

Case Report

AN INIODYMUS DICEPHALIC BUFFALO NEONATE

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Statement of Novelty: The present case was reported 1st time in the vicinity of Lahore in which fusion of two heads (dicephalic) was seen on a single neck. Previously, reported cases were resolved by Caserean sections. To our knowledge, for the first time the current case has been resolved by using an obstetrical procedure (Fetotomy).

ABSTRACT

Dicephalus is a kind of conjoined twins in which two heads share a single body. We here describe a case of six-year-old pregnant buffalo with dystocia due to the dead dicephalic malformed fetus which was presented at Theriogenology Clinic. The dystocia was successfully resolved by fetotomy. The Weight, CRL (Crown Rump Length), Hearth Girth and Height of masculine iniodymus (two skulls with fusion at the occipital region) female fetus were 40 kg, 27 inch, 29.5 inch and 33.5 inch, respectively. The postoperative care was done by administrating ciprofloxacin (Cipoxin, Selmore, Pakistan; 100mg/ml, im) and flunixin meglumine (Loxin®, Selmore, Pakistan; 50mg/ml, im) followed by supportive therapy, calcium borogluconate (Mil-Fone C, Star, Pakistan; each 100 ml contain 26.6 g calcium borogluconate and 5.4 g boric acid, 300ml iv) in combination with amino acids plus vitamins (Amivicom, Star, Pakistan; 0.2-0.5 mg/kg im). In conclusion dystocia, due to dicephalic head could be successfully resolved through fetotomy in field conditions.

Key words: Iniodymus, Dicephalic, Buffalo, Fetotomy.

INTRODUCTION

Congenital defects are abnormalities of structure or function present at birth. They are rare and occasionally reported in veterinary practice. The majority of congenital defects are due to multifactorial etiology such as genetic or environmental (infectious diseases, viruses, drugs, poisonings, plants, mineral salts and vitamin (A, D, E) deficiency) which cause the improper separation of primitive streak after day 13 of fertilization (El Sheikh *et al.*, 2010). Congenital anomalies result in high economic losses, causing fetal dystocia, result in loss of the fetus as well as risk for the dam. Duplication of the cranial portion of the fetus is more common than that of the caudal portion (Robert, 2004).

Dicephalic is a congenital disorder in which neonate contain two heads. Mostly double head fetuses are oversized and cause dystocia so fetotomy or cesarean section is performed to resolve the problem (Long, 2009). The incidences of these types of congenital defects are very exceptional and reported in sheep (Monfared *et al.*, 2013), goats (Mukaratirwa and Sayi, 2006), Cattle (Salami *et al.*, 2011) and buffalo (Shukla *et al.*, 2011). All the case reports to handle iniodymus dicephalic fetus are through cesarean section. In present case, dystocia due to dicephalic fetus in buffalo was resolved by fetotomy for the first time.

Case History and Clinical Examination: A six year old Nili Ravi buffalo (*Bubalus bubalis*) with average body condition score 3.5 ± 0.5 (1-5) having normal gestation length and prolonged straining was brought to the Theriogenology Clinic of University of Veterinary and Animal Sciences, Lahore, Pakistan. The owner told that the buffalo is straining from the last 10 hours without any progression. Obstetrical examination revealed presence of the abnormal fetus with two palpable heads joined at around an angle of 45° to each other in the anterior longitudinal presentation, dorso-sacral position with both forelimbs in the birth canal. The fetus was dead as there was no suckling reflex so fetotomy was performed instead of cesarean section. The temperature of the buffalo was 100 °F and overall health status was good.

Obstetrical Procedure and Treatment: Attempts to relieve dystocia, by mutation and forced extraction with adequate lubrication of birth canal, were unsuccessful to deliver the fetus. Then fetotomy was performed to resolve the dystocia because of the dead fetus. The fetotome with saw wire was introduced around the one head of the fetus and removed by cutting it. Then two chains were applied over the forelimbs and a hook inserted in the medial canthus of eye to pull the fetus. Excessive lubrication was provided. The fetus was removed by force extraction. A very masculine female fetus with shiny hair coat came out. The neck was very masculine with 19 inch diameter. The Weight, CRL

(Crown Rump length), Hearth Girth and Height of fetus were 40 kg, 27inch, 29.5inch and 33.5inch respectively. The placenta was easily removed at that time. After the obstetrical intervention, ciprofloxacin (Cipoxin, Selmore, Pakistan; 100mg/ml, im) and flunixin meglumine (Loxin®, Selmore, Pakistan; 50mg/ml, im)

were injected. The supportive therapy was provided as calcium borogluconate (Mil-Fone C, Star, Pakistan; each 100 ml contain 26.6 g calcium borogluconate and 5.4 g boric acid, 300 ml iv) and amino acids plus vitamins (Amivicom, Star, Pakistan; 0.2-0.5 mg/kg im). Anti-inflammatory and antibiotic were given for five days.

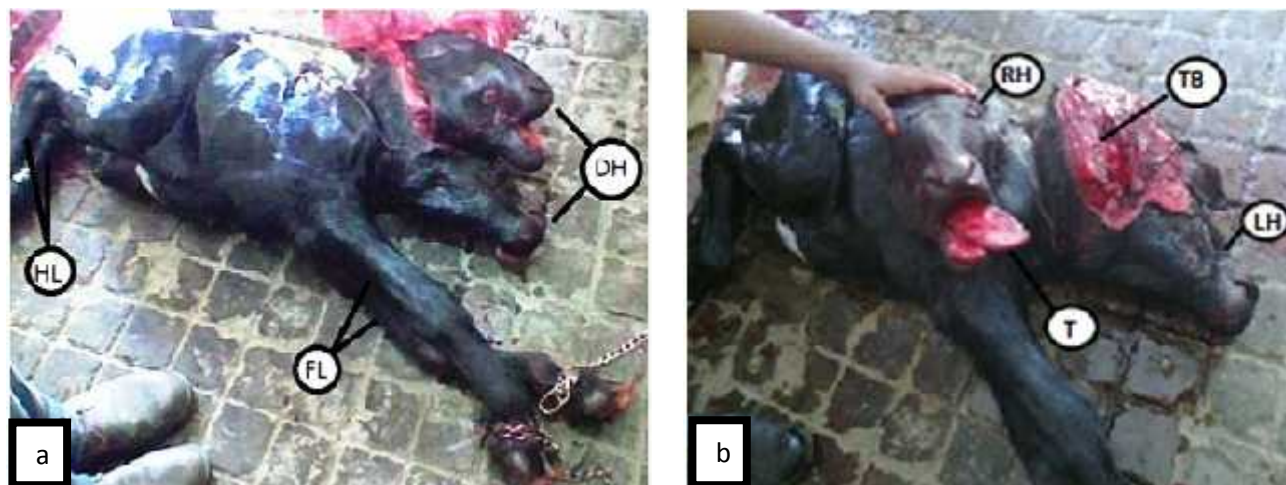


Fig.1: Represent (a) shiny, masculine dicephalic fetus DH (Double Head), FL (Both Fore Limbs), HL (Both Hind Limbs) (b) RH (Right Head), LH (Left Head), T (Tongue), TB (Temporal Bone).

DISCUSSION

The case presented was characterized by the fusion of two heads (dicephalic) on a single neck (monauchenos). Both the heads were nearly of same size and were joined from the occipital region at an angle of 45° (Fig 1a). Each head showed two eyes, two ears, mandible and maxilla (Fig 1b). The neck, thorax, abdomen and limbs were grossly normal. According to Camon *et al.*, 1992 dicephalic fetus could be found in one of the following conditions; Atlodymus (two complete and separate skulls and single neck), Iniodymus (two skulls with fusion at the occipital region) and derodymus (two complete and separate skulls with two separate necks). According to these terminologies the present fetus was iniodymus dicephalic female buffalo calf.

Any factor responsible for incomplete separation of the primitive streak after day 13 of the fertilization is considered an etiological factor for congenital duplication. These factors may be genetic or environmental (McGirr *et al.*, 1987). Environmental factor includes toxic plants, infectious agents, drugs, trace element deficiencies and physical agents such as radiation, hyperthermia and embryo manipulations (Dennis and Leipold, 1986). According to the literature, cesarean section has been performed mostly to correct these types of dystocia (Shukla *et al.*, 2011; Monfared *et al.*, 2013) which is not possible in field conditions. In the present report, fetotomy was performed which provide the evidence that dystocia due to dicephalic fetus could

be resolved successfully through it. So this case report will be helpful for the veterinarians to resolve that type of dystocia in field conditions.

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Conflict of Interest: All authors have no conflict of interest with any one about this manuscript

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