MONOCEPHALIC THORACOPAGUS TETRABRACHIUS TETRAPUS MONSTER IN MURRAH BUFFALO- A CASE REPORT

Vikas Sachan[1], Brijesh Kumar[2,*], Vipin Sonkar[3] and Atul Saxena[1]

ABSTRACT

A conjoint monster was delivered by caesarean section in a pluriperous murrah buffalo. Partially duplicated, two female fetuses joined at the thoracic region (Thoracopagus) and having well developed eight limbs, i.e. four forelimbs (Tetrabrachius) and four hind limbs (Tetrapus) and both pelvis are separate (Dicaudatus). There was clear four nostrils (Tetrarhino) and the post-mortem examination revealed that internal organs were paired.

Keywords: conjoined twin, monster, Thoracopagus, Tetrabrachius, Tetrapus, Dicaudatus, Tetrarhino

INTRODUCTION

Monstrosity is a disturbance of the development that involves various organs and systems which can cause great distortion of the individual (Vegad, 2007). The incidence of fetal monsters, though rare, was reported by Khasatiya *et al*., 2009; Jerome *et al*., 2010; Ravikumar *et al*., 2012 in cows, Dhami *et al*., 2000; Prasad *et al*., 2006; Sharma *et al*., 2010 in buffaloes. Conjoined twins arise from a single ovum and are monozygotic in nature (Arthur, 1956) and are the frequent cause of dystocia in cattle and buffalo. Conjoined twins are also known as diplopagus monsters or *Siamese twins*. Structural or numerical duplication during the embryonic stage give rise to fetuses whose body structures are partially but not completely duplicated (Roberts, 1971). They are the result of incomplete division of a fertilized ovum and show great variation from partial duplication to almost complete separation of two individuals, joined in just a few places. Dystocia is a common sequel of monstrosity and most of the cases resolved by caesarean section. In the present study a case of monocephalic thoracopagus tetrarhino tetrabrachius tetrapus dicaudatus monster was relieved by caesarean section.

CASE HISTORY AND CLINICAL OBSERVATIONS

A seven year old murrah buffalo presented to Teaching Veterinary Clinical complex, Veterinary University (DUVASU) Mathura in recumbent condition with history of full term gestation and straining since last two days, water bag ruptured 12 h before and also case was handled by local practitioner to relieve the dystocia but failed. The

[1]Department of Veterinary Obstetrics and Gynaecology, Deen Dayal Upadhyay Veterinary and Animal Sciences University (DUVASU), Mathura, Uttar Pradesh, India
[2]ICAR RC for NEH Region Sikkim Centre Gangtok, Sikkim, India, *E-mail: drbrijeshvet02@gmail.com
[3]Department of Animal Husbandry, Government of Uttar Pradesh, Uttar Pradesh, India

clinical parameter such as heart rate 48/minute, respiration rate 30/minute, rectal temperature 101.5°F and animal was lethargy, dull, depressed and straining sign was completely ceased. Detail Gynaeco-clinical examination revealed that birth canal was completely impacted with fetal head and legs and two amputated legs were also palpated. Further detail examination revealed that head relatively big and no clear demarcation of thorax (Figure 1) and palpation of many legs at untoward places confirmed the fetal monstrosity and might be prime cause for dystocia.

TREATMENT AND DISCUSSION

Attempts were made to relieve dystocia through obstetrical maneuver but futile then it was decided to go for cesarean section to relieve the dystocia. The buffalo was stabilize with fluid therapy comprises of inj. Dextrose Normal Saline and Normal Saline 4 litter each, Ca-borogluconate 450 ml and antibiotic, antihistaminic and anti-inflammatory were administered. Lower left flank laprohystrectomy was made and a full term dead female monster was extracted out. The animal

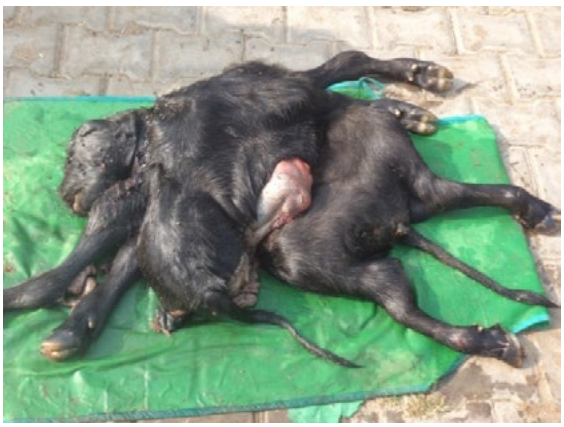

Figure 1. Conjoint Monster with separate pelvis.

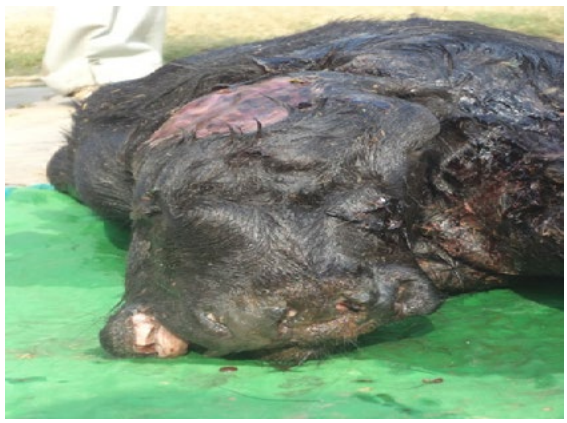

Figure 2. Four nostrils depression and complete absence of epithelium on pole.

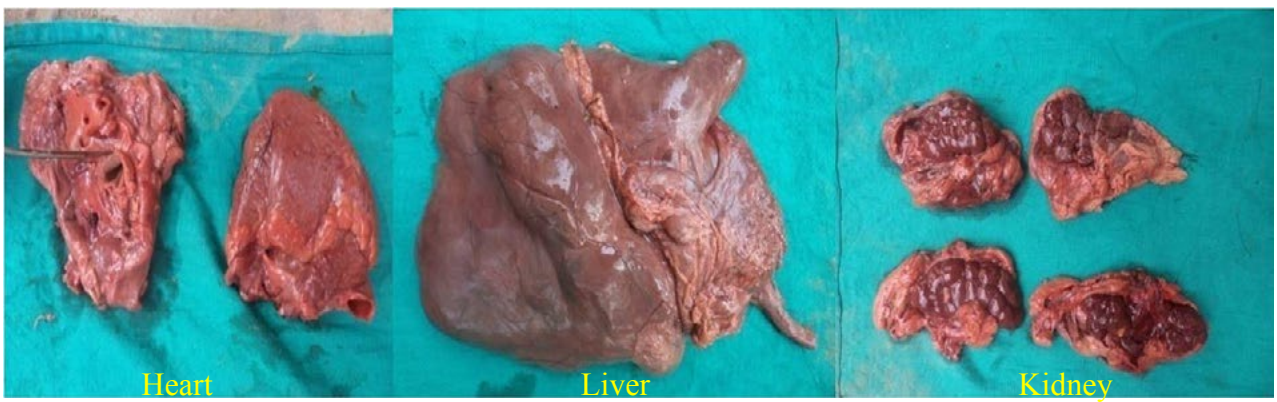

Figure 3. A pair of hearts, fused liver and two pairs of kidneys.

was stood after 6 hrs of cesarean section and took the water and walks little and after 24 h animal showing sign of clear improvement and returning to normal and discharge with written prescription advising the owner to continue the same treatment five more day along with local dressing of surgical site and intrauterine medication. After 12th day of operation suture was removed and animal looks totally recovered.

The monster was a conjoined female twin with fusion at the thoracic region containing two pairs of fore limbs and posterior regions of both twins were well developed and having separate pelvis with external genitalia and rectum and pair of hind limbs in each but in one pelvis both limbs was in broken condition probably because of previous handling (Figure 1). The heads were fused, lacked distinct eyes, having two ears, four clear nostrils (tetrarhino) with two complete jaws. There was depression and complete absence of epithelium on pole region (Figure 2).On post-mortem examination, the conjoined twin monster was found to be attached to the thoracic region and encloses a pair of hearts. Other visceral organs like fused liver and two pairs of kidneys, (Figure 3). There was well developed urogenital system and small and large intestine were present with separate rectums for both fetuses.

Conjoined twins may be caused by number of factors such as genetic, environmental, and infectious agents. Assisted reproductive techniques such as In vitro fertilization (IVF) and Intra cytoplasmic sperm injection (ICSI) may be a factor (Romero *et al.,* 1988). 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 foetus is due to congenital embryonic duplication of germinal layer arising from single ovum (Kumar and Reddy, 2008) that gives rise to 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. Dystocia due to conjoined twin monsters, though uncommon, have been reported earlier in buffalo (Urankar *et al*., 1994; Dhami *et al*., 2000) and in cow (Honnappagol *et al*., 2005). The present case seemed to be a non-inherited teratogenic defect of development as there was no history of monstrosity in previous calving.

REFERENCES

Arthur, G.H. 1956. Conjoined and identical twins. *Vet. Rec*., **68**: 389.

Dhami, A.J., M.T. Panchal and F.S. Kavani. 2000. Dystocia due to holo acardius acephalic (Asymmetrical conjoined twin) monster in a buffalo. *Indian J. Anim. Reprod*., **21**(2): 162-164.

Finberg, H.J. 1994. Ultrasound evaluation in multiple gestation, p. 121-124. *In Callen's Ultrasonography in Obstetrics and Gynecology*, 3rd ed. Harcourt Publishers.

Honnappagol, S.S., M.H. Tandle and V. Ramakrishna. 2005. Thoraco- abdomino-pygophagus foetal monster in a non-descript cow. *Indian Vet. J*., **82**: 441.

Jerome, A., T. Sarath and N. Arunmozhi. 2010. Dystocia due to a conjoined twin monster in a buffalo. *Buffalo Bull.,* **29**: 229-231.

Khasatiya, C.T., D.M. Patel, D.M. Dabhi and P.P. Choudhary. 2009. Dystocia due to dicephalus dipagus monster in a dangi cow. *Indian J. Anim. Reprod*., **29**: 224-225.

Kumar, Y.N. and A.R.M. Reddy. 2008. Syncephalus

dipus tetrabrachius tetrapus dibrachius monster in ewe. *Indian Vet. J.,* **85**: 1335.

Prasad, J.K., S. Prasad, A. Kumar and G.K. Singh. 2006. Thoraco-sternopagus monster: a rare case of fetal dystocia in buffalo. *Indian J. Anim. Reprod*., **27**: 122-123.

Ravikumar, K., M. Selvaraju and S. Manoharan. 2012. Dystocia Due to "Dicephalus Tetrabrachius Thoracopagus Tetrapus Dicaudatus" monster in a Jersey crossbred cow. *Indian Vet. J*., **89**: 96-98.

Robert, S.J. 1971. *Veterinary Obstetrics and Genital Diseases*, 2nd Indian ed. CBS Publishers, New Delhi, India.

Romero, R., G. Pilu and P. Jeanty. 1988. *Prenatal Diagnosis of Congenital Anomalies*. Norwalk, CT, Appleton and Lange. p. 405-409.

Sharma, A., S. Sharma and N.K. Vasishta. 2010. Diprosopus buffalo neonate: A Case report. *Buffalo Bull.,* **29**: 62-64.

Simon, M.S., B.J. William and T.A. Kannan 2009. A rare case of conjoined twin monster (Ischiopagus) in a she buffalo. *Indian J. Anim. Reprod.,* **30**: 90-91.

Urankar, R.M., S.V. Chhonkar and P.M. Gangaprai. 1994. Conjoined twin monstrosity in a buffalo. *Indian J. Anim. Reprod*., **15**(2): 165.

Vegad, J.L. 2007. *Textbook of Veterinary General Pathology*, 2nd ed. International book distribution Company Lucknow, U.P., India.