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Surgical Management of Ruminal Impaction in HF Cattle in Field Condition

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ABSTRACT

A nine years old cross-breed Holstein Friesian dairy cow weighing approx. 300 kg with medium body condition was examined. The cow was suffering from frequent abdominal distention, grinding of teeth, reduced feed intake, progressive weight loss. The detailed clinical examination revealed normal rectal temperature, doughy rumen, reduced appetite and weakness. The case was confirmed as ruminal impaction. The case was successfully treated by exploratory rumenotomy along with appropriate medicinal treatment.

Key words: Doughy rumen, Exploratory rumenotomy, Ruminal impaction.

Ruminal impaction is a serious ruminal disorder and it results from the accumulation of the indigestible materials in the rumen which interferes with the flow of ingesta leading to distension of the rumen and passing of scanty or no feces (Abdullahi *et al*., 1984).

Clinical signs are exhibited when the ingested materials interfere with the normal functioning of rumen depression, partial or complete anorexia, recurrent bloat, reduced milk yield, weight loss, suspended rumination, ruminal impaction and increased susceptibility to other disease conditions are the most common symptoms observed in the affected animals (Dodia *et al.,* 2014 and Vanitha *et al*., 2010).

As clinical signs in animals suffering from ruminal impaction due to undigested materials are nonspecific, diagnosis of ruminal impaction is a real challenge to clinicians. Recurrent bloat, persistent ruminal impaction and history of grazing the animals along roadsides on garbage raise the suspicion of ruminal impaction (Dodia *et al.,* 2014; Vanitha *et al.,* 2010).

Conservative approaches such as use of anti-bloat agents or purgatives are not successful in the management of plastic foreign body syndrome. Therefore, until today all physicians are dependent on rumenotomy for both diagnostic and therapeutic purposes of ruminal impaction (Tyagi and Singh, 2004). The study of Haematological and biochemical parameters following administration of local anaesthetic may heplful to evaluate the haemoglobin status of cow.

History and case details

A nine years old cross-breed Holstein Friesian dairy cow weighing 300 kg with medium body condition was examined in field. The cow was suffering from anorexia, frequent abdominal distention, grinding of teeth and progressive loss of condition. The detailed clinical examination revealed ruminal atony, doughy consistency of rumen, normal rectal temperature, dullness, depression and pale mucus membrane. On the basis of above findings the case was confirmed ruminal impaction.

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Treatment

Initially case was treated with purgatives and intravenous fluids but satisfactory response was not observed. Then the case was successfully handled surgically by exploratory rumenotomy.

Surgical procedure

The surgical site was prepared aseptically using water, soap, savlon and 5% betadine solution. Then Para-vertebral nerve block was given by using 2% lignocaine hydrochloride. Cow was stabilized with Ringer's lactate @ 10 ml/kg body wt IV. A longitudinal10 inches skin incision parallel to last rib, below the transverse process of the lumbar was made. The fascia, abdominal muscles and peritoneum were also incised following the skin incision. The rumen was fixed by Nylon size no. 2 with the skin around the incision andafter assured no leakage from rumen to peritoneumthemetallic, non-metallic non-penetrating foreign bodies were removed manually by hand approach through exploration. After removing the impacted material of the rumen, it was closed by of cushing and lambert suture. Then the peritoneum and

muscles were closed with polygalactin-910 size no. 2 by continuous locking suture pattern. The skin was sutured with nylon suture using a cross mattress suture. The complete surgical procedure has been shown below in Fig 1-8. The cow was completely recovered after 20 days of follow-up observation.

Post operative management

After successful operation the cow was kept on controlled diet of small amount of green fodder along with straw was offered to cow for next 5 days. Postoperative care was done using Inj. Dicrysticin DS @ 2.5 gm I/M as total dose,Inj. Meloxicam @ 0.5 mg/kg body wt.I/M, Inj. Belamyl @ 10 ml I/M, Inj. R.L. @ 2.5 liters I/V and Inj D.N.S. @ 2.5 Liters IV. The medication was done once a day for 7 consecutive days along with antiseptic dressing.

Oral medications

Probiotic boli @2 boli per day with 50 gm soda bi carb was also given for 5 days to stimulate growth of ruminal microflora and to balance the acidic pH of the rumen.

Fig 1: Preparation of surgical site and Para vertebral block.

Fig 2: Incision at site.

Fig 3: Ruminal exploration.

In the present study, case was diagnosed by careful physical examination. Doughy consistency of rumen, recurrent bloat with passing scanty feces is highly suggestive of ruminal impaction. The surgery of ruminant animals due to eating undigested waste and things is a matter of attraction almost all over the world. This is the main reason for the decrease in animal production, due to which there is economic loss, similar results were observed by Kebede *et al.* (2020).

Fig 4: Fixation of rumen with stay suture.

Fig 5: Removal of ruminal content.

Fig 6: Foreign bodies found in rumen.

Fig 7: Closing the peritoneum, muscle and skin.

Fig 8: Post operational photographs showing successful recovery of the cow.

In cases of presence of plastic and other extraneous things in the rumen of cow the symptoms such as loss of weight, weakness, pale mucous membranes, reduced quantity of dung, anorexia, dry coat and enlarged rumen were similar to the results of other scientists on diagnosis (Bakhiet, 2008).

Rumenotomy is the emergency way to remove metal and plastic foreign bodies from the rumen and reticulum. Delayed wound healing, hemorrhage, fever, edema, wound infection (peritonitis), death, intestinal obstruction/adhesion and physical swelling are commonly observed postoperative complications. Emphasis should be placed on post-operative care through administration of antibiotics and analgesics to reduce the risk of post-operative complications (Antenehand Ramaswamy, 2015).

This was inconsistent with the current case report in terms of case handling, treatment and post-operative care. Surgical removal of foreign bodies improved the condition of the body, the consumption of the cow, productivity and well-being. This finding agreed with an experimental study conducted by Ghurashi *et al.* (2009), which concluded that surgical removal of the foreign body improved animal health by increasing feed intake, weight and productivity (Fubini and Ducharme, 2016).

This clinical manifestation can be used to diagnose ruminal impaction in field condition. Many times the animals do not respond to conservative therapy. Exploratory rumenotomy can be performed in such case to get successful recovery.

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