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Management of oesophageal obstruction in buffaloes (*Bubalus bubalis*): a report of two cases

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Complete oesophageal obstruction is a serious condition that affects various animal species, including buffaloes. When a foreign object or mass completely blocks the oesophagus, it can lead to potentially life-threatening complications if left untreated (Marzok *et al.,* 2015; Das *et al.,* 2019). The condition requires prompt diagnosis and intervention to safeguard the animal's well-being and to prevent further complications (Tyagi *et al.,* 1999).

This report describes two female buffaloes (4 yr- and 6 yr- old) presented with complete oesophageal obstruction, with a primary complaint of anorexia, profuse salivation, and respiratory distress. Upon clinical examination, both buffaloes exhibited several characteristic signs of oesophageal obstruction such as difficulty in swallowing and visible distress, palpable enlargement of the oesophagus, ptylism, tympany (bloating) and protrusion of the tongue. The diagnosis was primarily based on history and clinical signs. To confirm the diagnosis and locate the obstruction, lateral cervical radiographs were taken, which revealed the presence of radio-opaque foreign bodies in the oesophagus of both animals, confirming the diagnosis of complete oesophageal obstruction (Fig. 1a&b).

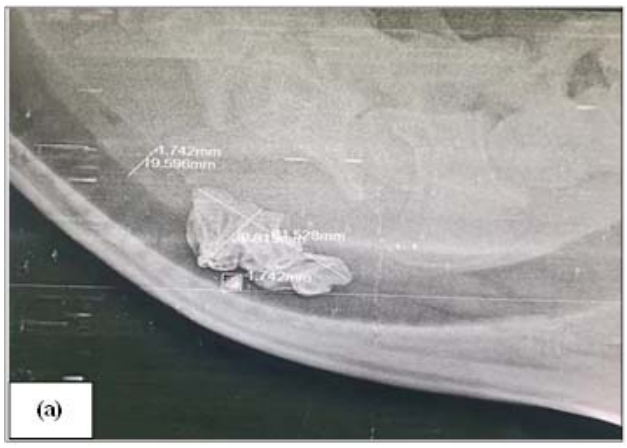

Fig. 1: a) Left lateral mid-cervical radiograph showing presence of a soft tissue mass (leather) radiopaque foreign body within the esophageal lumen in Case 1.

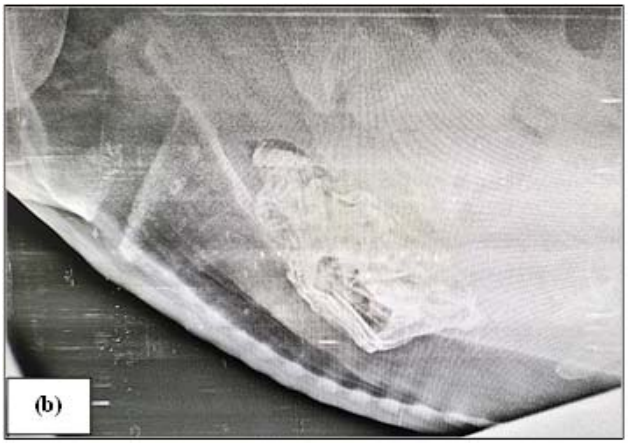

Fig. 1: b) Left lateral cranial-cervical radiograph presence of a radiopaque foreign body (tarpaulin) within the esophageal lumen, accompanied by significant compression of the tracheal wall in Case 2.

Initial attempts were made to remove the obstructions using non-invasive methods. An attempt was made to retrieve the foreign body through endoscopy, followed by attempts to push the foreign bodies into the rumen using a probang. However, these conservative approaches were unsuccessful in both cases. It was then decided to perform surgery, oesophagotomy, to relieve the obstruction.

Under deep sedation and local analgesia, the surgical site was prepared aseptically, and a 10-12 cm long skin incision was made in the left cranio-lateral aspect of the cervical region over the obstructing foreign bodies (Fig. 2). The oesophagus was approached between the sterno-cephalicus muscle and trachea. Doyen's clamps were applied, and surgical draping was done to prevent contamination and avoid spilling of gastrointestinal contents over the surgical site. After exposing the oesophagus a longitudinal incision was made on the cranial aspect of the oesophagus. In Case 1, a leather foreign body and in Case 2, a hard tarpaulin cloth was successfully retrieved from the cervical oesophagus using Allis

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tissue forceps. The oesophageal mucosa was sutured using continuous suture pattern, and the submucosa and muscularis were closed with the Cushing pattern in separate layers using polyglactin-910 number 1.0 suture material. The muscles were sutured in a

Fig. 2: Oesophagotomy incision during the procedure.

continuous lockstitch pattern. The skin was closed using polyamide suture material.

Postoperatively, both buffaloes were advised not to feed orally and were administered fluid therapy to maintain hydration and electrolyte balance for 7 days. Antibiotic, enrofloxacin (5 mg/kg body wt., i.m.) and analgesic, meloxicam (0.2 mg/kg body wt., i.m.) were administered for 5 days. The skin sutures were removed 12 days after surgery and the animals recovered without any complications.

A higher incidence of oesophageal obstruction is reported in buffaloes than cattle (Shivaprakash, 2003), due to stall feeding, nutritional deficiency, and pica rendering them more susceptible to this condition. Non-invasive approaches were ineffective, necessitating surgical extraction of the obstructing foreign bodies (Sagar *et al.,* 2017). Oesophageal obstruction, frequently localized to the cervical region, is associated with various foreign materials, including phytobezoars, trichobezoars, vegetables, coconut, mango, rubber, and leather (Veena *et al.,* 2000; Salunke *et al.,* 2003). This condition results in severe ruminal tympany due to impaired eructation, posing a significant risk of mortality (Salunke *et al.,* 2003; Vishwanatha *et al.,* 2012). Diagnostic modalities such as palpation, stomach tube passage, ultrasonography, and radiography are essential for determining the nature and location of the obstruction (Kumar *et al.,* 2016). Surgical closure of oesophageal incisions using a modified two-layer suture technique has been shown to be effective in ruminants (Kumar *et al.,* 2016). Additionally, prolonged obstruction often leads to dehydration and metabolic acidosis, requiring correction with appropriate fluid therapy during the perioperative period (Fubini *et al.,* 2003).

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