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DIPLOPAGUS STERNO-OMPHALOPAGUS DICEPHALUS TETRABRACHIUS TETRAPUS DICAUDATUS CONJOINED TWIN MONSTER IN A BUFFALO: A CASE REPORT

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ABSTRACT

A rare case of conjoined foetal monster twin was delivered successfully by Caesarean section in a pluriparous buffalo which was presented with dystocia. The monster consists of two female foetuses of symmetrical twins (Diplopagus) with double head (Dicephalus), which were fully developed having four forelimbs (Tetrabrachius) and four hind limbs (Tetrapus), joined together from sternum to umbilical region and two separate pelvises with two individual tails (Dicaudatus). The monster can be classified as diplopagus sterno-omphalopagus.

Keywords: *Bubalus bubalis*, buffaloes, BuSiamese twins, Sterno-omphalopagus, monozygotic twins

INTRODUCTION

Structural or numerical duplication due to embryonic developmental abnormality might lead to partial or incompletely fused foetus referred as conjoined twins (Roberts, 1971). A conjoined monster is a condition in which multiple anomalies including many organs and systems of the body and very often these monstrosities end up with dystocia. Various fetal monsters have been reported in cattle but only meagre report in buffaloes. For delivery of conjoined twin monster usually carried out by cesarean section (Whitlock *et al*., 2008). The fundamental cause of conjoined twin monster could be due to incomplete separation of embryonic streak at 8th day of gestation. Depending upon the site of fusion or non-separation, the types of the twins may differ. Anterior duplication is more often seen in ruminants and swine among occurring varying degrees of fusion (Arthur, 1956). Jerome *et al*. (2010) reported its occurrence to be about one in 100,000 bovines' births. Monsters consisting of two fetuses or more joined together are common in cow and buffalo (Shukala *et al*., 2007). Conjoined twins are monozygotic arising from a single ovum. The present case study describes a rare case of dystocia in buffalo due to diplopagus sterno-omphalopagus monster twin which was relieved through an emergency caesarean section.

CASE HISTORY AND OBSERVATIONS

A graded she buffalo at third calving with difficulty in parturition despite persistent straining

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for the past 12 h with four foetal limbs at *rima vulvae* was presented to the Large Animal Obstetrics Unit, Madras Veterinary College Teaching Hospital. A detailed clinical examination was carried out and the vital parameters like temperature, heart rate and respiratory rate were 38.9ºC, 120 beats/minute and 80 cycles/minute, respectively. The conjunctival mucous membrane was pinkish and moist and the buffalo was in lateral recumbency. Following epidural anaesthesia and lubrication, per-vaginal examination revealed that the cervix was fully dilated and the fetus was in posterior longitudinal presentation (P1), right dorso-ilial position (P2) and extended hind limbs (P3). Preliminary vaginal examination revealed four extended hind limbs in the vaginal passage and further careful deep exploration revealed the presence of two fetuses which were conjoined. Hence, the case was diagnosed as dystocia due to conjoined twin monster based on the vaginal examination.

TREATMENTS AND DISCUSSION

An attempt to deliver the twin monster through per-vaginum was failed. Hence, elective C-section was performed as per standard procedure. Following epidural anesthesia by using 2% lignocaine hydrochloride with local infiltration, C-section was performed in right lateral recumbency by oblique paramedian approach. A dead conjoined monozygotic female twin joined at ventral thoracic (sternopagus) and umbilicus (Omphalopagus) was relieved by laparohysterotomy. The surgical wound was sutured in routine fashion using PGA No.2 for uterus and peritoneum, and No. 2 for muscle layers. Antibiotic coverage and fluid therapy were followed for five days and the dam had an uneventful recovery.

Gross examination of twin monster foetus revealed duplication of head, face, loin, forelimbs, hind limbs and tail, and regarded as "Diplopagus Dicephalus Tetrabrachius Tetrapus Dicaudatus" siamese twin as per the classification of Roberts (1971) in which partial duplication occurs at both anterior and posterior ends. The foetuses were joined together from sternum to umbilicus and had two normal heads facing each other with separate nostrils, eyes and ears. These confirmed the fetus to be of dicephalus, distomus, tetraopthalmus, tetraotus, tetrabrachius, tetrapus and dicaudatus conjoined sterno-omphalopagus twin monster (Figure 1). On postmortem examination, the conjoined twin monster was found to be attached from sternum to umbilicus which had two hearts (dicardium) in a single pericardial sac with one small heart, a pair of lungs, one sternum, two gastro-intestinal tracts with one liver and one pair of kidneys.

The etiology may be of any number of factors, including genetic, environmental and infectious agent and is responsible for the failure of twins to separate after the 13th day of fertilization. These developmental defects leading to anomalies or monstrosities often result into dystocia. About 1.78% of dystocic deliveries from fetal causes are due to fetal malformations (Purohit *et al*., 2012).

Calves produced by assisted reproductive techniques like IVF and ICSI may also a factor for conjoined twins (Romero *et al*., 1988). However, such twins are usually due to non-inherited defects and often lead to severe dystocia (Roberts, 2004). It is concluded that the twin monster would be identified at early stage by using ultrasonography and pregnancy may be terminated to avoid the dystocia and other complications.

Figure 1. Conjoined twin monster (Diplopagus sterno-omphalopagus).

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