Journal of Advanced Veterinary Research Volume 5, Issue 4 (2015) 176-178

Journal of Advanced Veterinary Research

http://advetresearch.com/index.php/avr/index

Standing Position Esophagotomy in Cattle and Buffaloes

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ARTICLE INFO

Original Research

Accepted:
18 October 2015

Keywords:

Cattle
Bufaloes
Esophagotomy

ABSTRACT

The present study was carried out on 16 animals (12 cattle and 4 buffaloes) suffering from complete cervical esophageal obstruction. The animals were presented to the Veterinary Teaching Hospital at Assiut University, Egypt. Diagnosis of the cases was achieved through clinical signs, external palpation of the foreign body and survey radiography. Standing position esophagotomy was performed for treatment of the cases. Follow up revealed recovery of all cases without any postoperative complications.

Introduction

The primary indication for esophageal surgery in large animals is to relieve esophageal obstructions (choke) which have not respond to conservative treatment (Meagher and Mayhew, 1978). Esophageal obstruction is a common occurrence in cattle and is attributable to their feeding habits (Smith, 2008). Obstructions are often caused by ingestion of foreign objects or feed stuff (Patel and Brace, 1995). Diagnosis of esophageal obstruction was obtained by external palpation, manual oral examination, passing a stomach tube, esophageal endoscopy as well as radiography of the esophagus (Haven, 1990). Surgical treatment of esophageal obstruction is indicated when conservative therapy fails, however many surgeons were going directly to surgical treatment as a sole solution (Misk *et al*., 2004). The aim of the present study was to establish standing position esophagotomy as a safe method for treatment of cervical esophageal obstruction in cattle and buffaloes.

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Materials and methods

The present study was carried out on 16 animals (12 cattle and 4 buffaloes) suffering from complete cervical esophageal obstruction. The animals were presented to Assiut veterinary teaching hospital. They were females and of 1 – 7 years old. Diagnosis of the cases was obtained depending on case history, clinical signs and survey radiography. Esophagotomy in standing position was performed in all cases.

For survey radiographic examination, the animals were tranquilized using Xylazine Hcl in a dose rate of 0.05 mg/kg b.w. I.M. Lateral radiographic projection to the neck of the animal in standing position was performed using 35-45 MAs and 65-75 k.v. Standard speed film and intensifying screens were used.

Preoperatively, the animal was given dextrose and Ringers solutions 3000 ml intravenously. The animal was in standing position with fixation of the

ISSN: 2090-6277/2090-6269/

neck extended. The surgical site was prepared aseptically. Linear infiltration analgesia at the site of operation was performed using Lidocaine Hcl 2%.

A longitudinal incision was made in the skin over the obstructing foreign body. The esophagus was exposed and incised, and then the foreign body was removed. The esophagus was thoroughly cleaned with normal saline and then closed with a two layer suture pattern.

In the first layer, the mucosa was closed with the continuous suture pattern. In the second layer, the submucosa and muscularis were closed with simple continuous suture pattern using chromic catgut. The skin apposed with simple interrupted suture pattern using silk.

Postoperatively, oral feeding was with held and the animal was maintained with dextrose and normal saline for 3 days. The owners and local veterinarians were instructed regarding the medication and postoperative cure.

Follow up of the cases was determined and skin stitches were removed 10 days postoperatively.

Results

All cases of the present study were suffering from complete cervical esophageal obstruction. The animals were presented to our hospital with a history of acute onset of severe bloat, respiratory distress and inability to swallow. Clinical examination revealed that, the animal had severe abdominal distention, extension of the neck and copious amounts of saliva were expelled. By palpation there is hard swelling at left ventrolateral aspect of the middle cervical region in 11 cases and at the thoracic inlet in 5 cases. Attempts to pass a stomach tube were unsuccessful. Survey radiography revealed presence of radiopaque structure at the level of the esophagus which confirms esophageal obstruction.

The foreign bodies which cause complete esophageal obstruction in the present study were root of cabbage, corn, pieces of rubber, leather mass and plastic bag filled with food materials.

Follow up of the cases revealed complete recovery of all animals within 12 days without any postoperative complications.

Discussion

Esophageal obstruction is the most important surgical problem involving esophagus in cattle and buffaloes (Smith, 1996; Tyagi and Singh, 1996; Misk *et al*., 2004).

Esophageal obstruction commonly occurs at the cranial aspect of the cervical esophagus, at the thoracic inlet or at the base of the heart (Haas, 2010). In the present study, esophageal obstruction was at the middle cervical region in 11 cases and at the thoracic inlet in 5 cases.

Double contrast radiography with barium and air helped to better identify the location and nature of the foreign body (Haven, 1990; Niehaus 2008). In the present study, clear diagnosis of esophageal obstruction was achieved through external palpation of the foreign body, clinical signs and survey radiography.

The prognosis is good for animals suffering from esophageal obstruction if they were treated within 2 to 12 hours from the onset of clinical signs (Smith, 2008). In the present studym all cases were exposed to surgical interference (esophagotomy) within 10 hours from the onset of obstruction.

Fatality associated with complete esophageal obstruction in adult ruminants results from the inability of fermentative gases to escape the rumenoreticulum. Signs might be attributable to ruminal tympany, respiratory distress, and metabolic acidosis, which can be severe enough that they mask the primary underlying esophageal disturbance (Smith, 2008).

Due to complete esophageal obstruction, the cases suffering from severe abdominal destination and respiratory distress, which may leads to death of the animal during operation if it performed in recumbent position, so that esophagotomy was performed in standing position in all animals included in the present study.

Post-operative complications associated with esophagotomy are incisional dehiscence and fistula formation (Ruben 1997). All cases of the present study were recovered without any post-operative complications.

Conclusion

From our point of view, esophagotomy in standing position is considered to be an easy, safe, rapid and successful treatment in cases of complete cervical esophageal obstruction in cattle and buffaloes.

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