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SHORT COMMUNICATION

Surgical Management of Ruminal Impaction due to Indigestible Foreign Bodies in Cattle

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ABSTRACT

A Nine year old cow was presented with the history of chronic recurrent tympany for the last 2 months. On rectal examination, foreign materials were palpated inside the rumen. Rumenotomy through left flank approach using paravertebral nerve block was done. Around 10 kg of foreign materials were removed and the animal regained normalcy successfully.

Keywords: Cow, foreign bodies, impaction, rumenotomy

Rapid urbanization, industrialization and acute mineral deficiencies are the common causes for foreign body ingestion in ruminants (Dabas *et al.* 2010). Non-penetrating foreign body syndrome is characterized by accumulation of plastic, polythene bags, ropes and non penetrating metal objects like nuts, bolts in the rumen and reticulum of bovine (Dange, 1993). . Since indigestible materials increases rumen motility initially, the same may get entangled to form a big lump posing difficulty during eructation and resulting in chronic recurrent tympany which sometimes may lead to death of the animal if not treated (Reddy Ravindra *et al.* 2004).

A nine year old local breed cow was brought with the history of chronic recurrent tympany for last 2 months. Routine clinical examination revealed pale mucous membrane, complete cessation of rumination, ruminal impaction and atony, reduction of rumen motility, scanty faeces, inappetance and distended left paralumbar fossa. On per rectal examination, distended and heavily impacted rumen and constipated feces in rectum were found.

Clinical sign of fore-stomach obstruction in ruminants were partial to complete anorexia. Cattle reared in urban and sub-urban environments showed impaction of rumen due to accumulation of foreign bodies which resulted in interfere the flow of ingesta leading to distension of rumen and absence of defecation. On rumen fluid analysis, the rumen fluid was greenish brown colour, watery consistency, sedimentation activity less than 3 minute; pH of 5.6; methylene blue reduction time (MBRT) less than 6 minute, glucose fermentation time with little gas formation and subnormal protozoa were observed. On the basis of above findings it was decided to perform rumenotomy.

The left flank of animal was prepared routinely for aseptic surgery (Fig. 1 A). Regional anaesthesia of left upper flank is achieved with paravertebral nerve block using 2% lidocaine hydrochloride solution for rumenotomy. Skin incision was made on 4 cm caudal and parallel to the last rib. Exploration of the abdomen following laparotomy was thoroughly done to examine various abdominal organs and ruminal wall. A fold of rumen is exteriorized and a small incision at the exposed ruminal wall brought in view the inside contents. The incised edge of ruminal wall was fixed to a rumenotomy frame and hook o prevent slipping of the edge and to keep the incision open. The interior of the rumen was found to have impacted and

entangled polythene materials were recovered from the rumen with gentle force and in difficult situations the materials were removed by cut ing into pieces (Fig.1 B). Strangulated wastes, rubber material, pieces of leather, nylon, synthetic fibers and small metal nails weighing around 10 kg were recovered from the rumen and reticulum (Fig.1 C). The rumen wall was closed in double layer following cushing and Lambert suture pat ern using no-2 chromic catgut. The abdominal cavity was washed with normal physiological saline. The laparotomy incision was closed as per the standard technique. Post-operatively Dextrose Normal Saline 4 liters I/V and Strepto-penicillin 5 gm I/M for 5 days were administered. Sutures were removed on 12nd post-operative day. The animal recovered successfully and gained back normalcy.

The ingestion and lodgement of foreign bodies are common primarily due to indiscriminate feeding habits. The indiscriminate feeding habits and mineral deficiency make them susceptible to inadvertent ingestion of foreign materials (Ramprapbhu *et al*. 2003). . Ruminants were notorious for ingestion of foreign bodies this could be related to nutritional deficiencies and feeding management of the animals which were the root causes for various problems in different organs of the animals (Kahn, 2005). The rumen impaction recognized to a condition which resulted from the accumulation of the indigestible materials in the rumen. Rectal palpation is one of the most reliable methods of diagnosing rumen impaction (Grymer and Ames, 1981). In the rumen fluid analysis, the prime watery consistency characteristics may be due to the presence of inactive microflora related to the foreign body syndromes which disrupt the bacteria and protozoa (Jasmin *et al.* 2011). A cow subjected to rumenotomy, two-third of the ruminal contents were evacuated and refilled partially with refilling agents viz; 2 kg of 5 cm length chopped hay, 3 kg of teff straw, half kg of sugar and 100 g of sodium chloride to revive the rumen ecosystem. Hence, it is recommended that pollution by polythene bags should be strictly avoided and allowing animals in polluted grazing land should be evaded. Clean up of the environment and provision of balanced rations would substantially reduce the occurrence of plastic foreign body in cat le. Rumenotomy is the only effective method of treatment for plastic foreign bodies but an early diagnosis is essential for favorable outcome.

Fig. 1. Surgical intervention for foreign bodies removal. A. Preparation of surgical site B. Removal of entangled polythene material from the rumen C. Removed foreign materials

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