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Surgical management of cervical oesophageal obstruction in a buffalo calf

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Abstract

A two-month-old female buffalo calf with a history of anorexia and vomiting just after drinking was brought to the veterinary clinic at the Lala Lajpat Rai University of Veterinary And Animal Sciences, Hisar. An oesophageal survey radiograph revealed radiolucent material in the distal part of the cervical oesophagus along with oesophageal dilatation. Surgical surgery was required because passing a stomach tube couldn't clear the impediment. A rope loaded with dry feed leading to a hard lump was discovered to be the impeding foreign object. Following surgery, the animal recovered without incident.

Keywords: Oesophagus, obstruction, buffalo calf

1. Introduction

Oesophageal blockage, which can be intraluminal or extraluminal, is the most typical clinical manifestation in cattle (Marzok *et al.*, 2015) [3]. Due to their avaricious and indiscriminate feeding habits, bovines are typically the ones who have oesophageal obstruction caused by foreign bodies. Both intrinsic intraluminal blockage and subsequent extraluminal compression by a bulk are possible causes (Smith, 2008) [1]. The most prevalent condition is intraluminal obstruction, often known as "choke," and it typically happens when foreign objects like large feedstuff, medicinal boli, mango, tarpaulin fabric, palm kernels, leather fragments, resin, new potatoes, trichophytobezoars, or oesophageal granulomas become lodged in the lumen of the oesophagus (Bhattacharya *et al.*, 2019 and Hari Krishna *et al.*, 2020) [6, 4]. Additionally, depending on the type of foreign body, intraluminal oesophageal obstruction might be either full or partial. Complete oesophageal obstruction is a medical emergency that necessitates prompt treatment because it prevents the eructation of gases, which can cause acute tympany and respiratory distress (Pund *et al.*, 2018 and Hari Krishna *et al.*, 2020) [7, 4]. These obstructions might be found at the pharynx, the cranial aspect of the cervical oesophagus, the thoracic inlet, or the base of the heart (Smith, 2008 and Choudary *et al.*, 2010) [1, 8]. Aortic tumors, huge peri oesophageal abscesses, larger mediastinal lymph nodes, the thymic form of lymphosarcoma, or mediastinal lymphadenopathy can all place pressure on the oesophagus in rare situations, leading to extraluminal incomplete obstruction (Marzok *et al.*, 2015) [3]. Diagnosis is based on a patient's history of consuming specific foods and clinical symptoms include ruminal tympany, respiratory distress, nasal discharge of food and water, tenesmus, vomiting, ptyalism, and metabolic acidosis (Pund *et al.*, 2018; Bhattacharya *et al.*, 2019; Hari Krishna *et al.*, 2020) [7, 6, 4]. Additional diagnostic methods, such as manual oral examination, probangs or stomach tubes, oesophageal endoscopy, oesophageal ultrasonography, and radiography of the cervical and thoracic oesophagus, may be useful in locating an obstruction in addition to the clinical signs and external palpation. This report describes the surgical treatment of a case of oesophageal blockage in a buffalo calf caused by a hard lump of rope loaded with dry feed.

2. Material and Methods

Prior to making an attempt to remove the foreign object, ruminal localization through the left paralumbar fossa in the calf was done to relieve ruminal tympany.

Haematological parameters were within normal reference range. Lateral radiograph of neck region revealed cervical oesophageal obstruction in the calf (Fig. 1). The calf was immobilized in right lateral recumbency and sedated with Xylazine hydrochloride injection (0.05 mg/kg, IV) (Fig. 2). Manipulative attempts were undertaken to push the obstructing object aborally towards the rumen using a stomach tube or to manoeuvre it orally (using the thumb or

fingers to press the obstructing object toward the oral cavity) so that it could be extracted from the mouth. This process was softly repeated two or three times, and subsequent experiments were halted out of concern for oesophageal perforation. Since the foreign body was not palpable, the location of the foreign body/surgical site was established through the insertion of a probe. To produce local analgesia, lignocaine hydrochloride was injected into the operative site.



Fig 1 and 2: Lateral radiograph of neck region showing cervical oesophageal obstruction and restraining of calf in right lateral recumbency

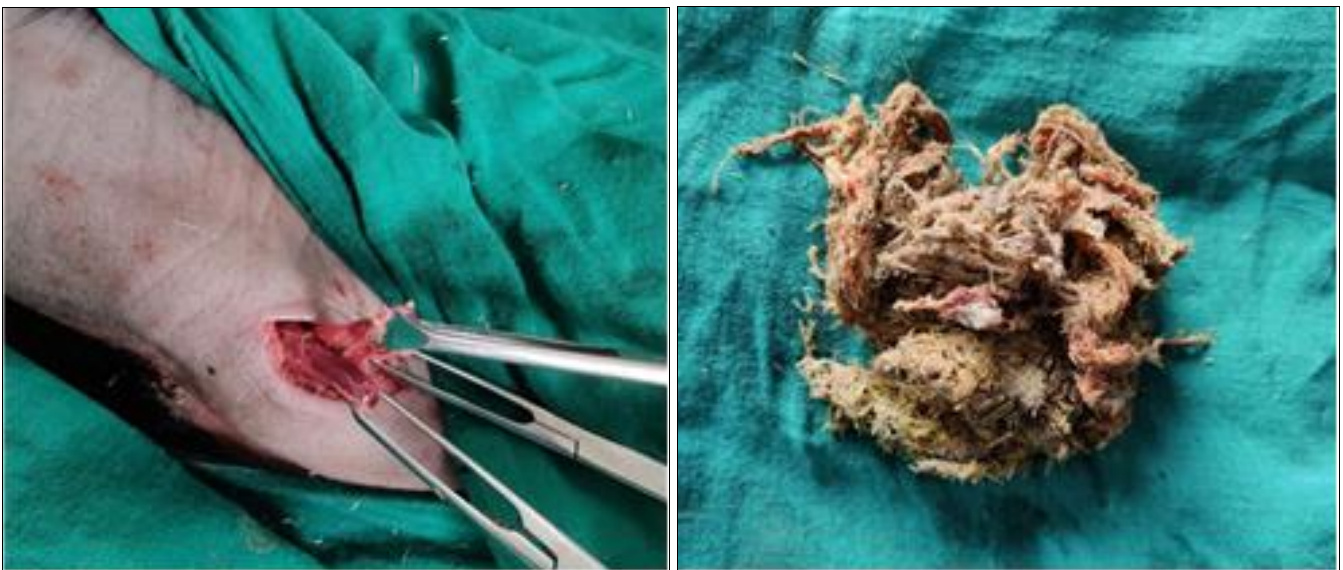


Fig 3 and 4: Showing longitudinal incision and foreign body removed from the oesophagus

After preparing the surgical site, a 6 cm longitudinal incision was made along the dorsal border of the jugular furrow, and the sternocephalicus muscle was split to expose the obstruction. The carotid artery and jugular vein were protected with the utmost care. A longitudinal incision was performed right over the obstruction in the oesophagus after it had been made visible (Fig. 3). The obstructing foreign item was found to be a rope coated in the dried feed that led to a hard lump (Fig. 4). It took two layers to close the incision. In the first layer, simple interrupted sutures were put with bite up to the submucosa and knots inside the lumen of the oesophagus. In the second layer, simple interrupted sutures were used to close the muscular layer using polyglactin 910 No. 2-0. Sterile normal saline was used to flush the operative

site. Nylon suture No. 2 was used to seal the skin incision using a horizontal mattress suture pattern (Fig. 5).

Following surgery, the calf was kept on fluid therapy (Dextrose normal saline @ 50ml per kg body weight intravenously) for the first three days, followed by a two-day soft gruel diet and subsequently chaffed soft grass. Ceftriaxone (@10 mg/kg body weight) and meloxicam (@0.3 mg/kg body weight) were given intramuscularly for 5 days as broad-spectrum antibiotics and nonsteroidal anti-inflammatory drugs, respectively. The wound was dressed daily with 5% povidone-iodine lotion, followed by the use of a fly-repellent spray around the surgical site. On the 12th post-operative day, the skin sutures were taken out (Fig. 6).



Fig 5 and 6: Showing skin suturing after surgery and 12th postoperative day

Results and Discussion

After two weeks of treatment and a regular appetite, an uneventful recovery was noted. The cervical portion of the oesophagus was blocked, which may be due to a thicker oesophageal wall and a trumpet- or rosette-shaped lumen, as well as the pressure applied by the first rib and the trachea. Similar findings were previously reported by prior researchers (Pund *et al.*, 2018; Bhattacharya *et al.*, 2019 and Hari Krishna *et al.*, 2020) [7, 6, 4]. In our example, a calf had a cervical oesophageal obstruction caused by a rope laden with dry feed, resulting in a hard mass, which may have been caused by the voracious and indiscriminate feeding habits of ruminants. Similar results were recorded by earlier researchers (Marzok *et al.*, 2015; Sivaraman *et al.*, 2017) [3, 9]. Survey radiographs, which showed radiopaque foreign bodies, were used to corroborate the diagnosis of oesophageal blockage. Similar results were reported by Marzok *et al.* (2015) [3], Kumar *et al.* (2016) [10], and Borakhatariya *et al.* (2017) [2]. In contrast, ultrasonography (Kumar *et al.*, 2016) [10] and flexible endoscopy (Sivaraman *et al.*, 2017) [9] have been utilized successfully to diagnose oesophageal obstruction in bovines in other investigations. The suturing material in the current investigation was polyglactin 910. It has been reported that polyglactin 910 has been utilized for suturing the different layers of the oesophagus (Marzok *et al.*, 2015; Borakhatariya *et al.*, 2017) [3, 2]. Nevertheless, some authors have employed chromic catgut (Bhattacharya *et al.*, 2019 and Hari Krishna *et al.*, 2020) [6, 4]. If oesophageal blockage in cattle is treated within 24 to 36 hours of the start of clinical indications, the prognosis is favourable (Ravikumar *et al.*, 2003) [5].

3. Conclusions

In the field of bovine veterinary medicine, oesophageal obstruction brought on by foreign objects is regarded as one of the most critical situations requiring emergency surgery and prompt treatment since blockage of the oesophagus would result in life-threatening bloat.

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