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Popular Article

## A Management of Diaphragmatic Hernia in Buffaloes

**\*Panchabhai Chaudhary, Dhaval Rajgor, Ravindra Jadav and Birth Patel**

Assistant Professor, M.B.Veterinary College, Dungarpur, Rajasthan

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### Introduction

Diaphragmatic hernia (DH) is a serious thoraco-digestive disorder in which a part of abdominal viscera "mainly reticulum" passed into the thoracic cavity through a congenital or acquired opening in the diaphragm causing chronic ruminal tympany, anorexia and displacement of the heart. It is a chronic, wasting and inflammatory disorder in adult buffaloes. Buffaloes are more susceptible to DH than other ruminant species and this due to the anatomical differences of buffalo's diaphragm. A relatively small tendinous portion of the diaphragm resulting in innate weakness, making this species more prone to such condition. Lesser collagen content in diaphragm of buffaloes than cattle making it less elastic (Singh *et al.*, 2006). The incidence of DH is higher in buffaloes than in cattle. There are multifactorial causes behind these differences. The size of the abdomen, animal activity as buffaloes are more active than cattle. Buffaloes usually have a tendency for swimming, jumping which add an additional pressure over the diaphragm. Sharp foreign bodies are incriminated as the main cause of DH in buffalo. As it penetrates the diaphragm induce diaphragmatitis, weakness and diaphragmatic rupture which in turn, leads to herniation of abdominal viscera (mainly a segment of the reticulum, sometimes abomasum) into the thoracic cavity resulting in DH. Diaphragmatic hernia is a devastating problem as it causes a high economic loss especially when there is no either medical or surgical treatment for this condition.

### Etiology

Mainly occurs due to increased intra-abdominal pressure during advanced pregnancy or at the time of parturition, it may also occur as a result of trauma or progressive weakening of the diaphragm adjacent to a hardware perforation and violet fall.



**Diagnosis:** it includes following steps

**1) On the basis of history**

Anorexia, digestive disturbances in form of tympany, scanty feces with reduction of milk production. Animal with a past history of receiving various medical treatments with no response.

**2) Based on clinical signs and symptoms.**

Clinical findings of the examined animal include anorexic with a history of weight loss, decrease in milk production, ruminal atony and recurrent tympany, congested mucous membrane and engorgement of scleral blood vessels. In some cases, there is regurgitation of ingesta and bradycardia also seen.

**3) Radiological diagnosis**

The radiological examination for the diaphragmatic hernia can be performed using Large Animal X-ray machine. The radiological examination is performed in left standing position with forward stretched forelimbs in cases of diaphragmatic hernia.

**4) Ultrasonographical examination.**

The animal is subjected to lateral right or left for ultrasonographic examination of reticulo-thoracic region. The scanning of the reticulum in cases of DH in adult buffaloes will be performed at 5th intercostal space (Neeraj *et al.*, 2013).

**5) Blood Sampling and Biochemical Assay.**

Whole blood and serum samples are collected from animals by jugular vein puncture, blood is transferred into vacuum EDTA coated tubes "for hematological examination i.e Hb, PCV, TEC, TLC and serum by ELISA.

**Treatment**

Stabilization of the emergent patient, particularly if in respiratory distress, is the first priority. Oxygen supplementation, analgesia, and cardiovascular support (eg, intravenous fluids) should be provided first. Surgery to replace and repair the abdominal contents (ruptured diaphragm) is the preferred treatment. If the diaphragmatic tear is chronic, it is necessary to be especially careful with anesthesia, because re-expansion pulmonary edema is more likely. Exploratory laparo-rumenotomy is performed by giving a post-xiphoid semi lunar laparotomy incision.

**Conclusion**

DH is a common problem in buffaloes as compared to other ruminant species, thorough medical evaluation is needed before initiating surgical operation. Clinical signs and hemato-



biochemical findings are of great values; however, additional diagnostic aids are essential. Ultrasonography may be an accurate tool in the diagnosis of DH.

### References

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