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## Non-surgical management of dystocia due to sternopagus twin monster in buffalo (*Bubalus bubalis*)

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### Abstract

Conjoined twins refer to the fetuses that are born physically connected to each other. These often result in dystocia at the time of parturition. The present case deals with the similar findings, in which dystocia due to *sternopagus* conjoined twins in a Murrah buffalo was reported. After critical analysis and proper diagnosis, it was decided to manage the obstetrical emergency by fetotomy. The non-surgical technique proved fruitful which led to the delivery of *sternopagus* conjoined twin monster and thus, the case was managed successfully through partial fetotomy.

**Keywords:** Conjoined twin, buffalo, fetotomy, *Sternopagus*

### 1. Introduction

The defect in fetus occurs in the early stages of its life. The factors responsible for development of fetus include genetics, physical, chemical or viral factors [1]. The conjoined twins or double monsters arise from an incomplete division of a fertilized embryo [2]. Most often conjoined twins with partial duplication of extremities and fusion in the anterior abdomen are encountered in bovine [3]. The delivery of such monsters is generally achieved by cesarean section [4], but cesarean operation is regarded as a complicated and unpredictable surgery in buffalo due to the occurrence of large numbers of postoperative complications. However, in the present case we were able to deliver a rare *sternopagus* - conjoined twin monster by partial fetotomy in a Murrah buffalo.

### 2. Case history and Clinical observations

An eight year old Murrah buffalo in third parity at full term pregnancy was presented to the Teaching Veterinary Clinical Complex of Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India for the treatment of dystocia with a history of labor since 12 hours. At presentation of the animal, water bags had ruptured about 4 hours before; however, no traction was applied at the field level by the local veterinarian who wisely referred the case to the University. After complete anamnesis, vaginal and rectal examinations were performed to reveal the nature and cause of dystocia. Two forelimbs and head of the dead calf were presented in the birth canal. On critical examination another calf was found in anterior presentation and dorso-pubic position attached to the sternum of the first calf and the case was diagnosed as *sternopagus* conjoined twin monster.

### 3. Treatment

The recommended 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 [5]. A lubricated loaded fetotome was then inserted deep into the passage following epidural anaesthesia (5 ml, 2% Lignocaine hydrochloride) and head, forelimbs and thorax of the first calf were extracted out in a single cut. After ample lubrication with a 1 per cent solution of sodium carboxy methyl cellulose the second calf was rotated to bring it into dorso-sacral position followed by traction that did not facilitate the delivery. The second cut was given on head and one forelimb of the second calf. The cut portion and the remaining fetus were extracted out smoothly afterwards (Fig. 1). Critical examination of fetal gross anatomy revealed that the point of attachment between two female calves was on ventrum

(sternum of both calves), the head of second calf was fused with its thorax with indistinguishable neck and other organs were in duplication. Following delivery, supportive therapy comprising of 5 litres of normal saline solution (IV), solution of calcium borogluconate together with magnesium and phosphorus 450 ml (slow IV), antibiotics (Ceftiofur 2 mg/kg b. wt., IM) and non-steroidal anti-inflammatory drugs (Flunixin megludine, 2 mg/kg b. wt., IM) was administered and other drugs viz. multivitamins, rumenototics, 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 fetotomy

#### 4. Discussion

Fetal dystocia is the most common cause of dystocia in bovine [6] and developmental anomalies affecting the bovine embryos have been well recorded [7, 8]. The conjoined twins, one of the congenital abnormalities found in animals [9, 10], are always identical twins of the same sex originate due to incomplete division of one fertilized egg [3] at the primitive streak development state [11]. The cause of such abnormality remains mystery, however, many genetics and environmental factors, viral infection, poisoning of dam or nutritional deficiency viz. vitamin A, folic acid etc. are considered to play role in development of such monsters [12]. The incidence of conjoined twins with almost complete duplication as observed in the present case is rare in bovine [13]. Singh *et al.* (2018) have reported a similar case of *sternopagus* conjoined twins with complete duplication of fetal structures in a Murrah buffalo which was managed through an emergency cesarean section [14], 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. It is believed that twins fail to separate into two fetuses after the 13<sup>th</sup> day post fertilization [15].

#### 5. Conclusion

It is concluded that fetotomy provides a good and feasible alternative over cesarean section to relieve dystocia caused by fetal monsters. Moreover, fetotomy technique is more economical than cesarean operation and preserves the future production potential of the animal.

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