

SUCCESSFUL SURGICAL RETRIEVAL OF A RETICULAR FOREIGN BODY (METALLIC MATHEMATICAL COMPASS) IN A NON-DESCRIPT COW

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ABSTRACT

A four-year-old female non-descript cow was presented with a history of accidental ingestion of a mathematical compass. All the vital parameters were within the physiological range. Radiographic examination confirmed the presence of a radiopaque foreign body inside the reticulum. Emergency laparo-rumenotomy was performed under proximal paravertebral nerve block and the compass was removed, followed by closure of the laparotomy incisions as per standard operating procedures. Post-operative medications and fluid therapy were administered for five days. The skin sutures were removed on the 10th postoperative day, and the animal showed a fruitful recovery.

KEYWORDS: Foreign body, mathematical compass, laparo-rumenotomy, paravertebral nerve block

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INTRODUCTION

Ingestion and lodgement of foreign bodies in the reticulum is common in bovines due to their indiscriminate feeding behaviour (Reddy *et al.*, 2014). Accidental ingestion of metallic foreign objects, such as nails,

wires and pins, is noticed in cattle when they graze in areas close to human mechanical activities and in those objects that have been left carelessly near their feeding areas and fallen into the feed (Desiye and Mersha, 2012). Lack of grazing land, inadequate nutrition and quantity of feeding predispose the animal to ingest foreign bodies. The symptoms noticed vary with the location and duration of the foreign body that has been present and the degree of obstruction and trauma produced. The early clinical signs include anorexia, tympany, rumino-reticular atony and drop in milk yield (Chanie and

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Tesfaye, 2012). Radiographic examination of the reticulum provides useful diagnosis for identification of metallic foreign bodies. Delay in diagnosis of a traumatic foreign body results in loss of production, decreased reproductive performance and high mortality rate (Ramaswamy and Sharma, 2011).

CASE HISTORY AND DIAGNOSIS

A four-year-old female non-descript cow was presented to the Veterinary Clinical Complex, VC&RI, Orathanadu, with the history of accidental ingestion of a metallic mathematical compass three days before presentation. The owner reported that after opening the feed bag using a mathematical compass and moving on to feed other cows, he unintentionally left it next to the cow. When he got back, he noticed the compass was missing and looked everywhere for it, but he could not find it. Finally, he brought the cow to the clinical complex after suspecting accidental ingestion, due to lack of appetite and dullness since the previous evening. Radiographic examination revealed a radiopaque foreign body resembling a compass in the lateral view of the reticular region (Fig 1). The physiological and haematological parameters were within the normal range, whereas slightly elevated values were noticed in biochemical parameters. The case was diagnosed as traumatic reticulitis and opted for emergency laparo-rumenotomy.

TREATMENT AND DISCUSSION

The left flank was shaved and prepared aseptically for the surgery. Under proximal paravertebral nerve block with

2% lignocaine hydrochloride, laparo-rumenotomy was performed and the compass was removed safely along with a plastobezoar (Fig 2). Rumen filling agents and probiotic boluses were placed inside the rumen, followed by closure of the rumen with cushioning followed by Lambert suture pattern using catgut size 2. The peritoneum and muscle layers were closed with Ford interlocking pattern using catgut size 2 and the skin was apposed with cross mattress pattern using monofilament polyamide size 2 (Fig 3). Post-operatively, streptopenicillin, flunixin meglumine and chlorpheniramine maleate were administered intramuscularly for five days along with intravenous fluid therapy. Gradual introduction of feed and water was carried out on the 3rd post-operative day and the skin sutures were removed on 10th post-operative day. The animal returned to normal feeding habit and showed an uneventful recovery (Fig 4).

Traumatic reticuloperitonitis and traumatic pericarditis are the most serious problems encountered in dairy cattle due to accidental ingestion of metallic foreign bodies, which leads to serious health issues such as gut impaction, internal bleeding, ruminitis and acidosis (Purohit *et al.*, 2015). The above conditions are more common in developing countries where the cattle owners and farmers lack awareness of livestock husbandry (Fesseha, 2020). The foreign body syndrome can be reduced or eliminated by proper disposal of metallic objects such as wires and nails, keeping them away from the cattle barn, and restricting the cattle from grazing in garbage and near new construction sites (Reddy *et al.*, 2014).

Wither pinch test, pole test, radiography, electronic metal detection, and ultrasonography are the diagnostic techniques for the aforementioned problems. Removal of a foreign body through rumenotomy is the widely followed procedure and early diagnosis provides better recovery and increases the survival rate. In this case, the animal was fed solely wheat bran since there was a shortage of forage throughout the summer. Out of hunger, they ingested the compass which fell into the feed utensil, as they did not fully masticate the feed before swallowing. Early diagnosis, surgical

intervention, and successful recovery in this case were made possible by the owner's prompt reporting within three days of the incident.

CONCLUSION

The accidentally ingested mathematical compass along with a plastobezoar was successfully removed by laparo-rumenotomy under left proximal paravertebral nerve block and the animal made an uneventful recovery.

Table.1. Pre and post-operative haematobiochemical parameters

Parameters	Pre-operative	Post-operative
RBC (*106/cmm)	8.25	7.39
WBC (*103 /cmm)	9.83	11.22
PCV (%)	36.13	30.78
Hb (g/dL)	12.75	10.86
BUN (mg/dL)	54	42
Creatinine (mg/dL)	2.92	2.17
Total Protein (g/dL)	6.98	6.27



Fig.1. Radiopaque foreign body in the reticulum



Fig.2. Retrieved compass and plastobezoar



Fig.3. Skin sutured with cross-mattress pattern

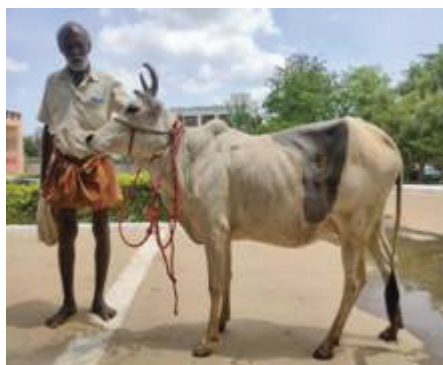


Fig.4. After recovery

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