

Case Report

RUMINAL OBSTRUCTION ASSOCIATED WITH NON-DIGESTIBLE MATERIALS IN A MUTURU COW: A CASE REPORT

EZE, C. A.

Department of Veterinary Surgery and Obstetrics
University of Nigeria, Nsukka
Nigeria

SUMMARY

A five-year-old muturu cow in a semi-intensively managed herd with advanced pregnancy suddenly became anorexic, moribund and recumbent. While in recumbency, there was abdominal distension and the animal groaned respiration. Emergency slaughter was carried on the animal within 12 hours of onset of these signs. A large nylon rope and a cloth (rag) with sediments of sand were found in the rumen. The foreign bodies together with pockets of sand in the cloth weighed 1.83 kg. Semi-intensive husbandry practice does not give the animal the opportunity of optimal grazing and as such some animals develop pica which include chewing of tethering rope and geophagia. This, coupled with pregnancy in this report predisposed the animal to pica. It is concluded that only good husbandry practices nutrition and environment can eliminate reproductive losses. Management practices and environment contribute to the presence and kind of foreign bodies present in the ruminal stomach. Again, field diagnosis of the presence of ruminal foreign bodies is naturally a difficult one except where exploratory surgery is involved.

KEY WORDS: Foreign bodies, rumen, muturu cow.

INTRODUCTION

Allotrophagia or pica refers to the ingestion of materials other than normal food and has been variously defined to include the eating of earth. It is due in most cases to dietary deficiency either of bulk or in some cases more specifically fiber, or of individual nutrients particularly salt, cobalt or phosphorous (Radostits, *et al.*, 1994; Clarence, 1991; Roberts, 1956). It is considered as normal behaviour in rabbits and foals (Crowel-Davis, *et al.*, 1985) where it is thought to be a method of dietary supplementation or refection of the intestinal bacterial flora. Boredom, in the

case of animals closely confined, often results in the development of pica. Chronic abdominal pain due to peritonitis, gastritis and central nervous system disturbances including rabies and nervous acetoneemia are also causes of pica.

Poisoning, particularly lead poisoning, and botulism are sequelae of pica. Foreign bodies lodging in the alimentary tract including accumulation of wool, fiber, or sand may cause obstruction; perforation of the esophagus or stomach. Grazing time is often reduced and livestock may wander away from normal grazing (Radostits, *et al.*, 1994). Cattle

are notoriously lacking alimentary finesse, a deficiency that allows an amazing variety of foreign bodies prehended with the food, to be deposited in the fore stomach (Jubb *et al.*, 1993). Sheep are largely immune because of their more selective eating habits. Foreign bodies are rarely found in the rumen of goats despite their reputation for indiscriminate feeding habits. In consequence, large proportions of adult cattle and very few goats or sheep have foreign bodies in the rumen and reticulum but rarely in the omasum. The paucity of prevalence of case reports on foreign body obstruction in muturu cow necessitated this report. Inadequacy of management practices in many parts of this country for ruminants in general and cattle in particular is another justification for this report. The history and clinical signs presented may help the veterinarians, to at least, suspect the case in the field if not confirmatory.

CASE REPORT

A five-year-old muturu cow in a semi-intensively managed herd was reported

sick with primary complaint of being diarrhoic. After veterinary examination, it was treated with parenteral antibiotics –penicillin/streptomycin and subcutaneous injection of ivermectin[®] and enterostop[®] given orally. Though the diarrhea stopped following treatment, there was a noticeable reduction in feed intake as the cow occasionally grazed sparingly in the field. The water intake was normal. After about three months, the animal in advanced pregnancy suddenly became recumbent, went off feed and water. There was increased abdominal size with respiratory groans. The condition of the cow worsened within 12 hours of the onset of these signs. At this point, the animal was slaughtered. On opening the rumen, a large nylon rope (Fig. 1) and a piece of cloth (rag) containing pockets of sedimented sand were recovered from the rumen. These foreign materials (Fig. 2) together weighed about 1.83 kg. Further inquiries from the owner revealed that the cow was fond of chewing tethering ropes as it frequently freed itself from the shed and barn where it used to be tethered.



Fig. 1: Rumenal foreign bodies (C=cloth; R=rope; S=sand)

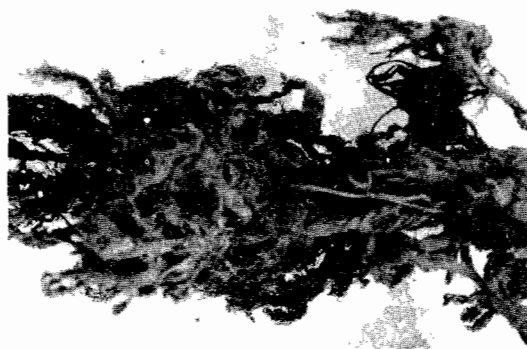


Fig. 2: Rope separated from other ruminal contents

DISCUSSION

Muturu cow is the most primitive and unimproved breed of cattle indigenous to Eastern Nigeria (Ofomata, 1978). In Eastern Nigeria, apart from the pastoralists that migrated from the north, muturu remains the only indigenous breed of cattle reared by the natives. Most farmers practice semi-intensive system where the cattle are tethered all year round through rotational grazing in the field. In the evening they are returned to the barn. This traditional practice of tethering is predominant probably because of the presence of compound farms and human population pressure on land. This system has its obvious disadvantages. This method of management does not give the animal the opportunity of optimal grazing. Foreign bodies consisting largely of hair or wool (trichobezoars) or plant fiber (phytobezoars) are very common in the stomach of cattle because they lack discrimination against hard materials in the feed and incompletely masticate feed at the time of ingestion. The hair is swallowed after licking particularly by animals deprived of dietary fiber. However, the presence of foreign bodies in the fore stomach is not peculiar to cattle alone. Smythe (1959) has found as many as five large stones in the stomach of a dog accidentally killed. Honnas *et al.* (1993) reported 18 cases of proventriculotomy due to foreign body obstruction in ostriches where sand, rocks or gravel in combination with grass, leaves, wool, nails, wire and other fibrous materials were implicated. In the present report, the animal was in third trimester of pregnancy. Morris (1960), noted that gestation and lactation in

mammals constitute maximum physiological stresses. In the gestation and lactation periods the demands on the body stores for various nutrients are tremendous. Tissue residue, deposited in the body prior to breeding, are called upon to meet these emergency demands. Roberts (1956) equally observed that mineral deficiency has been known to cause infertility and fetal deformity. In Nsukka area, animals are hardly given salt-licks and sufficient water. This is mainly because of scarcity and partly out of ignorance, and this has been responsible for destruction of clay pots used to store water and development of other vices by the animals. The increased demands for minerals as a result of pregnancy may be responsible for geophagia observed in this report. Again, the presence of cloth (rag) in the rumen attests to this. Cloth (rag) materials are chewed primarily because they contain sweat, a by product from the body as a source of urea. Further more, the system of managing this animal as noted by Ajala (1995), does not give the animal the opportunity of optimal grazing. Boredom, in the case of animals closely confined, often results in the development of pica (Radostits, *et al.*, 1994) Therefore, the chewing of tethering rope could be attributed to boredom of close confinement, and attempts to free self from such condition. Radostits *et al.* (1994) states that chronic abdominal pain due to peritonitis, gastritis and central nervous system disturbances including rabies and acetonemia are also causes of pica. Since the history of this case shows that the animal has suffered from diarrhoea about three months earlier, it is equally possible that mineral loss triggered off

the pica while pregnancy promoted it. What is not known is whether the diarrhoea resulted from swallowed rope which according to Clarence (1991) is capable of causing gastritis with subsequent impaction. Impaction is also implicated as a result of excess consumption of roughage that is low in both protein and energy.

Nylon rope and the cloth as reported fulfill this criterion. These materials were recovered from the rumen, it is possible that the moribund and recumbent nature of the animal's condition could be attributed more to obstruction of the rumino-reticular orifice. However, respiratory groans may be as a result of such complication as fermentation of ruminal contents and subsequent dilatation (causing bloat) and probable change in its pH value.

Apart from nutritional demands, the pregnancy in this instance may have also contributed in exacerbating the condition as its volume reduces the volume of oxygen taken in during inspiratory phase and yet the dam requires extra volume of oxygen to maintain the foetus. Ruminal foreign body obstruction is under almost constant consideration in the differential diagnosis of diseases of the digestive system in cattle because of the similarity of its signs to those other such diseases like vagal nerve dysfunction, reticulo-peritonitis, and diaphragmatic hernia. Loss of condition presenting various signs is not peculiar to cattle alone. Honnas *et al.* (1993) reported high emaciation and severe weakness among ostriches with proventricular obstruction.

It is concluded that the combination of proper environment, husbandry and

dietary management of breeding stock should be adhered to, as this will eliminate majority of reproductive problems. From this report, management practices, and environment contribute to the presence and kind of foreign body material present in the ruminal stomach of cattle. Again field diagnosis of the presence of ruminal foreign bodies in cattle is naturally a difficult one except where exploratory surgery is involved.

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