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Congenital exomphalos and its surgical correction in Holstein Friesian calf

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Abstract

Omphalocele is a rare congenital disorder of improper closure of ventral abdominal wall. This may cause the evisceration of entire abdominal organs from the peritoneal cavity however coated by thin amniotic membrane rather than skin. This defect does not arise due to hereditary. A newborn Holstein Friesian calf had a protruding mass from the abdomen at the time of birth. Clinical examination and abdominal palpation revealed that the calf had a congenital abdominal wall defect commonly known as Omphalocele. Preliminary surgical procedures were followed as per the standard veterinary ethical protocol under field condition. The calf was administered with local anaesthetics and the protruded mass was carefully pushed inside to place them in situ in the peritoneal cavity. The defect was then corrected by herniorrhaphy. The animal was given necessary supplements and supportive care for speedy recovery. After contiguous effort, the animal showed uneventful recovery in ten days.

Keywords: Congenital, cross bred calf, herniorrhaphy, omphalocele, surgical management

Introduction

Congenital anomalies in livestock especially in ruminants play a pivotal role in the economic status of the farmers. In most of the time, these defects are not reported or underreported in veterinary field. True prevalence of these congenital diseases is not to be determined [1]. Exomphalos or omphalocele is displacement of organs partially or completely through a defect in the abdominal wall at the region of umbilicus with intact skin [3]. It is a congenital defect in the body wall in which eviscerated abdominal organs are covered by amnion rather than skin [2]. It is one form of developmental defect not necessarily heritable [6]. Developmental defects may be deadly, semi deadly or compatible with life causing aesthetic defects or having no impact on the animal [4]. Umbilical hernias are the most common birth defect in calves and much more common in the Holstein-Friesian breed. Majority of this condition occurs in females [5]. However, the omphalocele results in protrusion of liver and intestinal loops as a result of disruption in the development of lateral flaps and failure in the closure of the abdominal wall, around the third or fourth week of embryonic life. The present study describes about the lethal congenital omphalocele and its surgical correction within hours of birth thereby saving the life of the calf.

Case History

A calf was presented with a large mass protruding from the abdominal region from the time of birth. Physical examination revealed the partial absence of abdominal wall on ventral region including skin and major abdominal muscle layers. Abdominal organs and intestines were covered by a thin and delicate membrane (Fig.1). Muconium was voided out through the anus. The abdominal region was opened out to half feet length. The clinical parameters showed that the animal was in normal state. Based on physical examination and palpation it is concluded as congenital omphalocele.

Treatment and Discussion

The new born calf was kept in an inclined dorsal recumbency and the surgical site was prepared. Smear 5% povidone iodine solution aseptically over the abdominal region. Local anaesthesia was made around the surgical site by using of 2% Lignocaine Hydrochloride. The herniated mass was cleaned with normal saline solution to remove out the debris. With utmost care, the herniated mass was tucked in to the abdominal cavity by gentle pressure. Muscle

layers were opposed by horizontal mattress using chromic catgut 1.0. Skin was opposed by simple interrupted suture. The sutured area was sealed by compound benzoin. Entire abdomen was enclosed by bandage to avoid contamination. Antibiotics injection Streptopenicillin 2ml, Meloxicum 2ml and Pheneramine maleate 2ml were administered. After a day of surgical intervention the calf stood spontaneously (Fig.2) and started to suckle colostrum from its dam. Suture was removed on 14th day.

An omphalocele occurs when one of the four body folds fails to migrate normally during embryonic development. This condition is described as having the appearance of a hernia covered by a paper-thin membrane (amnion) rather than hair [1]. Unlike umbilical hernia, omphalocele is an emergency surgical condition of neonatal animals that requires immediate surgical intervention [6]. The prognosis of omphalocele is often poor if severe abdominal contamination and ischemic necrosis of the everted organs occurs [7]. This condition warrants emergency surgery to avoid further complications including death of the calf. Postoperative care was strictly followed for next 48 hours. Colostrum feeding was introduced slowly and uneventful recovery was noticed in 10 days.



Fig 1: Omphalocele - protrusion of abdominal organ covered by thin membrane



Fig 2: Calf after 24 hours of Surgery

Conclusion

The congenital defects are rather uncommon in dairy industry. Even though these events are obviously presented to naked eyes, certain defects cannot be corrected. In this case, the timely attention was given to Holstein Friesian heifer calf which showed complete recovery after herniorrhaphy. Hence, any correctable diseases should be intimated at the earliest to the nearby veterinarians so that the farmers may not have the economic loss.

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