

OSEOPHAGEAL OBSTRUCTION AND ITS SURGICAL MANAGEMENT
IN 4 BUFFALOES- A CASE STUDY**Jagan Mohan Reddy Kankanalapally**

Received: 28 March 2023

Accepted: 19 March 2024

ABSTRACT

The present clinical study reports the surgical management of oesophageal obstruction in 4 buffaloes which were presented to the department of surgery and radiology, from 2018 to 2022 with the symptoms of salivation, intermittent regurgitation and inability of the animal to swallow feed and water. Diagnosis of oesophageal obstruction was by physical examination and passage of probang and further it was confirmed with help of radiography. Surgery revealed that the cause of obstruction was a rexine / leather material respectively. After the surgical repair, the animals recovered without any complications.

Keywords: *Bubalus bubalis*, buffaloes, oesophageal obstruction, choke, cervical oesophagotomy

INTRODUCTION

Oesophagus is divided into cervical, thoracic and a very small abdominal part. The oesophageal wall is thicker in the cervical part as compared to the thoracic part. In cervical region, its lumen narrows down at the junction of

middle and distal third but again widens slowly. Due to the narrowing down at the junction of middle and distal third cervical oesophagus, the intraluminal blockade of the oesophagus known as choke occurs due to vegetables, fruits, phytobezoars, trichobezoars and various foreign bodies Jit Singh *et al.* (2020). The reported causes of oesophageal obstruction in buffaloes include rexin Shivaprakash *et al.* (1998), leather Salunke *et al.* (2003) and palm kernel Hari Krishna *et al.* (2011); by a small cucumber in a non-descript cow Dhage and Ingle (2013) and by citrus fruit in bullock Kate *et al.* (2017). The present paper records the presence of foreign material (iron wire) and vegetable (small cucumber) in the middle of the cervical oesophagus in bull and cow.

HISTORY AND DIAGNOSIS

Four buffaloes presented with history of profuse salivation, dyspnoea, intermittent regurgitation and inability of the animal to swallow feed and water and with presence of cough. On physical examination of cervical oesophagus, a hard swelling was noticed at the mid cervical oesophageal region, passage of probing helped in

determining the location of obstruction (Figure 1). Radiography confirmed the seat of obstruction with presence of radio-opaque foreign body (Figure 2). Attempts to retrieve the foreign body as well as to pass it into the rumen were failed and hence it was decided to perform emergency oesophagotomy in all buffaloes.

TREATMENT

The left ventro lateral aspect of the cervical region was prepared for aseptic surgery. The animal was restrained in right lateral recumbency after sedation with xylazine hydrochloride 0.01 mg/kg body weight intramuscularly. A longitudinal incision was made on the skin of the cervical area directly above the swelling under local anaesthesia using 2% xylocaine hydrochloride (Figure 3). The oesophagus was approached between the sternocephalicus muscle and trachea. The oesophagus was then occluded by applying tape / sterile bandage proximal and distal to the foreign body (Figure 4). The operative field was suitably packed off to avoid any possible contamination. As the obstructive mass was snugly lodged in the oesophagus and was not moving any further on manipulation, a longitudinal incision was made directly over the obstruction (Figure 5) and exteriorized the foreign body (Figure 6) and removed rexine / leather material (Figure 7) from the oesophagus. The inner mucosa was closed by interrupted apposition sutures (Figure 8 and Figure 9) and outer layers (submucosa, muscularis and adventitious layers) were closed as single layer by simple interrupted/ continuous suture pattern (Figure 10) using absorbable suture material No. 1 to 0 polyglactin 910.

The overlying muscles and subcutaneous

tissues were sutured with continuous suture pattern using absorbable suture material No. 1 polyglactin 910 (Figure 11) and skin was closed by horizontal mattress suture pattern using No. 2 Nylon (Figure 12). The sutured wound was dressed daily using povidine iodine spray and Inj. AC- Vet Max^a 10 mg/kg body weight and inj Melonex plus^a 25 ml were administered intramuscularly daily for 7 days and 5 days respectively. Intravenous fluid therapy consisted of administration of 2 litres of 5% dextrose-normal saline during surgery and post-operative period for 7 days. Food was withheld completely for 5 days and then given oral liquids for 2 days. The animal was given gruel and finely cut grass from 7th day onwards. The sutures were removed on 10th post-operative day.

RESULTS AND DISCUSSIONS

Extraction of cause of obstruction, rexine/ leather material by cervical oesophagotomy was successful in all 4 buffaloes. The follow up treatment until the animals resume normal feeding and watering resulted in uneventful recovery without any complications.

The presence of metal wire as cause of obstruction strongly support that cattle and buffaloes ingest foreign bodies due to their indiscriminate feeding habit Kachhawaha *et al.* (2011) and cervical oesophageal obstruction in both cases support the idea that the oesophagus - Brand of Intas Animal Health, Ahmedabad.

In the caudal cervical region is narrower than the earlier region and the pressure exerted by the first rib and the trachea could act as a predisposing factor Kumar and Gahlot (2015). Complete obstruction in both cases suggest that the muscular contractions initiated with foreign



Figure 1. Passing of probang.

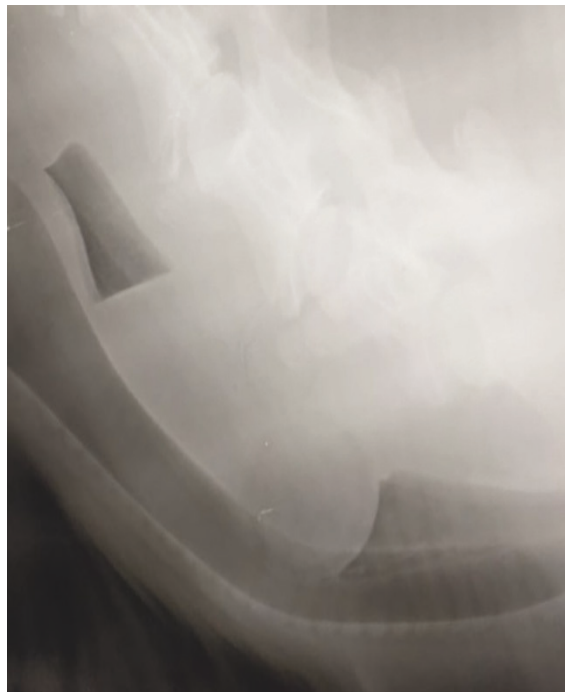


Figure 2. Skiagram showing presence of obstruction in oesophagus-left lateral view of neck.



Figure 3. Surgical incision site on left side of neck for cervical oesophagotomy.



Figure 4. The oesophagus was occluded by applying sterile bandage proximal and distal to the foreign body.



Figure 5. A longitudinal incision was made directly over the obstruction on the oesophagus.



Figure 6. Exteriorizing the foreign body from the oesophagus.

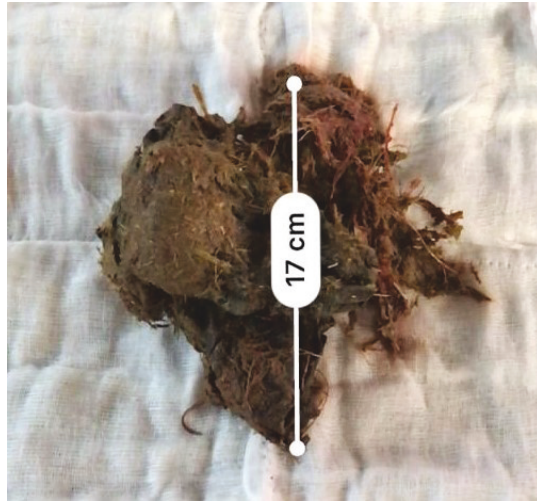


Figure 7. The rexine or leather material removal from oesophagus.

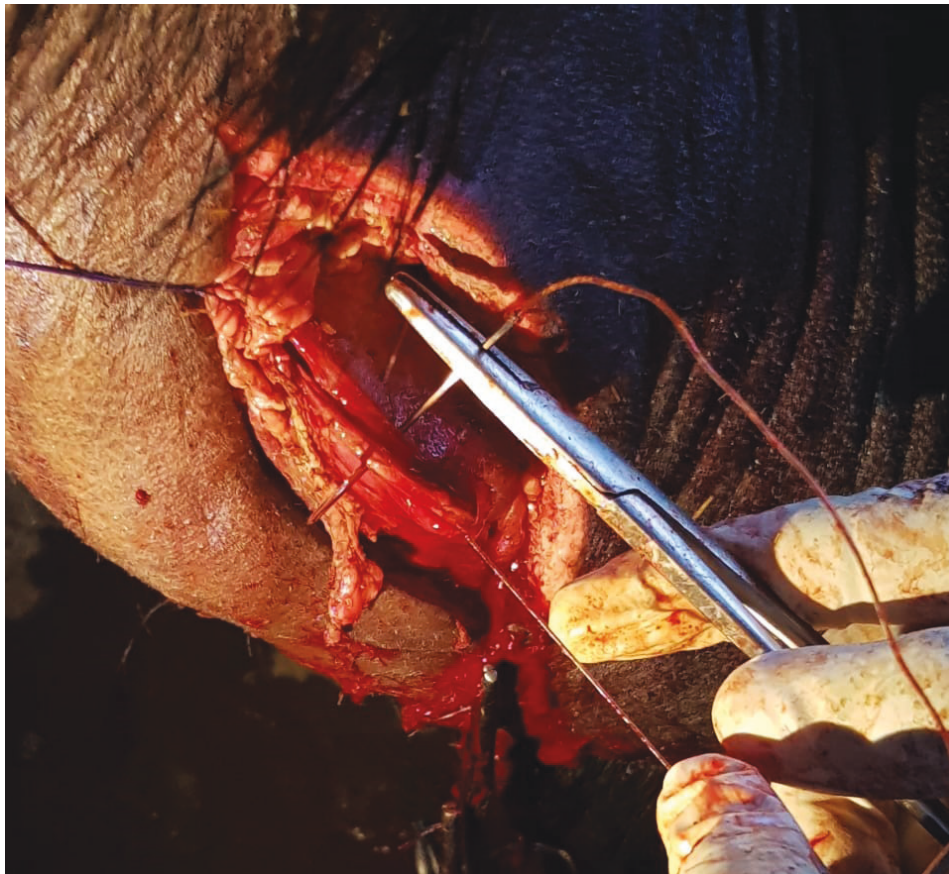


Figure 8. Initial suturing of mucosa by interrupted apposition sutures.

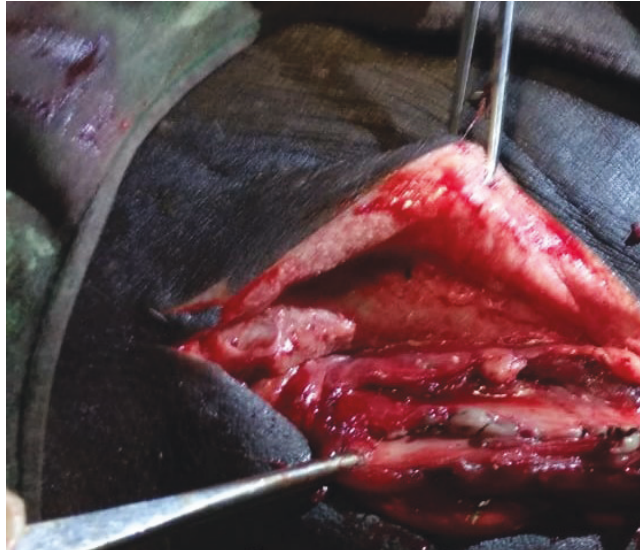


Figure 9. Showing the complete suturing of mucosa by apposition sutures using absorbable suture material No. 1-0 polyglactin 910.



Figure 10. The suturing of outer layers using absorbable suture material No. 1-0 polyglactin 910.



Figure 11. The suturing of overlying muscles and subcutaneous tissues with continuous suture pattern using absorbable suture material No. 1 polyglactin 910.



Figure 12. The skin was closed by horizontal mattress suture pattern using No. 2 Nylon.

body to move away the object were ineffective which hence resulted in spasm on either side of the obstruction and complicated the situation further by turning partial obstruction to a complete obstruction Smith *et al.* (2008). Choke can be diagnosed by physical palpation, by passing probang or by plain radiography as done in the present study. Confirmatory diagnosis in case of radiolucent foreign bodies could be achieved by barium contrast radiography or by passing a flexible endoscope. The oesophageal spasm over the complete obstruction results in difficulty in the advancement of the foreign body aborally Kumar and Gahlot (2015) and hence vigorous attempts to dislodge the object may result in rupture of the oesophagus and subsequent death of the animal Church *et al.* (1972). Various post-operative complications associated with the oesophagotomy were suture dehiscence, stricture, fistula, cellulitis etc. Prognosis would be good if treated within 2 to 12 h Smith (2008) from the onset, worst if not treated within 24 to 48 h (Hass, 2010) and grave if not treated for a week Church *et al.* (1972). Successful outcome has been reported in the present study as the animals were within 24 to 48 h.

CONCLUSION

The present cases of oesophageal obstruction buffaloes were diagnosed by clinical signs, physical examination and concluded by radiography. The obstruction was then relieved by cervical oesophagotomy. The post-operative management with antibiotics and analgesics along with intravenous fluids to correct dehydration for 7 days along with rumenototics and probiotics helped the animals to recover without any complications.

It is concluded that oesophageal obstruction in animals is a clinical emergency as chronic obstruction of even more than 24 h results in pressure necrosis of oesophageal mucosa due to prolonged contact with the foreign body and circumferential mucosal damage may contribute to esophageal stricture Gangwar *et al.* (2013). Hence the present condition needs early diagnosis, surgical intervention in due time and proper post-operative care for the successful outcome.

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