

*DICEPHALUS DERODYMUS THORACO-STERNOPAGUS TETRABRACHIUS DIPUS
DICAUDATUS* FETAL MONSTER IN A RIVERINE BUFFALO: A CASE REPORT

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ABSTRACT

A graded buffalo in 3rd parity was presented with dystocia, relief attempted previously at field level. The visual examination revealed presence of two tails and two limbs of the fetus protruding from the birth canal. The gynaecological examination revealed that the fetus in posterior longitudinal presentation with some anatomical deformities. Since the impacted fetus could not be extracted out by traction, partial fetotomy was method of choice to relieve the condition. After a successful fetotomy procedure, a fetal monster with characteristic *dicephalus derodymus thoraco-sternopagus tetrabrachius dipus dicaudatus* was extracted out *per vaginum*. This report presents the rare fetal monsterity in the buffalo.

Keywords: *Bubalus bubalis*, buffaloes, monster, dicephalus, thoraco-sternopagus, tetrabrachius, derodymus

INTRODUCTION

Dystocia in the dairy animals is responsible for unpredictable economic losses in the terms of calf morbidity and mortality (Bichalo *et al.*, 2007),

impaired fertility with decreased milk production, veterinarian cost and dam mortality (Berry *et al.*, 2007). The cause of dystocia can be of maternal as well as of fetal origin where fetal causes in the buffalo are considered to be of more occurrences (Phogat *et al.*, 1992). The genetic as well as non-genetic abnormalities involving an organ or a part of the organ is termed as anomaly while the extensive deformity or malformation involving multiple body organs is known as fetal monster. The abnormal or teratologic development or arrest in the development of the ovum, embryo or the fetus can result in the fetal death or monstrosity (Roberts, 1971). The incidence of fetal monstrosities among the fetal causes of dystocia in buffalo ranges from 7.9 to 12.8% (Singla and Sharma, 1992). Among the fetal monsters in buffaloes, the conjoined twins with duplication of different body organs have been reported where partial duplication of part of body or even almost complete formation of two fetuses can occur (Sinowitz, 2011). These defects are usually observed at the time of calving when presented as a cause of dystocia. Fetotomy and caesarean section are the obstetrical methods used for correction of anomalies and the delivery of the fetus. It has been observed that the animal undergone caesarean section had low survival rate (45.11%) as compared to those with/without partial

fetotomy (Singh *et al.*, 2013a). The present report highlights the rare monstrosity in the riverine buffalo and use of partial fetotomy for *per vaginum* delivery of the fetus.

HISTORY AND CLINICAL OBSERVATION

A Murrah graded riverine buffalo in 3rd parity was presented to the Referral Veterinary Polyclinic (RVP) of the institute with history of full-term gestation period, initiation of parturition with rupture of water bag around 12 h ago, and failure of delivery of the calf. The relief of the condition was attempted at the field level, with limited traction leading to presentation of two limbs and two tails just outside the birth canal which reflected the abnormal presentation of the fetus. The gynaecological examination of the animal revealed that fetus was in posterior longitudinal presentation with two hind limbs extended into the birth canal along with two tails. The presence of two tails was indicative of some anatomical fetal deformities. Following deep intrauterine examination, dystocia condition was indicative of abnormal joining of two fetal heads at a bulged point at thorax region. It was confirmed as a case of fetal monstrosity.

OBSTETRICAL MANAGEMENT AND TREATMENT

Since possibility to extract out the fetal monster by traction was negligible, fetotomy was considered as a resort for *per vaginal* delivery of the fetus. The epidural anesthesia was given to the dam at sacro-coccygeal space with 6 mL of 2%

lignocaine to prevent excessive straining. The dam was laid in lateral recumbency and Thygeson's fetotome with obstetrical wire was fixed in the pelvis of the fetus for bisection of the pelvis. After the first cut at the pelvis and cutting of one hind limb mild traction was applied but it was not possible to extract out the fetus. Then, the fetotome wire was fixed at one of the palpable fetal forelimb hindering the delivery and it was cut. After the fetotomy of two limbs the space was created in the birth canal and the bulged thorax was punctured resulting in evacuation of the large quantity of watery fluid which depicted fetal hydrothorax. Following this procedure, the obstetrical snare was fixed at the thorax region and fetal was extracted out per vaginally.

After, the delivery of the monster the dam was given necessary treatment which consisted of fluid therapy with 2 litre normal saline (NS), 2 litre dextrose normal saline (DNS), 2 litre of ringer's lactate solution (RL) intravenously (IV) with 450 mL of pre-warmed calcium magnesium borogluconate (Mifex-Novartis, India) by slow IV. The broad spectrum antimicrobial ceftriaxone-tazobactam (Intaceff-tazo-Intas, India) 4.5 gm intramuscular (IM), analgesic meloxicam (Melonex-Intas, India) 0.5 mg/kg b.wt. IM, anti-histamine pheniramine maleate (Avilinet-MSD Animal health, India) 1 mg/kg b.wt. IM and dexamethasone (Dexona-Zydus, India) 40 mg IM were administered to the buffalo. Four boli of intrauterine antiseptic (Cleanex-Dosch, India) were put in-utero and oral uterine cleanser (Uterotone-Cattle remedies, India) was advised 100 mL orally twice daily for five days. The buffalo was discharged after 2 h of the treatment.



Figure 1. The buffalo presented with two limbs and two tails outside the vulva indicating dystocia.



Figure 2. Dicephalus derodymus thoraco-sternopagus tetrabrachius dipus dicaudatus fetal monster with two trachea, two hearts and two pair of lungs.

DESCRIPTION OF THE MONSTER

In the present case, the fetal monster had two separate heads (*dicephalus*) with each containing two eyes and two ears. There were two separate necks (*derodymus*) joined at the thorax and sternum region (*thoraco-sternopagus*). The thorax contained large quantity of fluid (Hydrothorax) and the organs in the thoracic cavity were in duplicate with two pair of lungs, two hearts, two separate tracheas and two oesophagus. There were total of four forelimbs (*tetrabrachius*) but the hind limbs were two (*dipus*) in number. The vertebral column of the monster was double ending with two separate tails (*dicaudatus*) but the abdominal organs were single. Thus, it was described to be a *dicephalus derodymus thoraco-steropagus tetrabrachius dipus dicaudatus* fetal monster.

DISCUSSION

The fetal monstrosities are rarely observed in the buffalo where fetotomy offers a good alternative to caesarean section for delivery of the monster *per vaginum*. This procedure offers increased survival rate with better future reproductive potential (Vermunt, 2009). The conjoined twin monsters in buffaloes with duplication of different body parts have been reported by several workers but the reports about the use of fetotomy and *per vaginum* delivery are meager. The caesarean section was done for extraction of dicephalus monsters in buffalo with varying duplication of other body parts (Bhoi, 2009; Pandey *et al.*, 2012; Singh *et al.*, 2013b; Katiyar *et al.*, 2017; Singh *et al.*, 2018a). Pandey *et al.* (2013) reported two cases of *atlodymus dicephalus* fetal monsters in buffalo in which

one was corrected by fetotomy and another by caesarean section. The partial fetotomy was opted as a resort for *per vaginum* delivery of *dicephalus derodymus* (Dutt *et al.*, 2018; Singh *et al.*, 2018b); *iniodymys thoracopagus tetrabrachius tetrapus* (Pandey *et al.*, 2017); *dicephalus thoracopagus tetrabrachius tetrapus dicaudatus* (Dholpuria *et al.*, 2016; Srivastava *et al.*, 2018); *dicephalus dibrachius dipus dicaudatus* (Singh *et al.*, 2017); *dicephalus sternopagus tetrabrachius tetrapus dicaudatus* (Saini *et al.*, 2017) and *dicephalus* (Singh *et al.*, 2018c) fetal monsters in buffalo.

CONCLUSION

The clinical case of the fetal monster *dicephalus derodymus thoraco-sternopagus tetrabrachius dipus dicaudatus* is a rare occurrence in the buffaloes which can be relieved successfully by partial fetotomy without resorting to the caesarean section. The fetotomy procedure under such dystocia conditions can be a method of choice which has added advantage of being comparatively economical with better post survival rate of the dam.

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