Case Report

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Dystocia due to Breech Presentation of Dicephalus Tetrabrachius Dipus Ischiopagus and Dicaudatus Monster in Buffalo: A Case Report

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ABSTRACT

A rare case of conjoined twin monsters (Dicephalus tetrabrachius, Dipus ischiopagus, and Dicaudatus) was in breech presentation, delivered per vaginum in a pluriparous Murrah buffalo. The twin monster consists of two male fetuses, each possessing separate sets of structures, including two heads, two pairs of forelimbs connected to the ischial region, one pair of hindlimbs, and two tails.

Introduction

Monstrosity is a disturbance of development that involves various organs and systems, which can cause great distortion of the individual (Vegad, 2007). The majority of anomalies arise during the initial stage of cell differentiation, when the conceptus encounters genetic and maternal influences. The embryonic disk starts to differentiate on the 13th day of conception. If the split occurs after day 13, then the twins will share body parts in addition to sharing their chorion and amnion (Finberg, 1994). Varying degrees of fusion occur; duplication of the cranial part of the fetus is more common than the caudal parts in ruminants and swine (Arthur et al., 2001). Congenital defects are anomalies of structure or function that are present at birth; they can impact an individual structure or function, an entire system, many systems, or both a structure and a function (Marrow, 1980). Separate anterior duplication was present and caused dystocia in buffaloes (Singh et al., 2013; Gangwar et al., 2015; Dholpuria et al., 2016). The duplications may arise during the primitive streak elongation or regression (Noden and Lahunta, 1984). Conjoined twins develop after the development of an embryonic plate (Whitlock et al., 2008). The type of twins can vary based on where they are joined or fail to separate, such as thoracopagus (40%), omphalopagus (33%), pyopagus (18%), cephalopagus (2%), and ischiopagus (2%). Monstrosities are common in the buffalo (Purohit et al., 2011). Dystocia due to monsters is usually relieved by cesarean section since fetotomy is of limited usefulness except in a few monsters (Singh et al., 2013). Monsters may have trouble passing through the birth canal due to their size or shape.

This report describes an unusual case of difficulty in giving birth caused by a conjoined twin (Dicephalus Tetrabrachius Diapus Ischiopagus and Dicaudatus), which was delivered through the vagina in a female buffalo.

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Case history and clinical observations

A full-term Murrah buffalo about eight and a half years old in her third parity with dystocia was brought to the Department of Veterinary Gynecology Obstetrics, RAJUVAS, Bikaner. It had a history of straining for the previous 6 to 8 h but had been unable to deliver the fetus. The gestation period was completed, and water bags had already ruptured. Local para-veterinary staff successfully managed the case. The animal was alert and was in excellent body condition with a rectal temperature of 101.3°F. The vaginal mucous membrane was congested and edematous with negligible lubrication. On gynecological examination after proper lubrication, it was revealed that the cervix was fully dilated and the fetus was found in the posterior presentation, approximately in the dorsoiliac position on both sides (right and left), and two tails with conjugated pelvis were palpated in the birth canal (breech presentation). After further detailed examination, two hind limbs of the fetus were palpated below the body. Thereafter, one hind limb of the fetus was pulled at the tibial region, posteriorly, and the hoof was grasped with a palm and taken out from the pelvic cavity to the vagina. The same procedure was applied to another hind limb, and then both limbs came into the pelvic cavity. We tied the rope in both hind legs separately and applied traction smoothly but didn't find any improvement. Then, once again, they examined the fetus and found another limb below the abdomen that was a forelimb, pushed laterally. After that we again apply zigzag forced traction on both hind limbs with proper lubrication (with two heads, four forelimbs, two hind legs, and two tails). Thereafter, routine postoperative care of the animal was carried out with antibiotics, analgesics, and fluid therapy, along with economics, for five days. We expelled the placenta after 6 h.

Morphological and anatomical description

Detailed morphological examination of the fetuses revealed that they had double heads, double trunks, four forelimbs, double thoraxes, two hind limbs, and two tails, but they were conjoined from the ischial region (Fig. 1A). Development of male conjoined twins was nearly complete. The twin possessed a separate set of structures, a double head and neck (dinocephalic), with normal eyes and ears. The twins, fused in their ischial regions (Ischiopagus), had four front legs (Tetrabrachius), two hind legs (Dipus), and two separate tails (Dicaudatus). The condition could be classified as a dicephalus tetrabrachius diapus ischiopagus and dicaudatus twin monster. The monster weighed 39.3 kg.

On anatomical examination, the conjoined fetus had four well-developed forelimbs and two hind limbs. Both fetuses had separate thoracic cavities and separate pharynxes and larynxes and separate tracheas for each lung, but one fetus had a less developed organ than the other. In the digestive system, one fetus had an ill-developed single liver, stomach, and intestine, and the other was normal. The separate diaphragm was present for both fetuses, but one is ill-developed. Each conjoined fetus had a common abdominal cavity with separate vertebral columns up to the coccygeal vertebrae, but the sacrum was fused with each other (Fig. 1B). The genital tract was unable to trace completely, but two well-developed scrotums with a single penis were found. The urinary tract was symmetrically divided, but a single pair of kidneys was found. Only anus marking was present (atresia ani) (Fig. 1C). The distance between markings was 5 cm.

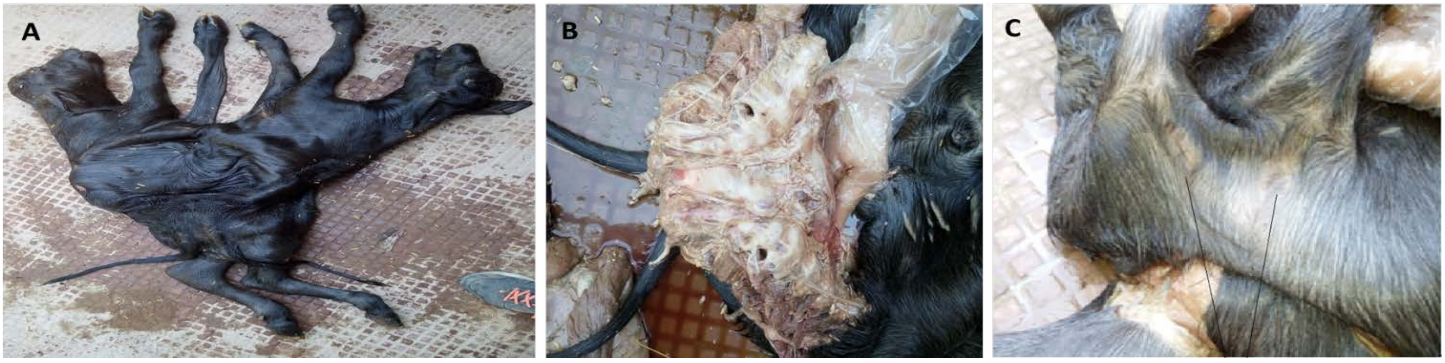

Fig. 1 Dicephalus Tetrabrachius Dipus Ischiopagus and Dicaudatus Monster (A), Detached sacral bone (B), and Atresia ani condition (C).

Discussion

Dicephalus monsters have been reported in buffaloes (Chauhan and Verma 1995; Raju et al. 2000; Bugalia et al. 2001; Srivastva et al. 2008; Gangwar et al. 2015; Dholpuria et al. 2016) and cows (Patil et al. 2004). An approximately similar type of monster was reported by Kumar et al. (1999), Jerome et al. (2010), Singh et al. (2013), Gangwar et al. (2015), and Dholpuria et al. (2016) as having duplication of body parts.

Dystocia due to a dicephalus thoraco-sternopagus Siamese monster (Sahu and Pandit, 1999) and a conjoined twin monster (Selvaraju et al., 2002; Kumar et al., 2018) have been reported as rare cases in buffaloes. A thoraco-sternopagus twin arises due to embryonic duplication of a germinal area whose body structure is partially but not completely duplicated (Robert, 2004). Dystocia due to conjoined twin monsters was common in previous studies (Singh et al., 2013; Gangwar et al., 2015; Dholpuria et al., 2016).

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