

Dystocia in Murrah Buffalo Due to *Dicephalus Sternopagus Tetrabrachius Tetrapus* Fetal Monster - A Case Report

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How to cite this paper

Warghat, C., Dangi, P., Dwivedi, P., Biswas, N., Shrivastava, N., Kumar, B., & Mehrotra, S. (2025). **Dystocia in Murrah Buffalo Due to *Dicephalus Sternopagus Tetrabrachius Tetrapus* Fetal Monster - A Case Report.** *International Journal of Livestock Research*, 15 (1), 41-44.

Received : Nov 19, 2024
Accepted : Jan 18, 2025
Published : Jan 31, 2025

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Abstract

*A seven-year-old, pluriparous (fourth parity) Murrah buffalo with an anamnesis of full-term gestation and straining was reported to the 'Referral Veterinary Polyclinic' ICAR-Indian Veterinary Research Institute, Izatnagar. At the time of presentation, four limbs were visible outside the vulva, and fetal membranes were hanging from the vagina. Per vaginal examination of the dam revealed all limbs as forelimbs. The case was suspected of being a monster. After properly stabilizing the buffalo, it was cast and positioned on the right side. Thereafter, by using Roberts' concealed knives, a partial subcutaneous fetotomy was performed. The monster was delivered vaginally using obstetrical instruments and manual traction. The gross examination of the fetus revealed that it was a case of conjoined twins, i.e., a *dicephalus sternopagus tetrabrachius tetrapus* 'tetrapus' fetal monster. The buffalo was treated with antibiotics and analgesic medication for five days. The dam was recovered with no complications.*

Keywords: Buffalo, Conjoined Twin Monster, Partial Subcutaneous Fetotomy, Robert Concealed Knives.

Introduction

Fetal monsters, also referred to as developmental abnormalities or congenital anomalies, are among the most common causes of dystocia in bovines (Shukla *et al.*, 2007). Fetal monsters, which are more common in pigs and ruminants, are defined by the duplication of either or both anterior or posterior portions of the embryonic body part (Pandey *et al.*, 2017). However, anterior duplication is more frequently seen in pigs and ruminants. It occurs in roughly one out of every 100,000 births in bovines (Arthur, 1956). It has been noticed that conjoined twins are monozygotic and develop from a single ovum (Bhoi, 2009). Conjoined twins are developed when incomplete separation happens 8 days after the embryonic plate begins to grow. Dystocia due to ‘conjoined twin monsters’ is infrequent in cows (Hannappagol *et al.*, 2005).

The exact aetiological agents for conjoined twins are unknown. Researchers have suggested that this may be due to environmental, genetic, or both factors. A typical treatment for such cases in bovines is usually a caesarean section. However, in this particular case, a three-way coordinated traction with a partial subcutaneous fetotomy technique was used for delivering the conjoined twin monster in a Murrah buffalo. This monster was classified as “Dicephalus Sternopagus Tetrabrachius Tetrapus” as per the characteristics defined by Roberts (Roberts, 2004).

Case History and Observations

The "Referral Veterinary Polyclinic" (OPD No. 01 Case No. G-476) ICAR-IVRI Izatnagar received an emergency case of dystocia at late night (1:10 am) in a seven-year-old, pluriparous (fourth parity), Murrah buffalo with an anamnesis of full-term gestation and straining since the last seven hours. The local veterinarian had initially attempted for three hours to relieve the dystocia in the buffalo but was unsuccessful. The animal appeared dull, and inactive, following which we realized that an emergency intervention was necessary. Upon inspection, four limbs were visible from outside the vulva without any progress in parturition, and the fetal membranes were hanging from the vagina. Per vaginal examination revealed that all limbs were forelimbs. Further exploration by repulsion and manual manipulation confirmed the presence of two heads, leading to suspicion of a conjoined twin monster.



Fig. 1: Conjoined Twin Monster

Treatment and Discussion

Stabilization of the buffalo was done with three litres of normal saline, and two litres of Ringer’s lactate (intravenous), and was cast and positioned on right lateral recumbency. Low epidural anesthesia was induced with 2 % lignocaine hydrochloride (5 ml) to avoid straining. The birth canal was properly lubricated with carboxymethyl

cellulose (CMC). The obstetrical instruments like Roberts concealed knives, Lindhorst long handle eye hook and obstetrical chain were immersed in potassium permanganate (KMnO₄) solution for asepsis. A subcutaneous fetotomy was performed by using Roberts concealed knives to remove the foreleg of the first fetus from the attachment of the scapula to the thoracic region (muscular-cartilaginous joint), successfully removing one foreleg. At the time of removing the second foreleg of the same fetus, an obstetrical chain was fixed on the two forelimbs of another fetus, and one Lindhorst long-handled eye hook was inserted at the inner corner (medial canthus) of one eye of the same fetus. With the obstetrician's hand, the fetal head was aligned and then three-point traction was applied and the fetus was extracted (Fig.1). After the obstetrical intervention, postoperative treatment given to buffalo consisted of an antibiotic (Enrofloxacin at 5mg/kg body weight intramuscularly) and NSAIDs (Meloxicam at 0.5 mg/kg body weight intramuscularly). Inj. Revici (*ingredient to be given intramuscularly*) was given to the animal to arrest bleeding. Supportive therapy was provided with 25% calcium magnesium borogluconate injection (450 ml, as slow intravenous). The owner was advised to repeat the treatment for five days. After up to five days of follow-up, the animal appeared to be reverting to its normal physiological state.

Conjoined twins are teratologic disorders that are not usually inherited. In addition, the buffalo had produced three healthy calves in the previous three calvings. Dystocia due to conjoined twin monsters had already been documented in Buffalo which was relieved by fetotomy (Gawai *et al.*, 2024), per vaginally (Yadav *et al.*, 2024) and in cow (Singh *et al.*, 2011). Researchers have suggested that this condition may be due to environmental, genetic, or both factors. Toxic plants, infectious diseases, medications, and deficiencies in trace elements are examples of environmental influences, as well as physical factors including radiation, heat exhaustion, and embryo manipulation may cause the condition.

In the present case, fetuses were attached to the sternum in the thoracic region, with their free heads facing each other with separate nostrils, eyes and ears. They had separate heads, necks and limbs. The research suggests that caesarean sections have mostly been performed to treat such cases of dystocia (Monfared *et al.*, 2013), which is cumbersome in field conditions. However, delivery of the conjoined twin monster by fetotomy is rare and inadequately recorded in Buffalo. In this case, a partial subcutaneous fetotomy was effectively used to treat the dystocia caused by the conjoined twin monster instead of a caesarean section. Therefore, this case report will assist field veterinarians dealing with cases of dystocia caused by a conjoined twin monster in the field situation to effectively resolve the case by fetotomy.

Conclusions

The present case was diagnosed as a conjoined twin monster, which was successfully managed with partial subcutaneous fetotomy and antibiotic therapy. The dam was recovered with no complications.

Acknowledgement

The Director of the Indian Veterinary **Research** Institute (IVRI), Izatnagar, the head of the Division of Animal Reproduction, and in charge of the Referral Veterinary Polyclinic, have been acknowledged by the authors for providing the facilities needed at the polyclinic for the treatment of animals.

Contribution by Authors

Each co-author contributes equally.

Conflict of Interests

There is no conflict of interest.

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