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Surgical delivery of Dicephalic monster in Banni buffalo

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Abstract
A Banni buffalo in her fifth parity at full term with the history of water bags had ruptured ten hours ago and animal was continuously straining with unsuccessful attempts to deliver the fetus. Per vaginal examination revealed dilated cervix and dead fetus having two fused heads. Emergency caesarean section was performed to relive the dystocia due to Dicephalic monster. Dam recovered without any post-partum complication.

Keywords: Caesarean section, Banni buffalo, Dystocia, Dicephalic monster, Fifth parity

Introduction
Fetal malformation, anomaly and monstrosities are common causes of dystocia in bovines. Anomalies which occur due to congenital defects often lead to dystocia. An increased number of still birth, maternal injury and calf mortality are some of the severe consequences associated with dystocia which lead to economic losses (Mollalign and Nibret, 2016) [6]. Fetuses with congenital defects are dead usually but sometimes die within hours or few minutes after birth. Congenital defects may lead to dystocia as it is difficult for monsters to pass through the birth canal because of feto-maternal disproportion. Dystocia due to monsters is usually relieved by caesarean section since fetotomy cannot be applied for each and every monster and it has its limitations (Purohit *et al*., 2012) [7]. Polycephaly is a congenital malformation in which an individual with two (dicephaly) or more heads occur probably due to partial or total union of two developing embryos or to a partial duplication of a body or to the antero-posterior compression of the embryonic disk (El-Sheikh *et al*., 2010) [2]. Duplication of cranial part of the fetus is more common than of the caudal parts (Gangwar *et al*., 2015) [3]. The increase in relative size of fetus due to dicephalus monster result in dystocia as it is very difficult to pass through birth canal. The present case study reports a case of dystocia which was relieved by caesarean section.

Case History and Observations
A Banni buffalo in fifth parity having dystocia at full term of gestation was found in field at Budha village of Lakhapat taluka, Kutch. According to history, water bags had ruptured ten hours ago and animal was continuously straining. The delivery attempts proved futile. All vital parameters of animal were normal. Fetal fore limbs protruded from vulva were noticed. Vaginal mucus membrane was congested and vulva was edematous. Per vaginal examination revealed monster calf with two head attached each-other in anterior longitudinal presentation and dorso-sacral position. Since forced extraction was not possible, a decision was taken to relieve the foetus through an emergency tool- caesarean section.

Surgical Maneuver and Case Discussion
Caesarean section was performed by casting the animal into right lateral recumbency and paramedian site just parallel to milk vein (four fingers above milk vein and just cranial to udder) as described by Singh *et al*. (2018) [8]. A dead female dicephalic monster calf was delivered from the surgical site. The surgical wound was sutured in routine fashion using chromic catgut no. # 1 for uterus and peritoneum, and no. # 2 for two muscle layers. The fetus had two heads (dicephalus), each head was having separate nostrils, two eyes (tetraopthalmus) and two ears (Fig 1). The heads had two atlas bones (biatlanticus) free from each other but caudal part fused and continued with single cervical vertebrae (Fig 2). Antibiotic coverage and fluid therapy was followed for five days and sutures were removed on the 12th day after caesarean section.

The animal recovered without any post-partum complication. It is thought that teratogens are responsible for the failure of twins to separate after the 13th day of fertilization may result in monstrosity such as dicephalus fetus (Srivastava *et al*., 2008) [9]. Similar cases had been reported in cow (Kuldeep *et al*., 2017; Megahed *et al*., 2018; Dutt *et al*., 2019) [4, 5, 1] and buffalo (Gangwar *et al*., 2015) [3]. Since the buffalo had delivered two normal calves in last two calving, the condition appears to be non-hereditary in origin and might have resulted due to abnormal duplication of germinal area giving rise to fetuses whose body structures are partially but not completely duplicated. Monstrosity results in huge economic losses to animal owners. More research is required to find out specific causes of monstrosity. Emphasis is also required on early diagnosis of monstrosities at an early gestation.

Fig 1: Frontal View of Dicephalic Monster Fetus

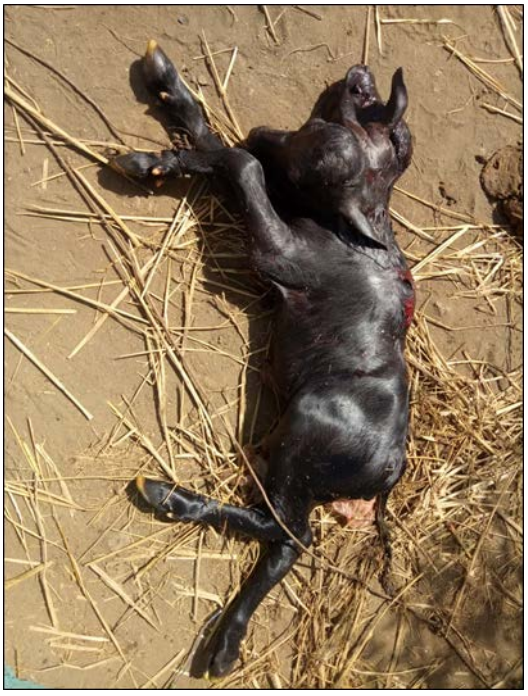

Fig 2: Lateral View of Dicephalic Monster Fetus

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