal displacements may be occurring in non-dairy animals including well-fed Zebu cattle at such a level that it guarantees considering this disease in the differential diagnosis of certain entities.

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