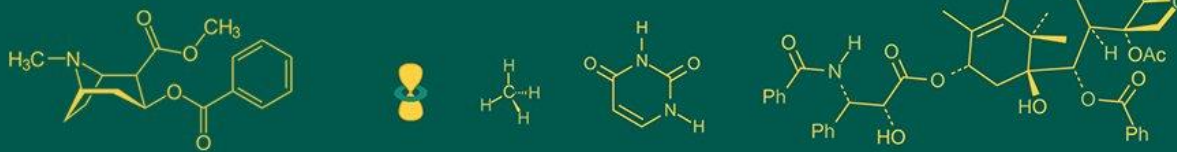


International Journal of Advanced Biochemistry Research



ISSN Print: 2617-4693
 ISSN Online: 2617-4707
 IJABR 2024; SP-8(11): 811-813
www.biochemjournal.com
 Received: 05-09-2024
 Accepted: 13-10-2024

Jafferson Rubaraj R
 Veterinary Doctor, Rajiv
 Gandhi Institute of Veterinary
 Education and Research
 (RIVER), Puducherry, India

Thenamudhan S
 UG Scholar, Rajiv Gandhi
 Institute of Veterinary
 Education and Research
 (RIVER), Puducherry, India

Srinivas M
 UG Scholar, Rajiv Gandhi
 Institute of Veterinary
 Education and Research
 (RIVER), Puducherry, India

Nevagire Somnath
 UG Scholar, Rajiv Gandhi
 Institute of Veterinary
 Education and Research
 (RIVER), Puducherry, India

Vinit Warang
 MVSc Scholar, Department of
 Veterinary Gynaecology and
 Obstetrics, Rajiv Gandhi
 Institute of Veterinary
 Education and Research
 (RIVER), Puducherry, India

Kantharaj S
 Professor and Head,
 Department of Veterinary
 Gynaecology and Obstetrics,
 Rajiv Gandhi Institute of
 Veterinary Education and
 Research (RIVER),
 Puducherry, India

Corresponding Author:
Jafferson Rubaraj R
 Veterinary Doctor, Rajiv
 Gandhi Institute of Veterinary
 Education and Research
 (RIVER), Puducherry, India

Dystocia due to parapagus dicephalus dibrachius dipus dicaudatus double foetal monster in a crossbred Jersey cow: A case report

Jafferson Rubaraj R, Thenamudhan S, Srinivas M, Nevagire Somnath, Vinit Warang and Kantharaj S

DOI: <https://doi.org/10.33545/26174693.2024.v8.i11Sk.3039>

Abstract

Foetal monstrosity is a developmental anomaly of ovum, embryo or fetus that can lead to significant distortion of the individual. These conditions generally results in dystocia. Amongst all monstrosities, parapagus dicephalus dibrachius dipus dicaudatus is an exceptionally rare form of conjoined twinning in which the newborn calf is characterized with two heads, two fore limbs, two hind limbs and one trunk. A 5-year-old pluriparous crossbred Jersey cow was presented with history showing signs of parturition, rupture of water-bag noticed by the owner in the previous night. Vaginal examination revealed dicephalic calf at the pelvic brim with both the forelimbs extending towards the birth canal. Caesarean section was performed and a monster was removed. Detailed examination revealed that it was a case of parapagus dicephalus dibrachius dipus dicaudatus double foetal monster.

Keywords: Cow, dystocia, foetal monster, dicephalus dibrachius dipus dicaudatus, caesarean section

Introduction

Foetal anomalies and monstrosities are the common causes of dystocia in bovines [4]. A monster refers to a fetus with multiple abnormalities affecting several organs and body systems and these deformities are frequently associated with dystocia. Many of these are double monsters, with doubling of parts or nearly the entire fetus. These double monsters apparently arise from incomplete development or separation of monozygotic twins in the early embryonic period [1]. Different types of conjoined twin foetal monsters arise based on the site of fusion and incomplete separation. Twinning in uniparous animal is a common cause of dystocia. Caesarean section is typically performed for the obstetrical management of conjoined twins [6]. In this case report, a successful delivery of parapagus dicephalus dipus dicaudatus double foetal monster by performing caesarean section was reported.

Case History and Clinical findings

A five-year old pluriparous crossbred Jersey cow having difficulty in parturition was presented to the large animal unit of Gynaecology and Obstetrics Unit, Veterinary Clinical Complex, RIVER, Puducherry. The owner reported that the amniotic sac has ruptured previous night and despite the animal straining, all attempts at delivery of the fetus were unsuccessful. Clinical examination revealed elevated respiration and pulse rates with normal rectal temperature. Epidural anesthesia was administered using Lignocaine hydrochloride 2% and per vaginal examination of the cow revealed, fetus in anterior longitudinal presentation, dorso-sacral position with both the forelimbs extending towards the birth canal. A detailed exploration revealed that the fetus was a conjoined twin monster. Hence, the case was tentatively diagnosed to be dystocia due to dicephalic dibrachius conjoined twin monster. To save the dam's life and relieve the fetus, obstetrical intervention and forced extraction were attempted, however the per-vaginal delivery was unsuccessful. Hence, it was decided to perform caesarean section to relieve the foetal monster.

Treatment

After properly restraining the animal in right lateral recumbency, the left lower flank site was aseptically prepared for the surgical procedure. Using 2% Lignocaine hydrochloride injection, local infiltration, an inverted 'L' block, and a line block were performed. Laparohysterotomy was performed as per the standard surgical procedures to locate the foetal limbs. By applying mild traction on the hind limbs, a dead male fetus was relieved. The uterus was closed using a catgut size-1 by Lembert's inversion suture pattern, followed by the closure of the muscle using a catgut size-2 suture by Ford interlocking pattern. As per the standard procedure, skin and subcutaneous tissue were sutured. Post-operative treatment included Dextrose normal saline 2 L, IV, Inj. Oxytetracycline @ 10 mg/kg b.wt. IV, Inj. Meloxicam @ 0.3 mg/kg b.wt. IM, Inj. Chlorpheniramine maleate @ 0.5 mg/kg b.wt. IM and Inj. Tribivet 10 ml IM for 5 days. Antiseptic dressing of the surgical wound was performed every other day and skin sutures were removed on the day 14 post-caesarean section. The cow recovered without any complications.

Gross examination of the foetal monster revealed that the conjoined twins were lying side-by-side with ventrolateral fusion, resulting in two heads, two forelimbs, two hind limbs and two tails. Based on the findings, it was named as parapagus dicephalus dibrachius dipus dicaudatus^[3] (Fig. 1). Radiographic examination revealed two vertebral columns (one for each dead calf) lying side-by-side but fused at the sacrum (Fig. 2).

Dissection of the fetus revealed that there were two hearts fused together, with one fully developed and the other partially developed (Fig. 3), two tracheae (one for each dead fetus) (Fig.4), two spleens, single thoracic cavity (rib cage) and hepatomegaly. (Fig. 5).



Fig 1: Parapagus Dicephalus Dibrachius Dipus Dicaudatus double monster calf



Fig 2: X-ray showing two adjacent vertebral columns (one for each calf) fused at the sacrum



Fig 3: Evidence of two hearts that are fused together



Fig 4: Presence of two trachea



Fig 5: Two spleens and hepatomegaly noticed

Discussion and Conclusion

Double or conjoined monsters usually arise from a single ovum and are monozygotic^[2]. Several genetic and environmental factors are believed to play an important role in the inability of twins to separate after fertilization resulting in the formation of a conjoined twin. These anomalies are believed to occur during the primitive streak development stage of the monster due to incomplete division of a single embryo into two parts. Vaginal delivery of conjoined twins is typically challenging due to their bigger size and fetotomy requires extensive manipulations, hence caesarean section is often a better option to preserve the life of the animal^[5]. In the present case, a parapagus dicephalus dibrachius dipus dicaudatus double foetal monster in a cow was successfully relieved through caesarean section.

Conflict of Interest

Authors have no conflict of interest in this study.

Acknowledgement

The authors are thankful to the Dean, Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry for the facilities provided to conduct the present study.

References

1. Boklage CE. Traces of embryogenesis are the same in monozygotic and dizygotic twins: not compatible with double ovulation. *Hum Reprod.* 2009;24:1255-1266.
2. Kumar P, Sharma A, Singh M, Sood P, Barman P. Dystocia due to a dicephalus monster fetus in a buffalo. *Buffalo Bull.* 2014;33:13-15.
3. Roberts SJ. *Veterinary Obstetrics and Genital Diseases.* 3rd ed. Woodstock, Vermont, USA: Published by the author; 1986.
4. Shukla SP, Garg UK, Pandey A, Dwivedi DP, Nema SP. Conjoined twin monster in a buffalo. *Indian Vet J.* 2007;84:630-631.
5. Singh N, Singh N, Singh B, Singh K. Management of dystocia in buffalo due to dicephalus ischiopagus tetrabrachius tetrapus monster calf. *Int J Curr Microbiol App Sci.* 2019;8(1):2398-2400.
6. Whitlock B, Kaiser L, Maxwell H. Heritable bovine fetal abnormalities. *Theriogenology.* 2008;70:535-554.