

Radiography of Unusual foreign body in Ruminants

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Abstract

The present study was carried out on 10 animals (6 buffaloes, 3 cattle and one camel). The animals were admitted to the Veterinary Teaching Hospital, Assiut University affected by unusual size, type, and location of foreign bodies. Diagnosis and description of the foreign bodies were depend mainly on radiographic examination. Most of the foreign bodies recorded in this study were of metallic origin (needles and nails). These foreign bodies reached to the animals by several routes (ingestion, during surgery) and lodged at various areas of animal tissues (throat, Oesophagus, thoracic cavity, reticulum, udder cistern, stifle region). Surgery was performed in most cases for removal of the foreign bodies.

Keywords: Radiography, Foreign Body, Ruminant, Surgery.

Introduction

Ingestion and lodgement of foreign bodies are common in the bovine primarily due to indiscriminate feeding habits (Singh and Nigam 1981). Industrialization and mechanization of agriculture have further increased the incidence of foreign bodies in these animals (Misk et al., 1984).

Ingested foreign bodies by buffaloes and cattle are divided into two main groups; the first category is foreign bodies of metallic origin and the second is foreign bodies of non metallic origin (Misk et al., 2001). Foreign objects may be deposited into the body by a traumatic or iatrogenic injury (Ali 2007).

Entrance and migration of foreign objects through the body tissues lead to many complications that differ according to the nature of the foreign body and the way of its entrance into the tissues (Chee and Sethi 1999 & Calfee and Manning 2002).

Radiographic diagnosis of metallic foreign bodies is a helpful diagnostic technique (Spouge et al., 1990 & Hunt et al., 2004).

The present study deals with diagnosis (specially radiographic appearance) and surgical treatment of unusual foreign bodies deposited into the animal tissues either by ingestion or by other way.

Material and Methods

The present study was carried out on ten animals (6 buffaloes, 3 cattle and one camel) suffering from lodgement of unusual foreign bodies within their tissues. These animals were selected from the clinical cases presented to the Veterinary Teaching Hospital

Assiut University. The animals were of both sex and of different ages. They were subjected to full clinical study including case history and clinical signs. Radiographic description of the type, size and location of the foreign bodies were recorded. Surgical treatment was performed in most cases under the effect of tranquilizers (Xylazine) and local infiltration analgesia (Xylocaine HCl 2%). Laparotomy, opening the udder cistern, surgery at the throat, surgery at the stifle region, opening of abscess and excision of the soft palate were the surgery performed for extraction of the foreign bodies according to their location within the animal tissues. The animals with thoracic foreign bodies were slaughtered.

Results

Based on history, clinical signs and radiographic description, the various types of unusual foreign bodies affecting buffaloes, cattle and camels were diagnosed and recorded in the present study (table 1).

Foreign bodies in buffaloes:

Six buffaloes (females) were diagnosed in the present study suffering from unusual foreign bodies. The first case was 4-year-old buffalo pregnant 9 months presented with clinical signs of foreign body lodgement in the throat manifested by chronic cough, difficulty in swallowing, respiratory dyspnea and painful edematous swelling of the affected area. Radiographic examination demonstrated foreign object of metallic density (12.5cm long needle) located vertically at the level of pharyngeal region behind the angle of the mandible. Surgery was performed and the needle

extracted. The animal regained good recovery.

The second case was 5-year-old buffalo presented with udder problem. History indicated that the animal treated from teat obstruction followed by application of plastic tube within the teat canal. By time the tube was disappeared. By palpation, there is a hard, movable, irregular object within the udder cistern related to the affected teat. Radiographic examination demonstrated tubular foreign body of soft tissue density lodged within the udder cistern. Surgical opening of the udder cistern was performed followed by extraction of the foreign body which is plastic tube reach about 9cm in length.

The other four cases of buffaloes were females and of mature age ranging from 3-6 years. These animals showed anorexia, suspended rumination, suppressed ruminal movement, fluctuating temperature and sharp drop in milk yield.

Radiographs revealed unusual size of metallic foreign bodies (ranging between 7.5-14cm in length). In two buffaloes the foreign bodies appeared located within the reticulum (12cm long nail in one case and 14cm long needle in the second case). In the third buffalo, the foreign body was 7.5 cm long nail located within the reticulum and directed toward the thoracic cavity. In the fourth buffalo, the foreign body was 10cm long needle embedded within the thoracic cavity.

Laparorumenotomy was performed for extraction of the reticular foreign bodies. The buffalo with thoracic foreign body was slaughtered. Follow up of the operated animals showed good recovery.

Foreign bodies in cattle:

Three cattle (two males and one female) were recorded in the present study suffering from unusual foreign bodies.

The first case was 5-year-old female cattle presented with history of fractured scalpel blade within the tissues during operation of medial patellar desmotomy. Inflammation and painful swelling of the stifle region were observed. The animal showed severe degree of lameness.

Radiography revealed the presence of a piece of scalpel blade (2.5cm) embedded within the tissues at the level of distal extremity of the femur.

Surgery for extraction of the fractured blade was performed but the trials for its removal was failed because the blade deeply embedded within the tissues.

The second case was 2-year-old male cattle presented with abscess at the left thoracic wall just behind the elbow.

Radiography revealed presence of foreign object of metallic density (8cm long needle) at the level of the abscess. Opening and evacuation of the abscess was performed as usual. By finger the needle was palpated embedded between the tissues at the depth of the

abscess. The needle was isolated from the tissues and extracted.

The third case was 3-year-old male cattle presented with loss of appetite, tympany, loss of body weight and fluctuating temperature.

Radiography of the caudal thorax and cranial abdomen revealed presence of foreign body of metallic density (10cm long needle) at the level of the thorax. The caudal part of the needle appears as if at the level of the reticulum.

Exploratory rumenotomy was performed and the reticulum thoroughly examined. The needle not palpated from the reticulum and it completely migrated to the thoracic cavity with presence of adhesions between reticulum and diaphragm.

Foreign bodies in camel:

6-year-old male camel was presented with signs of complete oesophageal obstruction. The signs were off food, anorexia, restlessness with attempts to swallow, salivation and extension of the neck. By palpation there was a soft swelling at the level of the proximal part of the oesophagus.

Radiography of the neck revealed presence of radiopaque rounded structure at the level of the oesophagus (swallowed soft palate). After radiography, the mouth was opened for detection the soft palate which was not observed within the oral cavity. During manipulation and with continuous movement of the head, the soft palate was dropped within the oral cavity. It was paralysed, wounded, and necrosed. The soft palate was surgically excised and the signs of oesophageal obstruction disappeared. Follow up indicated good recovery of the animal.

Discussion

Ingestion of foreign bodies is still extremely common in buffaloes and cattle specially in developing countries where the standard of animal management is unsatisfactory (Misk et al., 1984). Several factors may play a role in the process of penetration and lodgement of the foreign body including size, shape, weight and sharpness (Misk et al., 2001). The animals under the present study were selected according to the type and location of the foreign body. In most cases the foreign bodies were of metallic origin and of unusual size.

The most ingested foreign bodies were recorded to migrate from the stomach after its perforation to the diaphragm causing inflammatory changes in the abdominal and thoracic cavities as well as intestinal perforation (Hunt et al., 2004 and Koutinas et al., 2004). In the present study the most foreign bodies recorded in buffaloes were of metallic origin (needles and nails) of unusual size ranged between 7.5-14cm in length. These foreign bodies were ingested by the animals then migrated and lodged in the throat (pharyngeal region), reticulum and thoracic cavity. Plastic tube was

Table 1: Unusual foreign bodies in buffaloes, cattle and camel.

Site of foreign body lodgment	Length (cm)	Foreign body	Age (year)	Sex	Animal	No
Throat	12.5	needle	4	female	buffalo	1
udder cistern	9	Plastic tube	5	female	buffalo	2
reticulum	12	nail	4	female	buffalo	3
reticulum	14	needle	6	female	buffalo	4
reticulum & directed toward thoracic cavity	7.5	nail	5	female	buffalo	5
thoracic cavity	10	needle	3	female	buffalo	6
Stifle region	2.5	Piece of scalpel blade	5	female	cattle	7
Left thoracic wall just behind the elbow	8	needle	2	male	cattle	8
Thoracic cavity	10	needle	3	male	cattle	9
oesophagus	-----	Soft palate	6	male	Camel	10

the only non metallic foreign body recorded in buffalo affecting udder cistern. The tube was migrated to the cistern through the teat during application of this tube within the teat canal.

The foreign bodies recorded in cattle of this study were of metallic origin (needles and piece of scalpel blade). In two cattle the foreign bodies (needles) ingested by the animals and reached to the reticulum then migrated to the thoracic cavity in one case and penetrated the left thoracic wall forming abscess in the other case. In one cattle the foreign body was a piece of scalpel blade. The blade fractured, migrated, and lodged within the tissues of the stifle region during medial patellar desmotomy where the veterinarian used a changeable scalpel for this operation.

The well developed soft palate of the male camel is distended by expiratory air during rut season and protrudes out of the oral cavity while creating oral sounds. Occasionally, the distended and protruded soft palate is traumatized by sharp molars or canines of the same camel or due to external violence (Singh and Singh 1996). Traumatized soft palate of the camel in this study considered to be foreign body where it swallowed and lodged within the oesophagus leading to complete oesophageal obstruction.

The animals selected in the present study were affected by unusual length (7.5-14cm), types (soft palate, plastic tube, piece of scalpel blade) and location (throat, stifle region, udder cistern) of foreign bodies. The foreign bodies were reached to the animals by several routes including ingestion, during surgery (fractured blade during medial patellar desmotomy), during false management of some affections (plastic tube migrated to udder cistern) or displacement of normal structures (swallowed soft palate).

In agreement with Singh and Nigam (1981),

radiographic observation was advantageous to ascertain the site and the nature of the foreign bodies which either migrated or lodged in the various region. This means, radiography proved to be an essential diagnostic tool.

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