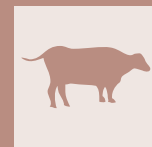


# Impaction of the oesophagus in bovine and its surgical management in field condition - A report of 4 cases



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## SUMMARY

The main aim of this article was to discuss about the clinical signs and diagnosis of oesophageal obstruction in field conditions. In this case report it was observed animals exhibited clinical signs like protrusion of the tongue, ptialism, free gas bloat, drooling of the saliva, distension of the paralumbar fossa. Diagnosis was mainly based on the history and clinical signs. After ruling out rabies attempts were made to remove the obstruction by gentle massage and using probing, but it failed. Surgical intervention was done using sedation or local anaesthesia. Oesophagotomy was done to relieve the obstruction. The oesophagus was sutured in two layers followed by muscle and skin. Wound dehiscence was the only complication noted. All animals made uneventful recovery.

## KEY WORDS

Foreign body, choke, oesophagotomy, wound dehiscence.

## INTRODUCTION

Only a few diseases have been documented that cause oesophageal disorders in the bovine, the most common being foreign body obstruction. Anatomically, oesophagus comprises four layers that include the outer adventitial layer (tunica adventitia), muscular layers (tunica muscularis), submucosa (tela submucosa), and mucosal layer (tunica mucosa). The term choke (intraluminal obstruction) is generally used in references to an oesophageal impaction (obstruction) that may be partial or complete. It usually occurs when foreign objects, large feedstuff, medicated boluses, trichobezoars, leather, coconut, cloth, palm kernel and unripened mango or oesophageal granuloma lodge in the lumen of the oesophagus<sup>1-6</sup>. Objects lodged in the cervical oesophagus may be located via palpation. The common sites of obstruction in bovines include pharynx, cervical oesophagus, thoracic inlet, the base of heart and cardia<sup>7</sup>. It is an emergency surgical condition causing severe gaseous distention of the rumen resulting from the inability of the cow to eructate and release gas, which may be life-threatening if not treated timely<sup>8</sup>. The present paper reports surgical management of choke in two cows and 2 buffaloes under field conditions.

## HISTORY AND CLINICAL SIGNS

In the first case, a five-year-old female crossbred Holstein-Friesian that had swallowed a beetroot reported at farmer's premises, with signs of drooling saliva with extended head and

neck, free gas bloat and hard swelling in the cervical region. Attempts of local veterinarian failed to relieve choke by aboral retrieval by one hand and retrograde manipulation of choked material by another hand or pushing into rumen using probang under sedation. In the second case, a six year old female HF crossbred was showing frequent chewing movement with protrusion of the tongue, restlessness, stoppage of rumination and ptialism after having feed from feed trough as reported by the owner on telephonic conversation. Physical examination revealed distension of left side paralumbar fossa and swelling on the neck region.

In the 3rd case, female pluriparous buffalo of 6-7 years old presented to the nearby veterinary dispensary with the history of difficulty in swallowing, cud dropping, increased salivation with frequent coughing and retching. On palpation, a movable mass observed in the neck region next to trachea. A stomach tube was passed to identify the site of obstruction and to relieve the choke if any.

In the 4th case, a female buffalo heifer had a history of anorexia, depression and dysphagia along with the hard swelling on the mid-cervical region and dehydration with sunken eyeballs. Earlier it was symptomatically treated by the local paravet. The clinical examination revealed a hard immovable mass on the mid-cervical oesophagus having fibrous consistency.

In all the four cases, rectal temperature, respiratory rate and pulse rates were within normal physiological range. After ruling out rabies, an oral examination performed to evaluate the pharynx and dental abnormalities. Manual efforts to dislodge the obstruction by gentle massage over the site and using probang failed in all presented cases. Based on history, clinical examination, palpation and familiarity of the cases to the author, it was decided to perform the surgical intervention.

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## SURGICAL MANAGEMENT

After confirmation of obstruction in the oesophagus and with owner's prior verbal consent, all animals were restrained in right lateral recumbency. 2% lignocaine hydrochloride (40 ml) was infiltrated around the swelling to achieve local analgesia in 2 cows and 2 buffaloes were sedated by using xylazine hydrochloride 0.01 mg/kg b.wt., and local infiltration of 2% lignocaine done around the surgical site. The site was prepared for aseptic surgery. An 8 to 10 cm long longitudinal incision was made along the dorsal border of the jugular furrow between the sternocephalicus muscle and trachea, near to the level of obstruction. Then, 4 to 6 cm incision was made over the muscular coat of the oesophagus directly over the foreign body, on incision oesophagus separated into elastic inner layer (mucosa and submucosa) and the outer muscular layers and adventitia (Figure 1). After getting into lumen foreign bodies, beetroot, onion, rope and tarpaulin removed from case 1, 2, 3 and 4 respectively (Figure 2).

After washing the lumen with metronidazole solution, the mucosal layer was sutured with simple interrupted sutures intraluminal knots and submucosa and muscularis were opposed with simple continuous pattern using chromic catgut. The muscles and skin were closed in a routine manner by using non-absorbable suture.

## POSTOPERATIVE CARE

Postoperatively, tincture benzoin gauze was applied over the surgical wound and alternative day dressing done till complete healing. All animals were administered within ceftriaxone (25 mg/kg, IM) and meloxicam (5 mg/ml) and intravenous fluid (0.9% NS and RL) for 5 days. After that, a soft diet was advised and then roughages were introduced gradually from day 7th post-operatively. Sutures were removed after 10th day of surgery. Two cows and one buffalo had an uneventful recovery, one buffalo showed wound dehiscence, restoration to normal feeding was observed after 10 and 15 days of post-surgery respectively.



**Figure 1** - Foreign body within oesophagus (Case 1, Beetroot).



**Figure 2** - Surgical removed foreign bodies A) Case 3, B) Case 4.

## COMPLICATIONS

One buffalo showed wound dehiscence at the surgical site (Figure 3). All animals were observed for esophageal stricture, no animals showed clinical signs of the same over the 15 months (Figure 4).

## DISCUSSION

Bovines are frequently affected by esophageal obstruction than other animals and this is attributable to their greedy nature and peculiar indiscriminate feeding habits<sup>9,15</sup>. Intraluminal obstruction of the oesophagus in ruminants is popularly referred to as choke, which may occur due to attempts to swallow vegetables, whole fruits, or foreign objects<sup>6,10</sup>. We found intraluminal blockade of the oesophagus by onion, beetroot (case 1 and 2) and rope (case 3), tarpaulin (case 4). Impaction of the oesophagus is a clinical emergency that needs prompt intervention because it prohibits eructation of fermentative gases to escape the rumen reticulum, and free-gas bloat develops. Radiography may be a useful tool to identify atypical cases of esophageal obstruction, but in field condition, it is difficult to do the same. So clinical signs and physical examinations are vital for diagnosis. Acute severe bloat and ptalism are the clas-





**Figure 3** - Wound dehiscence was observed in a buffalo (Case 4).



**Figure 4** - Recovered animal after 15 months of surgery (Case 2).

sical signs of complete esophageal obstruction in ruminants, but other less specific clinical signs occur with varying frequency<sup>9,15</sup>. Various conservative treatments have been described for the management of esophageal foreign bodies in ruminants. The objective is either to advance the object aborally so that it passes into the rumen or to manipulate the foreign body so that it can be extracted orally. Trocarization or stomach tube passing must be done to relieve bloat, before attempting to the removal of the causative agent<sup>9</sup>. Conservative trials are percutaneous massage, manual retrieval, regional administration of lignocaine (reduce the muscle contraction and facilitates the removal of foreign bodies)<sup>11</sup>. In the present study, such manipulative trials were failed and all suggestions were directed to correct the cases through surgical intervention. Although esophagotomy is well-established technique, Ruben (1997) reported the risk of postoperative complications like esophagotomy incisional dehiscence and fistula formation. According to Meagher and Mayhew, 1978, for successful outcomes, the timely intervention of choke cases by manipulative /surgically and post-operative care are the vitals. The preservation of blood supply, aseptic technique, apposition of tissues without tension is also essential for good results. In the present article, 3 cases (2 cows and 1 buffalo) were treated within 8 to 16 hours and 1 case after 36 hrs from the onset of clinical signs. Late presentation of case attributable to free gas bloat and inflammation, necrosis and rupture of oesophagus by pressure created by obstructing material<sup>14</sup>.

The serosal covering is needed for forming a fibrin seal, lack of serosal layer and constant movement during swallowing may be responsible for wound dehiscence in one buffalo in our case report. More loss of saliva during choke leads dehydration and metabolic acidosis, which should be corrected pre and post-operatively by fluid therapy<sup>15</sup>.

## CONCLUSION

It can be concluded that based on the history and clinical signs the oesophageal obstruction can be diagnosed in field condition. The timely intervention, surgical management and proper post operative care can give fruitful results.

## Conflict of Interest

Authors declare that they have no conflict of interest.

## Authors Contribution

All the authors have contributed in terms of giving their technical knowledge to frame the article.

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