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Clinical Article

SURGICAL MANAGEMENT OF DYSTOCIA DUE TO DICEPHALIC FETAL MONSTER IN PLURIPAROUS BUFFALO

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SUMMARY

A rare case of dystocia caused by a dicephalicmonster fetus in a pluriparous buffalo is reported in this study. This rare pathological duplication of head led to difficulty in normal parturition. The dystocia was resolved through a caesarean section (C-section), however, the life of dam couldn't be saved. This article discussed the clinical signs, diagnosis and surgical interventions providing insights into the management of abnormal fetal presentations in large ruminants.

Keywords: Buffalo, Caesarean section, Congenital anomaly, Dicephalic monster, Dystocia

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Buffaloes (*Bubalus bubalis*) are crucial livestock in many regions of the world due to their contributions to milk, meat and draft power. However, reproductive issues, particularly dystocia, can cause significant economic losses in buffalo husbandry. Dystocia occurs more frequently in primiparous buffalo but is not uncommon in pluriparous buffaloes as well (Dutt *et al.*, 2021). Dystocia can result from maternal or fetal factors. Fetal causes include fetal malposition, feto-pelvic disproportion and rarely the fetal anomalies. Some monstrosities are very rare and pose unique challenges in veterinary obstetrics. One such rare anomaly is a dicephalicfetus, where a single fetus has two heads. This condition can result in obstructive dystocia due to fetal abnormal size and shape, making normal vaginal delivery impossible. One such rarest case is discussed in this report.

An 8-year-old pluriparous Murrah buffalo in third parity was presented to the VCC of the University. The anamnesis revealed difficultly in parturition and ruptured water bag about 36 hours earlier without any progress in delivery. On initial clinical examination, the buffalo was visibly fatigued due to prolonged straining which later ceased and animal was in obvious discomfort. The animal was with slightly higher normal vital signs (heart rate: 90 bpm, respiratory rate: 35 breaths per minute, temperature: 101.8° F) at the time of examination. Vaginal examination revealed the ruptured fetal membranes, congested vagina and jam-packed obstruction in birth canal due to presence of two fore limbs and one hind limb. Upon further exhaustive palpation, two distinct head-like structures with two jaws were felt in the abdominal cavity. Based on these findings, a diagnosis of dystocia caused by a dicephalic monster was made.

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The diagnosis of obstructive dystocia due to a dicephalic monster was confirmed by vaginal examination. The malformation made the vaginal delivery impossible, necessitating the surgical intervention to prevent further complications;however, the prognosis was grave.

After diagnosing the condition, a decision was made to perform a caesarean section to relieve the dystocia. The surgical site was prepared aseptically and a standard left flank laparotomy approach was used for the caesarean section. The local anaesthesia was administered by infiltrating the left paralumbar fossa with 2% lignocaine hydrochloride in a line block pattern. Upon entering the abdominal cavity, the uterus was exteriorized. A longitudinal incision was made on the greater curvature of the gravid uterine horn. The dicephalic fetus was carefully extracted from the uterus.

Fetal examination revealed two fully formed heads joined at the base of the neck, sharing a single torso. Extracted fetus was female which was non-viable likely due to the extensive malformations. The detailed uterine examination revealed trauma and rupture of caruncles with profuse bleeding. The uterine incision was sutured using a double-layer inverting suture pattern (Cushing followed by Lambert). The abdominal muscles and skin were closed in standard layers. Post-operative care included administration of broad-spectrum antibiotics (Ceftriaxone, 10 mg/kg body weight, IM) and non-steroidal anti-inflammatory drugs (Meloxicam, 0.5 mg/kg body weight, IM) to manage pain and prevent infection. Oxytocin (20 IU, IM) was administered to promote uterine involution and expulsion of any remaining lochia. The buffalo was closely monitored for signs of infection, appetite, and rumination post-surgery. The buffalo showed poor recovery on next day

Fig. 1. Dicephalus buffalo calf monster

with lowered body temperature and exhibiting signs of hypo-volumic shock which could not get recovered and the animal died 48 h after the surgery.

The fetus with two fully developed head son single neck wherein one of the head is aligned with the cervical vertebrae is reported in present case (Fig. 1). Various problems during parturition has been encountered in different livestock species including cattle (Ahuja *et al.*, 2016), buffalo (Singhal *et al.*, 2011), small ruminants (Gupta *et al.*, 2010) and even in pet animals like dog and cat (Singhal *et al.*, 2017). Dystocia in buffaloes can arise due to a variety of causes, including maternal factors like uterine inertia, uterine torsion or narrow pelvic canal, and fetal factors such as malposition, oversized fetuses, or congenital anomalies. In buffaloes, dystocia due to congenital fetal anomalies is uncommon but represents a significant challenge in large animal obstetrics (Singhal *et al.*, 2018). Dicephalic fetal monster discussed in this article represents one of the rarest congenital abnormalities that can occur in ruminants. This anomaly arises during early embryonic development due to abnormal twinning or incomplete division of the embryonic disc, resulting in two heads attached to a single body (Roberts, 1986; Vegad, 2007). Such anomalies are not compatible with life, and in most cases, the fetus is non-viable (Singhal *et al.*, 2016). Dystocia in buffalo could be relieved through fetotomy (Singhal *et al.*, 2020), however, dicephalic fetal monster can not be delivered vaginally due to their abnormal shape and size and require the surgical interventions (Kumar *et al.*, 2014).

In this case, the prolonged labor and inability to progress was due to the mechanical obstruction caused by the two heads of the dicephalic fetus, which blocked the birth canal. Mishandling of the emergency case at local village level and time spent therein might have worsened the condition by causing uterine trauma or sepsis which ultimately led to demise of animal. Otherwise, the early recognition of fetal anomalies is crucial in dystocia cases to prevent maternal exhaustion, trauma, and potential life-threatening complications such as uterine rupture or septecemia.

Conclusion

The present case describes the clinical presentation, diagnosis and management of buffalo dystocia caused by a dicephalic fetus. The dystocia was successfully relieved by a caesarean section, however, the mishandling of case at farmer's doorstep and delayed presentation to veterinary clinics resulted in post-operative demise of buffalo which alarm and aware the farmer regarding the importance of timely surgical intervention in such rare obstetric cases.

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