

## Dicephalic Monstrosity in a Heifer

JOHN ABRAHAM<sup>1</sup> S. BIHU<sup>2</sup> INDU V. RAJ<sup>3</sup> AND BINDU LAKSHMANAN<sup>4</sup>

College of Veterinary & Animal Sciences, Pookot,  
Lakkidi P.O. Wayanad- 673 576, Kerala.

### ABSTRACT

A 3 ½ year old crossbred heifer with normal gestation and prolonged labour pain was presented. Obstetrical examination revealed a craniophagus dicephalic foetus. Caesarian section was resorted to deliver a live female dicephalic monster. The anatomical structure of the monster is described and discussed.

**Key words:** Cow, Dystocia, Dicephalic monster

Abnormal duplication of germinal area in foetus will give rise to congenital foetal abnormalities with partial duplication of body structures. Duplication of cranial part of foetus is more common than that of caudal portion (Roberts, 1971). According to Noden and Lahunta (1984) duplication of any part of the future axial tissues arise during primitive streak elongation or regression. The incidence of foetal monsters though rare, was reported by Pandit *et al.* (1994) in goats; Chauhan and Verma (1995), Raju *et al.* (2000) and Bugalia *et al.* (2001) all in buffaloes. Dystocia is common sequelae of monstrosities in bovines leading to caesarian delivery of foetus (Sharma, 2006)

A 3 ½ year old Heifer with normal gestation and prolonged labour pain was brought to the clinic. It had started straining since last 8 hrs. Obstetrical examination revealed a craniophagus dicephalic foetus with both heads joined at 45° to each other in anterior longitudinal presentation. The heads were lying against maternal pelvic brim. Attempts to relieve Dystocia by mutation and forced extraction with adequate lubrication of birth passage was unsuccessful to deliver the foetus. Hence caesarian section was resorted.

The animal was restrained in right lateral recumbency following high epidural anesthesia with 6ml of 2% xylocaine. The site was prepared and anesthesia achieved by local infiltration. Laparohysterotomy was performed under sterile conditions. An incision 35cm long was made on the left lower flank and part of the uterus was exteriorized to deliver the live female dicephalic monster which succumbed to death after few minutes. The incision of uterus was closed with double row of continuous Lambert sutures using chromic catgut size 2. The laparotomy incision was sutured as per standard technique. The cow was given accurate dosage as per body weight normal saline i/v during and following operation. Injections Dicrysticin-S 5g x 5 days and Inj. Livogen, Inj. Novalgin, Inj. Avil were administered at recommended dose for a week duration.

The foetus was full term. It had two heads on single neck (Fig 1). The left head was in better alignment with the spine than the right. The head were fused in the occipital region. Each head had two eyes which showed nystagmus and medial strabismus. Corneal opacity was evident in the medial eye of both heads. The pinnae of the medial ears were fused at the base for approximately 3.5 cm. The cranial and cervical musculature reflected the head duplications. The neck, thorax abdomen and limbs were

<sup>1,3,4</sup> Assistant Professor,

<sup>2</sup> Veterinary Surgeon, Veterinary Dispensary, Vengappally, Thekkumthara P.O. Kalpetta- 673 121



grossly normal. The calf was unable to raise its head or stand. The observations are in accordance with the reports made by Fisher *et al.* (1986). The condition could be classified as "Dicephalic, distomus, tetraophthalmus, dipus, and dibrachis monster" as per Roberts (1971)

In the present case during primitive streak elongation or regression due to the presence of an excessively large block of chrodamesoderm there might have been a duplication of the surface ectodermal cells forming neural tissue and craniofacial mesenchyme as reported earlier in lamb by Fisher *et al.* (1986). Thus at the time of neurulation these tissues might have been programmed to form two 'head folds' causing duplication of all the structures present in head up to the pharynx. The molecular basis underlying the acquisition and expression of this spatial programming is unknown and needs further research (Noden and Lahunta, 1984). The presence of nystagmus, strabismus and limb weakness may be due to anomalies in the Motor pathways below the level of midbrain as a result of fusion of brain stem. The lack of coordinated limb movements could be as a result of the calf's inability to organize information from the duplicated motor structures of brain as pointed earlier by Fisher *et al.* (loc.cit.)



Fig.1: Female dicephalic monster with two heads present on one neck and normal trunk.

#### REFERENCES

- Bugalia, N.S., Biswas, R.K. and Sharma, R.D. (2001) Diplopagus sternopagus monster in an Indian water buffalo (*Bubalus bubalis*). *Indian J. Anim. Reprod.*, **22**(2):102-104
- Chauhan, K.S. and Verma, H.K. (1995). A case of Dystocia due to diplopagus monster in buffalo. *Indian J. Anim Reprod.*, **16** (1):75
- Fisher, K.R.S., Partlow, G.D. and Walker A.F. (1986). Clinical and anatomical observations of a two-headed lamb. *Anat. Rec.*, **214**(4): 432-440
- Noden, D.M. and Lahunta, A.D. (1984). *The Embryology of Domestic Animals Developmental Mechanisms and malformations*, 1<sup>st</sup> Edit. Williams and Wilkins Baltimore, London.
- Pandit, R.K., Pandey, S.K. and Agarwal, R.G. (1994). A case of dystocia due to diplopagus monster in goat. *Indian J. Anim. Reprod.*, **15** (1):82



- Raju, K.G.S., Rao, K.S., Reddy V.S.C. and Sharma, G.P. (2000). Dicephalus-biatlanticus monster in a buffalo. *21* (1):81
- Roberts, S.J. (1971). In: *Veterinary Obstetrics and Genital Disease*, 2<sup>nd</sup> Edit. C.B.S. Publisher and distributors, Delhi. pp70-73
- Sharma, A (2006). Caesarean section in animals under field conditions: A retrospective study of 50 cases. *Indian Vet. J.*, **83**(5): 544-45

## ISSAR AWARD

### ISSAR SILVER JUBILEE MERIT-CUM-MEANS SCHOLARSHIP

- ✦ The scholarship is awarded annually to a M.V. Sc. Student in the discipline of Animal Reproduction, Gynaecology and Obstertrics.
- ✦ The applicant should have passed B.V.Sc. without any failure and the one with an OGPA over 7.5/10 having the minimum income will be selected.
- ✦ The application in the prescribed proforma should reach to the General Secretary before 31<sup>st</sup> March of the year succeeding the year of award. It should be accompanied by the transcript, degree certificate and income certificate (Original) from Revenue authority not below the rank of Tahasildar.
- ✦ Application form may be obtained from General Secretary, ISSAR