



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2022; SP-11(7): 4555-4556
© 2022 TPI
www.thepharmajournal.com
Received: 17-04-2022
Accepted: 29-06-2022

Paramveer Singh Sangha
Ph.D. Scholars, Department of
Veterinary Gynecology and
Obstetrics, Guru Angad Dev
Veterinary and Animal Sciences
University, Ludhiana, Punjab,
India

SS Dhindsa
Scientist, Department of
Veterinary Gynecology and
Obstetrics, Guru Angad Dev
Veterinary and Animal Sciences
University, Ludhiana, Punjab,
India

Harjap Kaur
Ph.D. Scholars, Department of
Veterinary Gynecology and
Obstetrics, Guru Angad Dev
Veterinary and Animal Sciences
University, Ludhiana, Punjab,
India

Ashwani Kumar Singh
Associate Professor, Department
of Veterinary Gynecology and
Obstetrics, Guru Angad Dev
Veterinary and Animal Sciences
University, Ludhiana, Punjab,
India

Prahlad Singh
Professor, Department of
Veterinary Gynecology and
Obstetrics, Guru Angad Dev
Veterinary and Animal Sciences
University, Ludhiana, Punjab,
India

Corresponding Author
Paramveer Singh Sangha
Ph.D. Scholars, Department of
Veterinary Gynecology and
Obstetrics, Guru Angad Dev
Veterinary and Animal Sciences
University, Ludhiana, Punjab,
India

Delivery of Sternopagus twin monster through partial fetotomy in buffalo (*Bubalus bubalis*)

Paramveer Singh Sangha, SS Dhindsa, Harjap Kaur, Ashwani Kumar Singh and Prahlad Singh

Abstract

Sternopagus conjoined twins are fetuses who are physically joined at the level of the sternum when they are born. Dystocia is common during parturition as a result of these. The current instance has similar conclusions, such as previous reported case of dystocia caused by Sternopagus conjoined twins in a Murrah buffalo. Following a thorough examination and diagnosis, it was decided to perform a fetotomy to treat the obstetrical emergency. The non-surgical approach was effective, resulting in the delivery of a conjoined twin monster, Sternopagus, and hence the case was successfully treated by partial fetotomy.

Highlights

- Sternopagus conjoined twins.
- Delivery of Sternopagus conjoined twin monster by fetotomy.

Keywords: Buffalo, conjoined twin, fetotomy, Sternopagus

Introduction

The factors responsible for development of fetus include genetics, physical, chemical or viral factors. The conjoined twins or double monsters arise from an incomplete division of a fertilized embryo (Shukla *et al.*, 2007) [1]. Bovines frequently have conjoined twins with partial duplication of extremities and fusion in the anterior abdomen (Kumar *et al.*, 2014) [7]. Cesarean operation is commonly used to deliver such monsters (Bhoi *et al.*, 2009) [2], but due to the high incidence of postoperative problems, caesarean section is regarded as a complicated and unpredictable surgery in buffalo. However, in the present case we were able to deliver a rare Sternopagus - conjoined twin monster by partial fetotomy in a Murrah buffalo.

Case history and clinical observations

A nine year old Murrah buffalo in its fourth parity at full term pregnancy was presented to the Teaching Veterinary Clinical Complex of Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India with a history of labor since past 12 hours. At presentation of the animal, water bags had ruptured about 3 hours ago; however, no traction was applied at the field level by local veterinarian who judiciously referred the case to the University hospital. Vaginal and rectal examinations were performed after comprehensive anamnesis to determine the nature and cause of dystocia. Two hind limbs and tail of a dead calf were presented in the birth canal. On critical examination another calf was found in anterior presentation and dorso-sacral position attached to the sternum of the first calf and the case was diagnosed as Sternopagus conjoined twin monster.

Treatment

In bovine, the preferred method to deliver conjoined twin monsters is the cesarean section but the post-cesarean complications *viz.* low survival of the dam, development of uterine adhesions, peritonitis and low subsequent fertility are the negative impacts of the surgery in buffalo (Dhindsa *et al.*, 2010) [4], thus, cesarean section is generally avoided in buffaloes. A lubricated loaded fetotome was then inserted deep into the passage following epidural anaesthesia (5 ml, 2% Lignocaine hydrochloride) and head of the second calf, which was obstructing the passage, was extracted out in a single cut. After ample lubrication with a 1 per cent solution of sodium carboxy methyl cellulose and shielding the cut bony parts of the neck with hand, the twin monster was extracted out smoothly afterwards (Fig. 1). The point of attachment between two female calves was on the ventrum (both calves' sternum), and all

organs were duplicated, according to fetal gross anatomy. Following delivery, supportive care including 5 litres of normal saline solution (IV), 450 ml calcium borogluconate solution with magnesium and phosphorus (slow IV), antibiotics (Ceftiofur 2 mg/kg b. wt., IM) and non-steroidal anti-inflammatory drugs (Flunixin megludyne, 2 mg/kg b. wt., IM) was administered and other drugs *viz.* rumenototics, multivitamins and ecobolics were prescribed as a routine treatment for one week. The buffalo recovered well following the treatment.



Fig 1: Conjoined twin monster (Sternopagus) delivered through partial fetotomy

Discussion

The most common cause of dystocia in cattle is fetal dystocia (Bennett and Gregory, 2001) [1]. Developmental abnormalities in bovine embryos have been well documented (Honnappagol *et al.*, 2005; Whitlock *et al.*, 2008) [5, 14]. The conjoined twins, one of the congenital abnormalities found in animals (Velhankar *et al.*, 1968; Chandrasahana *et al.*, 2003) [13, 3], are always identical twins of the same sex originate due to incomplete division of one fertilized egg (Kumar *et al.*, 2014) [7] at the primitive streak development state (Noden and Lathunta, 1985) [8]. It is believed that twins fail to separate into two fetuses after the 13th day post fertilization (Srivastva *et al.*, 2008) [12]. The cause of such abnormality remains mystery, however, many genetics and environmental factors, viral infection, poisoning of dam or nutritional deficiency are considered to be responsible in development of such monster fetuses (Jones and Hunt, 1983) [6]. The occurrence of conjoined twins with nearly full duplication, as seen in this example, is uncommon in bovines (Singh and Pandey, 2013) [10]. Singh *et al.* (2018) [11] also reported that an emergency caesarean delivery was used to address Sternopagus conjoined twins with complete duplication of fetal tissues in a Murrah buffalo, but the present case justifies the use of fetotomy as an alternative to cesarean section for the obstetrical management of dystocia caused by such conjoined twins.

Conclusion

To treat dystocia caused by Sternopagus conjoined twins in buffaloes, fetotomy is found to be a good and realistic alternative to caesarean section. Also, fetotomy technique proves to be more efficient and economical than cesarean operation, and preserves the future production potential of the animal.

References

- Bennett GL, Gregory KE. Genetic (co)variances for calving difficulty score in composite and parental populations of beef cattle: 1. Calving difficulty score, birth weight, weaning weight and post weaning gain. *Journal of Animal Science*. 2001;79:45-51.
- Bhoi DB. Conjoined Sternopagus twin monster: A cause of dystocia in Mehsani buffalo. *Veterinary World*. 2009;2(8):327.
- Chandrasahana L, Krishna KK, Selvaraju M. Dystocia due to dicephalus monostomus monster in a cross bred cow. *Indian Journal of Animal Reproduction*. 2003;24:175.
- Dhindsa SS, Dhaliwal GS, Ghuman SPS, Sood NK. Alterations in uterine and peritoneal fluid cytology as well as uterine histopathology following caesarean operation with reference to suture material and intra-peritoneal lubricant in bovines. *Indian Journal of Animal Sciences*. 2010;80(6):523-527.
- Honnappagol SS, Tandle MH, Ramakrishna V. Thoraco Abdomino Pygo Phagus foetal monster in a non descript cow. *Indian Veterinary Journal*. 2005;82:441.
- Jones TC, Hunt RD. *Veterinary Pathology*, Edn 5, Lea and Febiger, Philadelphia, 1983, 115.
- Kumar S, Pandey AK, Kushwaha RB, Sharma U, Dwivedi DK. Dystocia due to conjoined twin monster in a cow. *Indian Journal of Animal Reproduction*. 2014;35(1):54-56.
- Noden DM, Lathunta DA. *The embryology of domestic animals*. Williams and Wilkins, Baltimore, 1985, 44-45.
- Shukla SP, Nema SP, Pandey AK, Jain S, Patel BR, Bondade S. Dystocia due to bull dog calf in a she buffalo. *Buffalo Bulletin*. 2007;26:104-105.
- Singh G, Pandey AK. Dystocia due to conjoined twin monsters in Murrah buffaloes. *Haryana Veterinarian*. 2013;52:139-140.
- Singh N, Dhindsa SS, Singh N, Sethi G, Kaur A, Jan F. Caesarean section in a buffalo to deliver dicephalus tetrabrachius tetrapus Sternopagus dicaudatus conjoined twins. *Journal of Entomology and Zoology Studies*. 2018;6(6):1285-1287.
- Srivastva S, Kumar A, Maurya SK, Singh A, Singh VK. A *dicephalus* monster in Murrah buffalo. *Buffalo Bulletin*. 2008;27(3):231-232.
- Velhankar DP, Deshpande BR, Hadi MA. Occurrence of Gastro Thoraco Didymus octopus twin monsters in buffaloes. *Indian Veterinary Journal*. 1968;45:823-829.
- Whitlock BK, Kaiser L, Maxwell HS. Heritable bovine fetal abnormalities. *Theriogenology*. 2008;70:535-549.