

Surgical Management of Ventral Abdominal Hernia in Bovines

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Abstract

One buffalo and four cattle were presented with large sized swelling at posterior to xiphoid, ventral side of abdomen close to naval and medial to thigh. Hernial ring was present and swelling was reducible in all animals. The animals were operated in lateral recumbency, after separation of hernial ring and hernial sac from the adhesions, hernial rings were repaired by herniorrhaphy. All animals recovered uneventfully.

Keywords: Abdomen; bovine; hernia; herniorrhaphy; ventral

Introduction

Congenital umbilical hernia, acquired abdominal and perineal hernia are common in ruminants (Krishnamurthy, 2008; Singh *et al.*, 2017; Bishnoi *et al.*, 2017). Ventral or lateral abdominal hernia is commonly seen along the costal arch, high or low in the flank, between the last few ribs or in the ventral abdominal wall. Predisposing factor of hernia is the trauma such as kick, horn thrust, violent contact with blunt objects or abscess in abdominal wall and increased intra-abdominal pressure may lead to weakening of abdominal muscle, resulting in herniation of abdominal contents subcutaneously (Krishnamurthy, 2008).

History and Observations

Five animals (one buffalo and 4 cattle) were presented with large sized swelling on the posterior to Xiphoid cartilage on right side in one cattle and buffalo, medial to thigh in one heifer and close to the naval in two cattle. On clinical examination, fluctuating and reducible swelling was present in all bovine (Fig. 1a and b). Buffalo had history of tympany. Hernial ring was felt easily, but it would feel only in dorsal recumbency because of heavy hernial sac contents. All clinical parameters were within normal range. Swelling was started in advance stage of pregnancy in buffalo, after horn gore and accidental injury in cattle. Swelling gradually increased in size and become bulky except in one cattle which had the swelling close to naval that was

presented immediately after injury. On the basis of reducible swelling and hernial ring, all animals were diagnosed with abdominal hernia.

Animals were kept off feed for two days and maintained on fluid therapy. All animals were restrained in lateral recumbency. Site was prepared aseptically, sedation with Xylazine hydrochloride at 0.01 mg/kg b. wt. and local infiltration of Lignocaine hydrochloride 2 percent. Elliptical incision was given directly on the swelling, blunt dissection was carried out, hernial ring and hernial sac which had the part of fore-stomach in two animals, intestines and omentum in another animals (Fig. 2a-c), were separated and freed from adhesions, hernial sac retracted back to abdominal cavity. Herniorrhaphy was undertaken in all cases using vest over pant technique for closing the rent by using nylon ribbon having 2 c.m. width (Fig. 3), overlapped edges were sutured by continuous pattern using Silk no. 2. Muscle layers, subcutaneous layer sutured by continuous pattern using chromic cat gut no. 2. Skin was sutured by silk no 2. Supportive bandage was wrapped around the abdomen to provide further support to abdomen while standing to reduce the risk of suture dehiscence and pressure on suture line in all the cases (Fig. 4) (Meek *et al.*, 1977). Post-operatively animals were given Inj. DNS 5 lit. b.i.d., Inj. Intamox^a (Amoxicillin and Cloxacillin) at 10 mg/kg I.M., Inj. Melonex^a (Meloxicam) at 0.3 mg/kg, Inj. B. Complex 10 ml for five days and antiseptic dressing until removal of skin sutures. Animals were given light feed for one week then they started feeding normally.

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Abdominal hernia



Fig.1a-d: Swelling on ventral abdomen



Fig. 2a-c: Part of fore stomach and intestine in peritoneal fold in hernial sac



Fig. 3: Repair of hernial ring with nylon ribbon



Fig. 4: Supportive bandage



Fig. 5: Complete healing was recorded after 12 days

Hernia can be divided according to the site into abdominal, umbilical, scrotal, inguinal, femoral, perineal and diaphragmatic or according to the etiology into congenital and acquired or clinically into reducible or irreducible (Fahd and Ahmed, 2007). For correction of hernia different non-surgical and surgical methods are used. Non surgical methods include pressure bandaging and application of some irritant chemicals around the hernial ring. Mondal and Dutta (2000) cured an abdominal hernia in a bullock having a size of about 5 cm by injecting absolute alcohol at the periphery of ring and pressure bandaging with the trush. In the present study, pressure bandage with cotton sheet was used for post-operative support of surgical site. Das *et al.* (2012) studied that the causes of ventral abdominal hernias are post-partum weakness and separation of muscle fibers following repeated

deliveries, history of trauma and following abscess. Surgical correction of ventral abdominal hernia which occurred after accidental fallen on peg, repaired by herniorrhaphy by Singh *et al.* (2003) which had the intestine and mesenteric fat in the hernial sac. Ventral abdominal hernia is very common type of hernia in ruminants with an incidence rate of 32.2 percent, which can be best cured by surgical manipulation. (Singh *et al.*, 1989). Females are affected due to weakness in abdominal wall following pregnancy and parturition (Noakes *et al.*, 2009; Jettennavar *et al.*, 2010).

Nylon ribbon is non absorbable but is good choice for closing the ring since it's having good tensile strength and encapsulated at the site. Absorbable sutures are the good choice to close the ring at the places, where hernial contents do not have the pressure on the suture line and also have been used successfully in bovine to repair the

hernial rings (Singh *et al.*, 2017). In present study, fibrosis was developed in all the cases at the site of incision (Fig. 5) which may be due to encapsulation of suture material, used to close the hernial ring and inflammation after surgery. In case of buffalo, mild impaction might be due to pressure on the reticulo-omasal orifice due to herniated part and accumulation of feed material inside the part of fore stomach.

In our study, all the animals recovered successfully and no post-operative complications were observed.

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AP-APCAR calls for addressing antibiotics in animal farming sector

Professionals around world gathered at Vijayawada, Andhra Pradesh to discuss and plan the implementation of Andhra Pradesh Action Plan for Containment of Antimicrobial Resistance (AP-APCAR). Andhra Pradesh is the 4th state in India after Kerala, Madhya Pradesh and Delhi for developing State Action Plan for Containment of Antimicrobial Resistance (AP-APCAR). The Government of Andhra Pradesh issued G.O. No.148 dated 27th June 2022 by the Principal Secretary, Health, Medical & Family Welfare Dept. approving Andhra Pradesh Action Plan for Containment Antimicrobial Resistance (APAPCAR) in the state.