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Popular Article

Dystocia in a Graded Murrah Buffalo due to Hydrocephalic fetus: A Case Report

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Introduction

Hydrocephalus is a condition characterized by the abnormal accumulation of cerebrospinal fluid (CSF), resulting from an imbalance between its production and drainage within the ventricular system or subarachnoid space. This condition leads to a distinctive enlargement of the cranium, causing deformities in the frontal, parietal, and temporal bones. Typically, hydrocephalus in fetuses either leads to demise before delivery or shortly after birth due to increased pressure on vital brain centers. Although instances of live fetal delivery in such cases are exceedingly rare, they have been recorded. While hydrocephalus is well-documented in cattle in India, it remains relatively uncommon in buffaloes. The origins of hydrocephalus are believed to stem from disturbances in the normal circulation of cerebrospinal fluid, which can result from alterations in its production or absorption. An autosomal recessive gene has been identified as a contributor to this condition, and its effects can be exacerbated by concurrent vitamin deficiencies. In some cases, hydrocephalus may coincide with various malformations affecting the mouth, eyes, or even the vertebral column. Infectious agents, nutritional factors, and various environmental elements are among the potential causes, in addition to genetic factors. The volume of accumulated fluid can vary significantly, ranging from 500 mL to as much as 8 liters. In instances where the fetus presents in a cranial position, an enlarged fetal head can be palpable within the birth canal, and a surgical incision on the cranium can facilitate a reduction in head size, enabling vaginal delivery. Although some reports mention cesarean section deliveries, there appears to be no specific breed or age predisposition for the occurrence of hydrocephalus in buffaloes.

Case History and Clinical Findings

A Graded Murrah buffalo, approximately 7.5 years old and in its third parity with a full-term pregnancy, was brought to the mobile ambulatory veterinary clinic in Tuni, Kakinada district, Andhra pradesh. The owner reported that the buffalo had been experiencing labor pains for the past 15 hours, but there had been no progress in the birthing process even after the rupture of the first water bag.

Upon obstetrical examination, it was observed that the cervix was fully dilated, and the fetus was positioned longitudinally with both forelimbs extended within the birth canal, and the head was laterally deviated. Further examination revealed significant swelling and tenderness of the skull, and it was noted that the head was slightly deviated to the left and obstructed at the level of the pelvic brim (Figure 1). Several other clinical parameters were assessed, including rectal temperature, pulse rate, and respiratory rate. The buffalo's temperature was elevated and recorded at 103ºF. The mucous membranes appeared pink, the size of the pre-scapular lymph nodes was normal, and the respiratory rate was decreased.

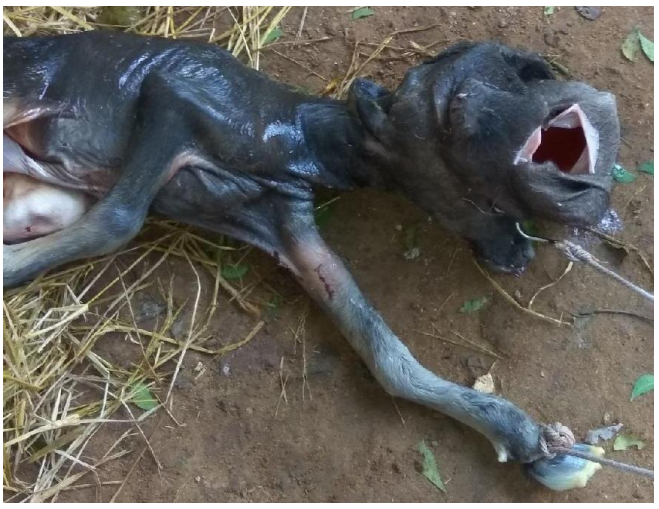

Figure 1: Hydrocephalic fetus

Diagnosis

Tentative diagnosis: Dystocia due to hydrocephalus

Treatment and management

To address the buffalo's condition, intravenous fluids containing Normal saline and Ringer's lactate were administered in sufficient quantities. Following this, caudal epidural anesthesia (5 ml; 2% lignocaine hydrochloride) was administered, and the birth canal was carefully lubricated using liquid paraffin. Subsequently, a small incision was made on the soft, fluctuating portion of the skull using a guarded knife. After the evacuation of fluid, the size of the fetal head was reduced, and with gentle manipulation, the position of the fetal head was corrected. The delivery of the fetus was facilitated by applying a hook to the inner canthus of the eye and securing both forelimbs with a chain, along with mild traction. Following the successful delivery of the fetus, the dam was examined per vaginally for any potential injuries resulting from the handling. The dam gave birth to a hydrocephalic male fetus weighing approximately 25 kg. The fetal head was collapsed, and the frontal, temporal, and partial bones were thin, perforated, and deformed. The ventricles of the head were distended with the accumulation of straw-colored excessive cerebrospinal fluid, totaling approximately two liters. To manage pain and prevent secondary bacterial infections, the buffalo received a five-day course of antibiotics (injection of Enrofloxacin 2g), along with anti-inflammatory (injection of Melonex 20 ml)

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and antihistamine (injection of Anistamin 10 ml) medications via intramuscular injection. The buffalo made an uneventful recovery within three days.This successful intervention and treatment effectively resolved the challenging case of dystocia resulting from fetal hydrocephalus in the buffalo.

Conclusion

In conclusion, managing cases of fetal hydrocephaly during per-vaginal delivery in buffaloes can present significant challenges. However, this report highlights that in select cases, performing a surgical incision on the enlarged fetal cranium to drain excess fluid can be a viable approach to reduce head size, ultimately enabling a successful vaginal delivery. This article has presented and discussed a notable case of dystocia resulting from fetal hydrocephalus in a buffalo.

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