DOI : 10.5958/2277-8934.2021.00033.3 *Vol 28 No 2, p 197-200*

OESOPHAGEAL OBSTRUCTION IN DROMEDARY CAMELS: REPORT OF 4 CASES

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ABSTRACT

Oesophageal obstruction and its surgical management in 4 camels is reported. The signs during clinical examination were dysphagia, salivation, and swelling at different levels of ventral aspect of the neck. The site of obstruction was confirmed by plain and contrast radiography. In 3 cases, obstruction was present at distal cervical part of oesophagus at the level of 5th cervical vertebra and in one case it was at thoracic inlet. Conservative and surgical treatment was carried out; one case was successfully recovered by conservative treatment and two cases showed the recovery after oesophagotomy and one case died after oesophagotomy.

Key words: Camel, oesophagus, oesophageal obstruction, oesophagotomy

Oesophageal obstruction is often reported in camels (Dabas *et al,* 2002; Ramadan *et al,* 1986; Anwar and Moustafa, 2014). These are caused by ingestion of food or other foreign bodies such as rags and polyethylene bags or metallic objects (Ahmed, 2011; Singh *et al,* 2008, 2011). In adult animal obstruction may be caused by bezoars migrating from the rumen or pressure against the oesophagus from the neighboring tissues such as abscess, lymph node or cysts (Ramadan, 2017). Diagnosis was based on clinical findings, passing stomach tube through the mouth, plain or contrast radiography and endoscopy was conducted in some cases (Ahmed, 2011; Ramadan, 2017). Oesophagotomy was successful to remove foreign bodies in the cervical region or even in the mediastinal region, however, rumenotomy was achieved to remove foreign bodies in the cardiac region. The operations were done with high success rate but complications were in the form of oesophageal fistula (Ramadan, 2017). Present report describes management of oesophageal obstruction in 4 dromedary camels.

Case History and Observations

Four camels; 3 females and one male, aged between 5-8 years of age were presented to the department of Veterinary Surgery and Radiology, TVCC, Bikaner with the history of dysphagia, extending neck, salivation and regurgitation of feed and water just after swallowing. All the cases had the history of obstruction between 1-5 days. On clinical examination, the oesophagus was palpated and it was found as hard swollen mass of variable thickness and location in the ventral distal cervical region of the neck. The probang was passed in the oesophagus to identify the location of the obstruction which were further confirmed by plain and contrast radiography with barium meal (Fig 1). In 3 cases obstruction was present at the distal cervical part of oesophagus at the level of 5th cervical vertebra whereas, in 1 case it was identified at the thoracic inlet.

Treatment

The obstruction was initially attempted to be removed using probang under xylazine sedation (Fig 2) and successfully cleared the obstruction in 1 case. In 3 cases, the obstruction was removed surgically by oesophagotomy (Gahlot, 2000) under xylazine hydrochloride (0.3 mg/kg b.wt) sedation administered intravenously. The camels were positioned in right lateral recumbency and the ventral neck region was prepared aseptically. The proposed incision line was infiltrated with 2% lignocaine hydrochloride (Fig 3).

The stomach tube was inserted into the oesophagus up to the site of obstruction. A linear skin incision over the obstruction site was made at the ventro-lateral aspect of the neck between jugular vein and trachea. The oesophagus was approached by bluntly separating the sternocephalicus muscles.

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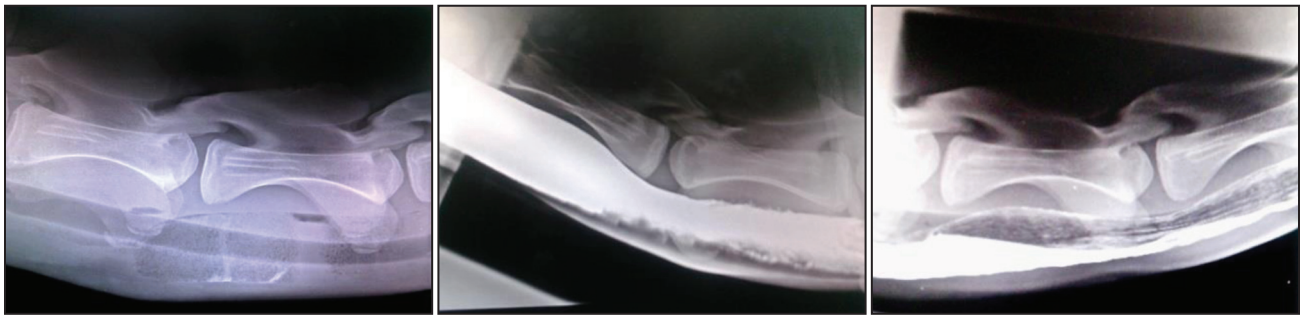

Fig 1. Plain and Contrast Radiographs demonstrating oesophageal obstruction and accumulated contrast material in oesophagus.

Fig 2. Relieving the obstruction by passing the probang under xylazine sedation.

The oesophagus was separated from the surrounding tissue by blunt dissection and the site was packed with sterilised gauze to prevent any tissue contamination with oesophageal luminal contents. The oesophageal wall was incised over the site of luminal obstruction. In 1 camel, 12 cm long plastic tube was retrieved from the obstructed oesophageal lumen. In 2 camels, the oesophageal lumen was impacted with sandy feed material at its distal part; feed material along with polythene bag (Fig 4). The impacted feed material was removed manually as well as, siphoning with water pressure after inserting tube from the incision towards the distal end of the oesophagus. After removal of obstruction, the oesophageal wall and the surrounding tissue at the surgical site were flushed and cleaned with normal saline. The oesophageal wall was sutured in 2 layers with Polyglactin 910 No. 1. The mucosal layer was sutured by simple interrupted suture pattern. The submucosa, muscularis and tunica adventitia layers were sutured following continuous pattern. The muscles were sutured in simple continuous pattern using chromic Catgut No. 2. The skin was closed with interrupted pattern using Silk No-2 sutures.

Fig 3. Surgical site and incision between trachea and sternocephalicus muscle.

Postoperatively, the camels were maintained on balanced electrolyte fluid therapy for 5-days, Inj oxytetracycline (5 mg/kg, IV), meloxicam (0.3 mg/kg, IM). The sutures were removed after 12 days. Uneventful recovery was observed in 3 cases whereas, 1 camel died on 8th day, postoperatively.

Fig 4. Incision at oesophagus and removal of impacted food material.

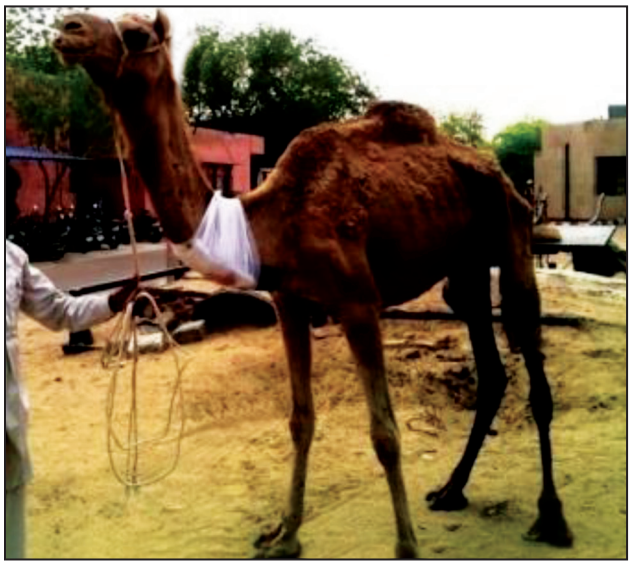

Fig 5. Animal after oesophagotomy operation.

Results and Discussion

In present reported cases, oesophageal obstruction or impaction was present at distal cervical region at the level of 5th cervical vertebra and near thoracic inlet which are in agreement with the observation of Ramadan *et al* (1986). Foreign bodies such as food particles, plastic bags, rags, plastic balls and cloths have been recorded to be the main cause of oesophageal obstruction in adult camels (Ramadan and Abdin-Bey, 1990). In young camels, oesophageal obstruction have been reported due to ingestion of pieces of rags, shredded polythene bags, cloth or plastic balls (Ramadan, 1994); plastic bags and sheets (Ahmed, 2011), whereas, in adult camels obstruction is caused by pieces of cloth or hair balls (Ramadan and Abdin-Bey, 1990). A small harrow piece at mid cervical region (Singh *et al,* 2011) and sewing needle have also been recovered from the oesophagus of the camel (Singh *et al,* 2008). Penetrating foreign bodies in oesophageal and paraoesophageal regions have also been reported in ruminants (Singh *et al,* 2016; Singh *et al,* 2017).

In 2 cases, oesophagus was fully impacted at the distal part with wheat straw which is not the natural feed of the camel although, they are mainly dependent on the plants of the desert. The mucosal glands present in the mucosal layer help to lubricate the feed for easy passage to 1st compartment of stomach, although, these glands gradually decrease from cranial to caudal part of oesophageal lumen wall (Nabipour *et al,* 2001), which contribute to the etiology of impaction of feed at the distal part of oesophagus. Continuous feeding of wheat straw can cause the impaction of stomach and subsequently in chronic condition dilatation and impaction of the oesophagus (Ramadan, 1994). In one case, conservative treatment has been successfully attempted with the help of probang under xylazine sedation to clear the passage of oesophagus (Marzok *et al,* 2015). In the present study, oesophagotomy was performed in 3 cases. Two cases recovered uneventfully, but 1 camel died of respiratory distress. Delay in the oesophagotomy after complete obstruction increases the post-operative complications viz. aspiration pneumonia, suture dehiscence and emphysema due to leakage of air. Aspiration pneumonia increases with an increase in duration of obstruction and it should be considered in oesophageal obstruction (Wintzer and Kraft, 1997; Niehaus, 2008) and it should be treated as an emergency to avoid the pressure on the mucosa by the obstructing material, which causes extensive tissue damage consequent to scar tissue formation, stenosis, and even oesophageal perforation (Feige, 2000). The successful recovery was reported in 3 camels with oesophageal obstruction.

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