



E-ISSN: 2320-7078

P-ISSN: 2349-6800

www.entomoljournal.com

JEZS 2020; 8(3): 717-719

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Received: 22-03-2020

Accepted: 24-04-2020

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Reticulo-omasal orifice obstruction in two buffaloes

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Abstract

Two female adult buffaloes were presented with a history of anorexia, suspended rumination, ruminal tympany, complete cessation of defecation. Clinical examination revealed respiratory distress due to distension of rumen and per rectal examination revealed collapsed intestines and empty rectum. Emergency exploratory laparo-rumenotomy was performed through left paralumbar fossa and ruminal exploration revealed that the reticulo-omasal orifice was obstructed with round shaped hard mass i.e. phytobezoar in one case and tennis ball in the other. The rumen incision was closed as per the standard technique. The laparotomy incision and skin incision was closed in routine manner. In the present study, timely diagnosis and their surgical management saved the life of the animal. The present communication reports complications caused due to mechanical obstruction of the reticulo-omasal orifice leading to reticulitis, severe constipation and cessation of defaecation in two female buffaloes.

Keywords: Buffalo, obstruction, reticulo-omasal

Introduction

The reticulo-omasal orifice, a potentially narrow sphincter, situated in the lesser curvature of the reticulum to the right of the median plane, separates the more cranial divisions of the ruminant stomach, the reticulum and rumen from the omasum. The considerable passage of digesta through this orifice is thought to depend on the development of pressure gradients between the reticulum and omasum, during reticular contractions or following omasal canal contractions at times when the orifice is open (Stevens *et al.*, 1960; Bost, 1970) ^[11, 3]. Flow of digesta into the omasum is marked during the second phase of the regularly recurring contractions of the reticulum (Phillipson, 1966) ^[8]. At this time there is an opening of the reticulo-omasal orifice both in the ox (Balch *et al.*, 1951; Stevens *et al.*, 1960) ^[2, 11] and in the sheep (Laplace, 1970) ^[6]. The regular association of opening of the orifice and of reticular contractions could be expected to involve the vagal innervation of both of these structures. The vagus nerves are essential for the occurrence of the biphasic contractions of the reticulum and cyclical contractions of the rumen (Duncan, 1953) ^[4] which are generated as vago-vagal reflex responses (Titchen, 1968) ^[12]. Some conditions resulting in mechanical obstruction of the reticulo-omasal orifice (eg, papillomas, ingested placenta and foreign body) can also result in vagal indigestion if ruminoreticular distention is present and the condition is subacute to chronic. Phytobezoars of varied origin have been reported in bullocks, small ruminants and wild animals, and these could be fatal. But reports on phytobezoars in buffaloes are few. Phytobezoar are formed due to ingestion of large quantities of rough grass fibres over a long period with the aid of gastro-intestinal tract motility (Hofmayer, 1976; Jaykumar *et al.*, 2007) ^[5]. This paper records a case of mechanical obstruction of reticulo-omasal orifice and its surgical management in two female buffaloes.

Case history and clinical observations

Two female buffaloes were presented with a history of anorexia, suspended rumination, ruminal tympany, complete cessation of defecation and not responding to the medicinal treatment. Physiological parameters viz., rectal temperature, respiratory rate and heart rate were normal. Haemato-biochemical parameters were also within the normal limits, however, mild reduction in haemoglobin and PCV was observed in both the animals. Clinical examination revealed respiratory distress due to distension of rumen and per rectal examination revealed collapsed intestines and empty rectum.

Treatment and Discussion

Emergency exploratory laparo-rumenotomy was performed through left paralumbar fossa under paravertebral nerve block using 2% lignocaine hydrochloride. The rumen was fully distended with impacted contents. Rumen was emptied to 2/3rd of its capacity. Ruminal exploration revealed that the reticulo-omasal orifice was obstructed with round shaped hard mass i.e. phytobezoars (Fig 1) in one case and rubber ball (Fig 2) in the other. However, liquid contents were present in the omasum and abomasum. Rumentorics and luxatives were kept into the rumen before closure. The rumen incision was closed as per the standard technique using chromic catgut no. 3. Right side of the abdominal cavity was explored through the same laparotomy incision, which revealed the intestinal obstruction due to faecoliths. These faecoliths were crushed manually intraluminally to maintain the potency of intestine by injecting 10-20 ml of liquid paraffin. The laparotomy incision was closed as per the standard technique using chromic catgut no. 3. Skin incision was closed in routine manner using non absorbable suture material. Post-operatively, both the animals were maintained on intravenous fluids, Inj. Ceftriaxon-sulbactam 4.5 gm IM, Inj. Ketoprofen @ 15ml IM, Inj. Avil @ 10 ml IM, neostigmine @ 8mg TID SC for five consecutive days and Intacal @ 10 ml IM on alternative days for one week. Post-operatively liquid diet along with Rumentorics was offered to both animals for two days and solid food from third day onwards. One animal passed faeces on next day while other animal on 3rd day post-surgery. Both the animals recovered uneventfully and started ruminating from day fifth onwards.

Plant fibers and polythenes ingested through the feed might have acted as a nucleus for phytobezoar formation around which salts and mucous secretions were deposited. The size, shape, composition and formation of phytobezoars in the present case are in agreement to those reported by Sharma and

Chauhan (1997)^[10] and Bath *et al.* (1992)^[11]. Gastro-intestinal tract obstructions occur in ruminants when the animals are fed with poor quality roughage (Radostits *et al.*, 1994)^[9], which was also confirmed in the present case with the history of feeding habit obtained from the owner. Severe tympany, ruminal distention moderate to severe disturbance in general behaviour and attitude, marked gastro-intestinal activity and cessation of defecation were the symptoms observed in the present case which concurred the findings of Nayak and Babu (1996)^[7] in a cross bred cow. Veeraiah *et al.* (2008)^[14] suggested that the phytobezoar was sometimes fatal as it has obstructed the reticuloomasal orifice. However, in the present report the case was diagnosed properly and its surgical management was carried out in time to save the life of the animal.



Fig 1: Phytobezoar recovered from Reticulo-omasal orifice



Fig 2: Rubber ball recovered from Reticulo-omasal orifice

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