

DICEPHALIC THORACOPAGUS DIBRACHIUS TETRAPUS MONSTER IN MURRAH BUFFALO: A CASE REPORT

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SUMMARY

A rare case of dystocia due to a dicephalus thoracopagus dibrachius tetrapus monster in a Murrah buffalo is reported with successful management by partial fetotomy with uneventful recovery of the dam.

Key words: Buffalo, Dibrachius, Monster, Tetrapus, Thoracopagus

Monsters are the developmental abnormalities that cause distortion of organs and body systems. Congenital abnormalities or malformations such as duplication of the body structures caused due to abnormal duplication of the germinal layer *i.e.* the abnormal duplication of the inner cell mass in an embryo gives rise to fetuses whose body structures are partially but not completely duplicated (Roberts, 1971). Dystocia is a common sequel of such monstrosity and most of the cases are resolved either by fetotomy or caesarean section. In the present case report, a dicephalic thoracopagus dibrachius tetrapus dicaudatus monster was relieved by partial fetotomy.

A seven-year-old Murrah buffalo in her third parity was presented to Teaching Veterinary Clinical Complex in recumbent condition with the history of full-term gestation and straining since last 24 hours. Water bags had ruptured 15 hours before and this case was handled by the local practitioner who was failed to correct the dystocia. The clinical parameters such as heart rate, respiration rate, rectal temperature were 56/minute, 32/minute and 102.5°F, respectively. At the time of presentation, the animal was lethargic, dull, depressed and straining was completely ceased. Detailed gynaecological examination revealed that the birth canal was completely impacted with double headed fetus and forelimbs were also palpated. Further, it was explored that both the heads were completely separated with no clear demarcation of thorax but two separate vertebral columns were palpated.

On the basis of per-vaginal palpation, the case was diagnosed as dystocia due to conjoint twins monstrosity. Attempts were made to relieve dystocia through obstetrical maneuver which did not work then it was decided to go for partial fetotomy of one head to relieve the

dystocia. One head was removed with Thygeson's double barrel fetotome and the fetus was pulled by traction using William's long handle eye hook. The buffalo was stabilized with fluid therapy comprised of inj. Dextrose Normal Saline and Normal Saline @ 4 litre each I/V along with Calcium borogluconate @ 450 ml S/C and antibiotic (Ceftriaxone tazobactam @ 10mg/Kg b.w., I/M), antihistaminic (Chlorpheniramine maleate @ 10ml I/M) and anti-inflammatory (Flunixin meglumine @ 2.2 mg/Kg b.w., I/M). After 24 hours, animal showed signs of improvement and returning to normalcy. The animal was discharged with advising the owner to continue the same treatment for three more days along with intrauterine



Fig. 1: *Dicephalic thoracopagus dibrachius tetrapus* monster after fetotomy of one head

medication with bolus Cleanex @ 4bolus. The fetal monster was a conjoined male twin with the fused thoracic region containing one pair of forelimbs with a well developed posterior portion of both the twins and pair of hind limbs in each (Fig. 1). On postmortem examination, a pair of hearts enclosed in the thoracic cage, fused liver and two pairs of kidneys were found. There were well developed separate urogenital system and gastric system with separate rectal openings. Conjoined twins arise from a single ovum, are monozygotic in nature (Arthur, 1956)

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and are the frequent cause of dystocia in cattle and buffalo. Conjoined twins are also known as Siamese twins or diplopagus monsters. Cranial duplication is more common than that of the caudal portion of the fetus (Roberts, 1971). Conjoined twins may be caused by a number of factors such as genetic, environmental, and infectious agents along with assisted reproductive techniques such as *In vitro fertilization* (IVF) and Intracytoplasmic sperm injection (ICSI) (Shimizu *et al.*, 2004). 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). This type of fetus is due to congenital embryonic duplication of germinal layer arising from single ovum (Kumar and Reddy, 2008) that gives rise to the monozygotic foetus with partial duplication of body structures. Simon *et al.* (2009) stated that conjoined twins were always genetically identical and shared the same sex as in this case, both the twins were male. Dystocia due to conjoined twins, such cases have been reported earlier in buffalo (Sharma *et al.*, 2010; Jerome *et al.*, 2010; Singh and Pandey, 2013; Sachan *et al.*, 2016; Gehlod *et al.*, 2017) and in cow (Singh *et al.*, 2011; Sharma *et al.*, 2013; Kumar *et al.*, 2014). The present case seemed to be a non-inherited teratogenic defect of development as there was no history of monstrosity in previous calvings.

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