



Surgical Intervention for Dystocia in a Mehsana Buffalo in Chhattisgarh

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Abstract— The present case involved a 6-year-old Mehsana buffalo presented in Chitapadariya village, Jaijaipur block, Sakti district of Chhattisgarh, with a history of prolonged second stage of labor lasting more than 12 hours, with rupture of the water bag 6 hours prior to examination. The animal was restrained in left lateral recumbency, sedated with low-dose xylazine (0.05 mg/kg IM), and administered epidural anesthesia with 2% lignocaine. A ventrolateral approach was adopted. The uterus was sutured with Vicryl No. 2 in an inverting suture pattern before being replaced into the abdominal cavity after thorough lavage with normal saline and metronidazole solution. Muscle and peritoneal layers were closed with Vicryl No. 2 in a lockstitch pattern, and the skin with Silk No. 2 in a simple interrupted pattern. Postoperative care included administration of Intacef-Tazo (10 mg/kg IM for 7 days), meloxicam (0.5 mg/kg for 5 days), and Tribivet (15 ml IM for 5 days). The surgical site was cleaned daily with povidone-iodine, and skin sutures were removed after 10 days. The buffalo recovered uneventfully with no postoperative complications.

Keywords— Dystocia, Cesarean section, Field surgery, Mehsana Buffalo, Chhattisgarh.

I. INTRODUCTION

In buffaloes (*Bubalus bubalis*), dystocia occurs more frequently than in cattle, primarily due to factors like a narrow pelvic canal, weak uterine contractions, oversized fetuses, abnormal fetal presentations, and various management shortcomings. The condition is observed more often in first-calving heifers than in multiparous buffaloes. The occurrence of dystocia is generally higher in buffaloes compared to other domestic animals [1]. The causes of dystocia are broadly categorized into maternal and fetal factors. In buffaloes, maternal dystocia has been reported to occur more frequently [2], although some studies have indicated a greater prevalence of fetal dystocia in this species [3]. A cesarean section is considered a suitable option in cases of dystocia when delivery of the calf through fetal manipulation and extraction is not possible. In bovines, eight surgical approaches are available for performing a cesarean section: standing left paralumbar celiotomy, standing right paralumbar celiotomy, recumbent left paralumbar celiotomy, recumbent right paralumbar celiotomy, recumbent ventral midline celiotomy, recumbent ventral paramedian celiotomy, ventrolateral celiotomy, and standing left oblique celiotomy [4].

The Mehsana buffalo is an important dairy breed in India, and dystocia in this breed can result in significant economic losses if not managed promptly. This case report describes the successful management of dystocia in a Mehsana buffalo via cesarean section under field conditions.

II. MATERIALS AND METHODS

A 6-year-old Mehsana buffalo from Chitapadariya village, Jaijaipur block, Sakti district of Chhattisgarh was presented with a history of prolonged second stage of labor lasting more than 12 hours. The owner reported rupture of the fetal membranes

approximately 6 hours prior to presentation, followed by repeated but unsuccessful attempts to deliver the fetus manually. There was no history of systemic illness, anorexia, or abnormal behavior before the onset of parturition. The parity of the animal was not specified by the owner.

A thorough clinical examination was carried out, including assessment of general health parameters such as rectal temperature, heart rate, respiratory rate, hydration status, and mucous membrane color, which were found to be within normal physiological limits. The per-vaginal examination revealed an abnormal fetal disposition (posterior presentation with bilateral hip flexion) with no likelihood of successful correction through manual manipulation or traction, indicating dystocia unsuitable for vaginal delivery. The fetus was determined to be stillborn based on absence of fetal reflexes and putrefactive changes. Based on the clinical findings and prolonged duration of labor, a decision was made to perform a cesarean section. The animal was properly restrained in lateral recumbency, and the surgical site was prepared following standard aseptic procedures. The cesarean operation was carried out using established obstetrical and surgical techniques under appropriate anesthesia.

III. RESULTS

3.1 Anesthesia and Restraint

The animal was sedated with xylazine at a low dose of 0.05 mg/kg administered intramuscularly. Xylazine administration causes bradycardia and reduction in salivary secretions [5]. Epidural anesthesia was performed with 60 ml of 2% lignocaine [6]. The animal was restrained in left lateral recumbency with both forelimbs and hind limbs tied separately. Adequate fluid replacement was administered with dextrose normal saline.

3.2 Surgical Site Preparation

The incision site was prepared on the ventrolateral aspect. Hair was clipped from a wide area around the intended incision site, and the area was scrubbed with antiseptic solution povidone-iodine (Fig. 1).



FIGURE 1: Site preparation

3.3 Surgical Procedure

The operative site was prepared by thoroughly shaving and scrubbing, followed by local infiltration anesthesia at the surgical site using 2% lignocaine. A skin incision was made, and the skin was carefully separated from the subcutaneous tissue. The underlying muscles were incised with care to avoid major blood vessels. Muscle layers were separated by blunt dissection to expose the peritoneum.

The uterus, usually covered by omental fat, was identified and an incision was gently made along the greater curvature of the uterus, avoiding the cotyledons. The fetus was removed promptly (Fig. 2). The uterine margins were rinsed with sterile normal saline. The placenta was removed.



FIGURE 2: Fetal extraction from the uterus



FIGURE 3: After completion of suturing

Closure of the uterus was performed using absorbable suture material (Vicryl No. 2) in a Cushing inverting pattern. The uterus was then replaced into the abdominal cavity after thorough lavage with normal saline and metronidazole solution. Any contaminants in the peritoneal cavity were removed by flushing with sterile normal saline and Metrogyl, and by manually scooping out debris. Before final closure, antibiotic pessaries were placed inside the uterus.

The muscle and peritoneal layers were sutured together using Vicryl No. 2 in a lockstitch pattern, and antibiotic powder was applied between suture layers to prevent infection. The skin was closed with Silk No. 2 in a simple interrupted pattern (Fig. 3).

3.4 Postoperative Care

The success of the operation depends on postoperative care. Antibiotics and anti-inflammatory drugs were administered postoperatively to combat toxemia. The following regimen was administered:

- Intacef-Tazo: 10 mg/kg bodyweight intramuscularly for 7 days
- Meloxicam: 0.5 mg/kg bodyweight intramuscularly for 5 days to prevent inflammation and adhesion formation
- Tribivet (15 ml): intramuscularly for 5 days

Owners were advised to clean the operative site daily with betadine for 2 weeks. The surgical site healed without any signs of infection or complications. The buffalo recovered uneventfully, with normal appetite and activity resumed within 5 days post-surgery. Sutures were removed 10 days postoperatively.

IV. DISCUSSION

Dystocia in buffaloes is a critical condition requiring prompt diagnosis and intervention. In the present case, the prolonged second stage of labor (>12 hours) with unsuccessful manual attempts necessitated surgical intervention. The choice of the ventrolateral approach was based on the animal's recumbent positioning and the need for adequate exposure of the reproductive tract.

The use of low-dose xylazine (0.05 mg/kg IM) provided adequate sedation while minimizing the risk of adverse effects such as bradycardia and reduced salivary secretions, as previously documented [5]. Epidural anesthesia with 2% lignocaine provided effective regional analgesia for the surgical procedure [6].

The ventrolateral approach adopted in this case allowed good access to the uterus while avoiding major blood vessels. The use of Vicryl No. 2 (an absorbable suture material) for uterine and muscle layer closure minimized the need for future suture removal and reduced the risk of adhesion formation. The Cushing inverting pattern used for uterine closure is considered standard for preventing leakage of uterine contents into the peritoneal cavity.

Postoperative management is crucial for successful outcomes. The administration of Intacef-Tazo (a combination of ceftriaxone and tazobactam) provided broad-spectrum antimicrobial coverage, while meloxicam effectively controlled inflammation and pain. Tribivet, a multivitamin preparation, supported recovery by addressing nutritional deficiencies that may arise during the stress of surgery and recovery.

The absence of postoperative complications in this case highlights the importance of aseptic technique, appropriate antibiotic therapy, and diligent wound care. The successful outcome demonstrates that cesarean section can be performed effectively under field conditions with proper planning and execution.

V. CONCLUSION

Dystocia in buffaloes is a critical condition requiring prompt diagnosis and intervention. When vaginal delivery is not feasible, cesarean section is an effective life-saving procedure. In the present case, the buffalo recovered uneventfully with no postoperative complications. Successful outcomes depend on proper surgical technique, aseptic management, and adequate postoperative care, which collectively ensure recovery and improved reproductive performance. Field veterinarians should be trained in basic cesarean section techniques, as timely surgical intervention can save both the dam and calf.

CONFLICT OF INTEREST

The authors have no conflict of interest.

AUTHOR'S CONTRIBUTION

SV, GD, and SD carried out the diagnosis, treatment, and post-operative care. SV and GD outlined the draft manuscript and were involved in the revision of the manuscript.

DATA AVAILABILITY STATEMENT

All essential data related to this study are contained within the article. Additional raw data can be obtained from the corresponding author upon request.

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