

Surgical management of reticulo-omasal orifice obstruction along with acute tympany in cattle

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Abstract:

A clinical case of acute tympany in cattle reported to Department of Veterinary Surgery, Bihar Veterinary College Patna. History revealed animal has chronic tympany with progressive reduction in appetite from two months. Initially gas was removed with trocar and cannula and animal treated with anti-bloat agent intra-rumenally and orally. Tympany was again developed after 20 minutes, so decide rumenotomy to save the life of animal. By rumenotomy impacted material from the rumen and phytobezoars from the reticulo-omasal orifice were removed. Reticulum was carefully examined for presence of any foreign particle. Animal was start partial feeding from next day. Meanwhile blood sample was found positive for anaplasma species. So animal was again treated with inj. Oxytetracycline 10 mg/kg body weight intravenously with 5 days along with other supportive therapy. Animal was fully recovered after 15 days.

Introduction

Tympany is over distension of rumen and reticulum with gas of fermentation. Acute tympany occurs when cattle consume feeds that are readily digestible such as finely ground grains, lush legume and cereal grain forage. Once consumed these feeds provide readily available nutrients that are immediately utilized by ruminal microbes leading to a large amount of gas in rumen. In severe bloat, there is clear distension of both sides of the abdomen. Animals breathe through mouth with protrusion of the tongue. Animal shows uncomfoting, restless, sometime staggering and skin over the left flank is very tense. Animal may collapse and dies quickly. Death is caused by suffocation, when the distended rumen pushes the diaphragm and prevents inhalation (Aiello and Moses, 2016; Radostits et al., 2010). Rumenotomy is a routine procedure for many diseases in cattle such as traumatic reticuloperitonitis, acute and recurrent bloat, ingestion of foreign bodies that are obstructing the reticulo-omasal orifice, foreign bodies lodged in the distal oesophagus, and carbohydrate engorgement (Ducharme and Fubini, 2004). Primary bloat generally occurs with formation of stable foam, when animal consume large amount certain legume and concentrate.

Secondary bloat and recurrent tympany is occurred due to obstruction to eructation process or due to blockage of rumeno-reticular outflow like diaphragmatic hernia, TRP, trichobezoars, phytobezoars or plastic impaction (Singh et al., 2006). Depending on the extent of obstruction to rumeno-reticular outflow bloat varies from recurrent bloat to life threatening severe bloat. It requires emergency trocarization. Diagnosis of this condition could be possible only by exploratory rumentomy. Present study reports surgical management of acute tympany with obstruction of reticulo-omasal orifice.

Case details

A clinical case of acute tympany in cattle reported to Department of Veterinary Surgery, Bihar Veterinary College Patna. Few hours earlier animal treated by parentally enrofloxacin, antihistaminic and orally with anti-bloat agent, buffering agent, sodium-bicarbonate and probiotic at division of medicine. But animal did not show any response and discomfortness gradually increases with time. History revealed animal has chronic tympany from two month and progressive decrease in appetite. Owner previous day offer grain, after that acute tympany developed. Careful clinical examination revealed that rumen impacted and left flank was much tensed. Physical parameter like temperature, respiration and heart rate was 99.5⁰, 36/minute and 82/minute respectively. Animal was breathing through mouth and slight protrusion of tongue. Animal was also uncomfortable and restless. Initially gas was removed with trocar and cannula needle and treated with anti-bloat agent intra-rumenally and orally. Tympany was again developed after 20 minutes, so decided rumenotomy to save the life of animal. Now left flank

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of animal was prepared for aseptic surgery. Regional anaesthesia of left flank is achieved with paravertebral nerve block with 2% lignocaine hydrochloride. Skin incision made 4 cm caudal and parallel to last rib. The abdominal muscles and peritoneum was incised corresponding to the skin incision. Abdominal cavity is packed with shroud to prevent contamination. Rumen was very tense, so initially a small incision is given to evacuate gas from the rumen. Now a fold of rumen is exteriorized and a nearly 6-inch-long incision made between them and impacted materials removed from the rumen. Reticulum carefully examine for presence of any foreign particle. A large phytobezoars found blocking reticulo-omasal orifice was also removed and

rumen wall closed with lamberts suture followed by sodium and Sulbactam sodium at the dose rate of 10 mg/kg body weight intramuscularly for 7 days. Cushing with absorbable suture material chromic catgut no.1-0. Muscle and skin were sutured as per the standard technique. Animal post operatively prescribed the broad-spectrum antibiotic amoxicillin body weight I/M for 1st day and 0.1 mg/kg for next three days. Animal was also treated with fluid therapy, neuro-vitamin 10 ml I/M and pre and probiotic agent for three days.



Fig. 1. Clinical case of acute tympany



Fig. 2. Preparation of left flank



Fig. 3. Skin incision



Fig. 4. Packing of abdominal cavity



Fig. 5. Removal of impacted material and phytobezoar



Fig. 6. Normal feeding of animal post-operatively

Animal was start feeding from next day. Owner reported on 7th days that animal is taking feed but comparatively lower amount in respect to healthy condition. Animal was again physically examined. All physical parameter was normal except subnormal temperature. Anaemia was also observed. Owner advised for complete blood count and haemoprotezoa. Blood sample was found positive for *Anaplasma* spp. So animal was again treated with inj. Oxytetracycline 10 mg/kg body weight intravenously with 5 days along with other supportive therapy. Suture was removed on 12th days after healing of incised wound. Animal was fully recovered after 15 days. Amoxicillin is amino penicillin has broad spectrum activity against micro-organism. Sulbactam has beta lactamase inhibitory properties. Amoxicillin is inactivated by beta lactamase, so it is usually given in combination with sulbactam or clavulanic acid. Meloxicam and paracetamol combination was found to be effective in reducing inflammatory change and relieved the animals from pain and pyrexia (Kumar et al., 2013).

Acute bloat is associated with high-level grain diets in animals' feedings concentrates. Concentrate feeding increases the viscosity of the ruminal fluid, because of the production of insoluble slime by certain species of bacteria. These bacteria proliferate in large numbers on a high-concentrated diet specially carbohydrates in the rumen of animals (Majak et al., 2005). Majak et al. (2003) reported that most important cause of bloat include an inheritance for tympany, specific proteins in diet, the quantity and quality of roughage

that animal feed. Types and population of rumen microbial agent is also responsible for bloat. Enlargement of the mediastinal lymph nodes compress the oesophagus or interfere with the function of the vagus nerves after respiratory infection and interfere normal eruption of gases. Saliva contains mucin, which act as an antifoaming agent and suppress the formation of rumen foam. Feeding of high concentrate and less roughage lowered the formation of saliva (Church, 1988).

Gastro-intestinal tract obstructions or reticulo-omasal orifice obstruction occurred in ruminants when the animals are fed with poor quality roughage (Radostits et al., 1994) as observed in present clinical case. Nayak and Babu (1996) observed a similar clinical finding in a cross bred cow. Brown and Gotz (1993) reported improvement in appetite in 2-5 days after removal of phytobezoars in 14 cattle. In accordance to present cases, Veeraiah et al. (2008) also reported that the phytobezoar may be fatal; if completely obstructed the reticulo-omasal orifice and required immediate corrective measure.

Rumenotomy is only effective method of treatment for reticulo-omasal orifice obstruction along with acute bloat, if animals not showing response with medicinal treatment. Clean environment and balanced rations would substantially reduce the occurrence of tympany and reticulo-omasal orifice obstruction.

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