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Successful management of 'Dicephalus Omphalo-Ischiopagus Tetrabrachius Tripus' fetal monster: A rare case report

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Abstract

A seven-year-old, pluriparous (3rd parity) Murrah buffalo with an anamnesis of full-term gestation and straining since 8 hrs was reported to the 'Referral Veterinary Polyclinic' ICAR-Indian Veterinary Research Institute, Izatnagar. Per vaginal examination of the dam disclosed the presence of two heads and more than two forelimbs indicating presence of a monster or twin. A monster was extracted by mutation and forceful traction pervaginally without fetotomy. The visual examination of fetus revealed that it was a case of conjoined twins called 'Dicephalus Omphalo-Ischiopagus Tetrabrachius Tripus' fetal monster. The buffalo was treated with antibiotics, analgesic and supportive therapy for three days. Various reports have mentioned fetal anomalies in cattle but are less frequently reported in buffaloes with very rare occurrence of present one. Dystocia caused by 'conjoined twin monster' in buffalo is explained in this case report.

Keywords: Buffalo, dystocia, conjoint twin monster, Omphalo-Ischiopagus, per-vaginal delivery

Introduction

In domestic animals, the congenital defect involves only an organ or part of the body, called an anomaly; if extensive, known as monster (Robert, 1971) [9]. One such monster is Conjoined Twins, occurring rarely as one in one lac normal births in bovines (Arthur 1956) [1]. Depending upon the conjoined part of the body, the types of twins may differ like, thoracopagus (40%), omphalopagus (33%), pygopagus (18%), cephalopagus (2%) and ischiopagus (2%) (Fernando, 1993) [3]. It has been recorded that conjoined twins are monozygotic and originate from single ovum (Bhoi, 2009) [2]. It is thought that some factors are responsible for the failure of twins to separate after the 13th day of fertilization (Srivastava *et al.*, 2008) [11] resulting in conjoined twins. Such monsters may be fused medially in certain parts of the body but the cranial fusion is noted to be the most common of all (Robert, 2004) [8].

The exact etiological agents for conjoined twins are unknown. Researchers have suggested that this may be due to environmental, genetic, or both factors. If a similar defect appears quite frequently in related individuals, a genetic cause is suspected. The non-genetic causes include various environmental factors or agents called teratogens like nutritional deficiencies, hormone disturbance, certain drugs or chemicals, radiation, and infection. The period of high susceptibility to teratogenesis in early differentiation of embryo, rather than ovum, zygote, or fetus stage (Roberts, 2004) [8]. The present report describes relieving of dystocia due to a conjoined twin monster in a Murrah buffalo by mutation and forced traction pervaginally without fetotomy.

Case history and clinical observations

A case of dystocia was brought to the 'Referral Veterinary Polyclinic' (ICAR-IVRI) Izatnagar. A seven-year-old, pluriparous, Murrah buffalo in her 3rd parity with a history of full-term gestation and unable to deliver since 8 hrs of straining. The water bag had already ruptured when the animal was brought in the polyclinic. On inspection, the animal appeared active with rectal temperature as 100.2°F.

After lubrication with liquid paraffin pervaginal examination was carried out revealing complete dilation of the cervix. Further exploration by repulsion and manual manipulation confirmed the presence of two heads and more than two forelimbs, leading to suspicion of a conjoined twin monster.

Treatment and Discussion

Low epidural anesthesia was induced with 2% lignocaine hydrochloride (5 ml) to avoid straining. The birth canal was properly lubricated with liquid paraffin. Animal was casted and positioned on right lateral recumbency. The obstetrical instruments like Lindhorst long handle eye hook and obstetrical chain were disinfected with the help of KMnO₄ solution. Repulsion was done to make space inside the uterus. The head of one fetus was aligned with the help of the obstetrician's hands. Lindhorst's long-handle eye hook was placed in the inner canthus of both eyes then traction was applied and the head was pulled out of the cervix. Similarly, two forelegs of the fetus were pulled out with the help of the obstetrician's hands and obstetrical snares. During traction, a conjoined part of fetus was obstructed in the pelvic cavity which was corrected manually and the intact conjoined fetal monster was extracted per-vaginally (Figure 1). The rare monster was identified as 'Dicephalus Omphalo-Ischiopagus Tetrabrachius Tripus' (Roberts, 2004) [8]. After the obstetrical intervention, postoperative treatment given to buffalo consisted of an antibiotic ceftiofur (@ 1.1 mg/kg body weight intramuscularly), NSAIDs (Meloxicam @ 0.5 mg/kg body weight intramuscularly), and oxytocin (50 IU intravenous). Supportive therapy was provided with 4L of dextrose normal saline, 3L of normal saline, and 25% calcium magnesium borogluconate injection (450 ml, as slow intravenous). The owner was advised to repeat the treatment for three days. An uneventful recovery was noticed.

Conjoined twins are teratologic disorders that are not usually inherited (Shukla *et al.*, 2011) [10]. Dystocia due to conjoined twin monsters had already been documented in Buffalo (Kumar *et al.*, 2014; Prasad *et al.*, 2015) [5, 7] and in cow. In the present case, fetuses were fused at abdomen region and pelvic region, with their free heads opposite each other. On postmortem examination, the conjoined twin monster was found have two hearts (dicardium) in two separate pericardial sacs, (Figure 2) a pair of lungs, one gastrointestinal tract with one liver, and one pair of kidneys (Figure 3). The research suggests that caesarean sections have mostly been performed to treat such cases of dystocia (Monfared *et al.*, 2013) [6]. However, in this case, a conjoined twin monster was delivered by mutation and forced traction without pervaginally fetotomy or caesarean section.



Fig 1: Conjoint twin monster: Dicephalus Omphalo-Ischiopagus Tetrabrachius Tripus



Fig 2: Two hearts with separate pericardium

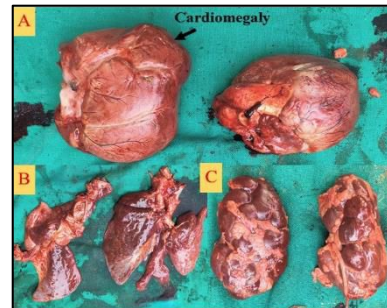


Fig 3: A) Heart having cardiomegaly B) Partially developed lung (left) C) Pair of kidney

Conclusion

Dystocia Caused by a monster is mainly relieved by fetotomy or cesarean section. But, this unique case was successfully managed through mutation and traction, avoiding fetotomy or caesarean section. The successful management of such cases highlights an alternative approach to a caesarean section in field conditions.

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Conflict of interest

No conflict of interest to declare.

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