Ruminal Impaction due to Indigestible Foreign Bodies in a Cow And Its Surgical Management

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Abstract

A seven year old cow was presented with the history of chronic recurrent tympany for last 3 months. Entangled materials were palpated inside the rumen while recording the ruminal motility by pressed fist on left paralumbar fossa. Rumenotomy was conducted. Around 30 kg of foreign materials were removed and the animal recovered uneventfully.

Key words: cow, foreign bodies, impaction, rumenotomy

Introduction

Rapid urbanization, industrialization and acute mineral deficiencies are the common causes for foreign body ingestion in ruminants (Dabas et al., 2010). Since indigestible material increases rumen motility, 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).

Case History and Diagnosis

A seven year old crossbred Jersey cow was brought with the history of chronic recurrent tympany for last 3 months. Routine clinical examination revealed dullness, depression, congested mucus membrane, dehydration, atonic rumen and distended left paralumbar fossa. Presence of metallic body was ruled out with the help of metal detector. While recording the ruminal motility by pressed fist on left paralumbar fossa some hard entangled materials were palpated inside the rumen. On per rectal examination, distended and heavily impacted rumen and constipated feces in rectum were found. On haematological study, the value of haemoglobin (Hb) was 11.6 g/dl with elevated packed cell volume (PCV) of 42%. Blood smear examination revealed severe neutrophilia (shift to left) and absence of haemoproteozoa. No parasitic ova were detected in faecal sample examination. Considering the prolonged history of recurrent tympany,
outside grazing and presence of impacted material as felt on palpation of left paralumbar fossa, it was decided to perform explorative laparotomy to find out the pathogenesis.

**Treatment**

The animal was restrained on a soft straw bed in left lateral recumbency. The left flank was prepared aseptically for surgery. Operation was performed under local infiltration with 2% lignocain HCL solution. Skin incision was made on antero-posterior-ventro-oblique left lateral laparotomy site (Fig.1). Individual muscles were separated as per grid technique and peritoneum was incised to expose the rumen. Then a portion of dorsolateral wall of rumen was exteriorised though the window opening of three layered polythene drape. A small incision at the exposed ruminal wall brought in view the inside contents. The incised edge of ruminal wall was fixed to a locally prepared ruminotomy ring to prevent slipping of the edge and to keep the incision open. The interior of the rumen was found to have impacted foreign material consisting of polythene bags, cloths, leather, stones and small metal nails in around 30 kg. These were carefully removed (Fig.2,3). Four boli each of rumenotoric (Rumentas\(^a\)) and probiotics (Ecotas\(^b\)) were placed in the rumen before closing. The rumen wall was closed by cushing pattern using no-2 chromic catgut. The abdominal cavity was checked for presence of any ruminal content and washed with normal physiological saline along with metrogyl. The laparotomy incision was closed as per the standard technique (Fig.4). Post-operatively Dextrose Normal Saline 10 liters I/V, Strepto-penicillin 5 gm I/M for 7 days, Melonex\(^a\) 15 ml I/M for 4 days and Tribivet\(^a\) 10 ml I/M for 3 days and Floratone\(^b\) 4 boli, Rumentas\(^a\) 2 boli orally bid for 7 days were continued. Sutures were removed on 10\(^{th}\) post-operative day. The animal recovered uneventfully and gained back her normal appetite. Biopsy of ruminal wall at place of separation of papillae showed the separation of epithelial layer was at the connective tissue core.

**Discussion**

The habit of eating non-edible foreign materials may be due to mineral deficiency or due to easy access to vegetable wastes in polythene bags (Khose et al., 2010). It is very common in developing countries possibly because of un-organized small-scale farming and poor standard in animal management and feeding (Misk et al., 1984). Owners do not provide sufficient feed as well as quality feed. This deficiency forces the animal to pick up outside roughages. Rectal palpation is one of the most reliable methods of diagnosing rumen impaction (Grymer and Ames, 1981). In the haematological profile rise in PCV value may be due to contraction of spleen resulting from increased levels of circulating catecholamines (Jain, 1986). The left flank laparotomy incision site was chosen for the facility with which rumen is handled and easy approach to all segments of gastrointestinal tract. Narrow opening in drape prevented seepage of ruminal content into the abdomen. Loss of ruminal papillae might have resulted from prolonged presence of foreign materials. Post-operatively rumenotorics, balanced ration and sufficient drinking water were continued to facilitate regaining of normal microflora, ruminal papilla and appetite. Ruminal damage as
observed in this case can be prevented by providing balanced ration and bringing awareness in the people regarding proper disposal of polythene bags.

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References


