Cesarean section in *Murrah* buffaloes

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**ABSTRACT**

Cesarean section in buffaloes is an emergency operative procedure being performed principally for uncorrectable uterine torsions and for delivery of fetal monsters. Ten cases of uncorrectable uterine torsion and fetal abnormalities were reported at TVCC, IIVER, Rohtak. It was decided to perform cesarean section in all the cases. Buffaloes were restrained in left lateral recumbency with both forelimbs and hindlimbs tied separately. Cesarean sections were performed under local infiltration analgesia using 2% lignocaine HCl and sedation with triflupromazine. Uterus were sutured using absorbable suture material with chronic catgut no. 2 in all the cases. Before suturing, available antibiotic pessaries were placed in the uterus. Post-operatively fluid therapy (5 days), broad spectrum antibiotics (5 days), NSAIDS (3 days) along with multivitamin (3 days) were administered. All animals except one recovered uneventfully.

**Key words:** Buffaloes, Cesarean, Fetal monsters, Pessaries.

**INTRODUCTION**

Cesarean section is potentially indicated in cases of dystocia when a calf cannot be delivered by fetal mutation and extraction. There are eight available surgical approaches for the bovine cesarean section: the standing left paralumbarceliotomy, standing right paralumbarceliotomy, recumbent left paralumbarceliotomy, recumbent right paralumbarceliotomy, recumbent ventral midline celiotomy, recumbent ventral paramedioceliotomy, ventrolateral-celiotomy and the standing left oblique celiotomy (Schultz et al, 2008). Numerous variables determine whether the procedure is successful. The most important is the health status of the dam and calf at the time of surgery. For this reason, it is worthwhile to categorize cesarean section as elective, emergency (nonemphysematous), or emphysematous procedures (Newman and Anderson, 2005). The fetotomy/cesarean section dilemma has been based on poor dam survival rates and poor fertility (Singh et al, 2013). There are maternal and fetal indications for performing a cesarean section. Maternal indications include immature heifers, pelvic deformities, failure of cervical dilation, uncorrectable uterine torsion, uterine tear, hydrops, and prepartum paralysis (Campbell and Fubini, 1990). Fetal indicators include normal and pathologic fetal conditions. Normal fetal conditions consist of absolute fetal oversize (relative to a normal maternal pelvis size) and malposition. A high-value calf, such as an embryo transfer or clone, may be an indication for an elective cesarean section. Pathologic fetal conditions include fetal anasarca, schistosomus reflexus, hydrocephalus, conjoined twins, emphysematous, mummification, and prolonged gestation (Campbell and Fubini, 1990). Present article describes successful cesareans in *Murrah* buffaloes with uterine torsion of longer duration in some cases (uncorrectable by rolling of dam) and fetal causes (emphysema, mummified fetus) in other cases in recumbent ventral paramedian approach underlocal infiltration analgesia using 2% lignocaine HCl and sedation with triflupromazine.

**Case History and Observations:** Ten cases of uncorrectable uterine torsion and fetal abnormalities (emphysema, mummified fetus) were reported at Teaching Veterinary Clinical Complex, IIVER, Rohtak. Owners reported unsuccessful attempts of delivering fetus in all the cases in field. It was decided to perform cesarean section in all the cases after observing current position as there were no chances of normal parturition. Buffaloes were restrained in left lateral recumbency with both forelimbs and hind limbs tied separately. Cesarean sections were performed under local infiltration analgesia using 2% lignocaine HCl and sedation with triflupromazine.

**Surgical management**

**Preoperative preparation:** Preoperatively administration of sufficient fluid replacements (D.N.S.), corticosteroids (Dexamethasone) and hematologic examination were Carried out in all the cases. Buffaloes with uterine torsion showed normocytic, normochromic anaemia and neutrophilia. As all the operations were performed on an emergency basis, it was not possible to fasten the animal prior to surgery. Cesarean sections were performed under local infiltration analgesia using 2% lignocaine HCl and sedation with triflupromazine (5 mg/100 lb B. Wt. I.M.).

Animals were restrained in left lateral recumbency with both forelimbs and hind limbs tied separately. Right paramedian approach lateral and parallel to the milk vein was used in all the cases.
Operative procedure: The operative site was prepared by shaving and scrubbing and local infiltration anesthesia is infused at operative site using 60-80 ml of 2% lignocaine. The skin was incised and separated from the subcutaneous layer. The muscles were then incised taking care to avoid major vessels (Fig. 1). After separation of muscles by blunt dissection the peritoneum which is white glistening layer was cut. The omental fat covers the uterus which was then incised (Fig. 2). The uterus was located and brought to the operative site. The uterus was packed on the sides by surgical drapes. Then uterus was incised over the greater curvature avoiding the cotyledons (Fig. 3). Then fetus was removed as quickly as possible (Fig. 4) and margin of uterus were washed with sterile normal saline. The placenta was removed in all the cases as much as possible. The uterus was sutured using absorbable suture material (Catgut no. 2) employing lambert-cushing suture pattern. After uterus suturing gloves were changed to minimize abdominal contamination. Then uterus was replaced back in the abdomen after thorough washing. The contaminants that entered in the peritoneum were removed by infusing the peritoneal cavity with normal saline and scooping out the contents manually. Before final closure placement of antibiotic pessaries inside the uterus was done in all the cases. The muscles and peritoneal layers were sutured using catgut no. 2 in continuous pattern. Antibiotic powder was sprinkled between the suture layers in all the cases to avoid infection. The skin was sutured in simple interrupted pattern using silk no. 2. A sterile drape was applied over the suture line (Fig. 5) and protected by applying a cloth over the abdomen.

Postoperative care: The success of operation depends on postoperative care. Sufficient fluid replacement, antibiotics and anti-inflammatory drugs were administered postoperatively to combat toxemia. D.N.S. (3 lt.) I.V. for 5 days, Procaine penicillin G 22000 U/Kg I.M. along with metronidazole (10 mg/kg) I.V. for 7 days, Melonex (0.25 mg/kg B. Wt.) I.V. for 5 days to prevent inflammation and adhesion formation, Avil (10 ml) I.M. for 3 days and Tribivet (20 ml) I.V. for 5 days were administered postoperatively. Owners were advised to clean operative site daily with betadine for 2 weeks. Sutures were removed 2 weeks postoperatively in each case.

Postoperative complications: The most common operative complication was abdominal contamination in 3 cases which seems unavoidable as all buffaloes due to previous handling.
developed adhesions that prevent bringing of uterus to the operative site thus incision inside the abdominal wall. Postoperative complications included seroma formation, metritis and low milk production. Fluid accumulation at the operative site was observed in all the cases which disappeared after 1 week period. All the animals survived except one. One animal died due to poor handling and rolling of animal in field previously.

The cesarean section dilemma has been based on poor dam survival rates and poor fertility, however, many reports depicted that dam survival is high when the operation is performed early without previous handling (Purohit et al., 2011). In present study operation was performed as early as possible. Predominant reason for which cesarean section is performed in buffalo species is uterine torsion of longer duration and uncorrectable rolling of dam (Matharu and Prabhakar, 2001). Similar findings were found in present study. Preoperative preparation included administration of sufficient fluid replacements, antibiotics and corticosteroids as described by Purohit et al., 2012. The principal operative site is left paramedian approach lateral and parallel to milk vein (Purohit et al. 2013). Right paramedian approach lateral and parallel to the milk vein was used in all the cases in present study as operations were performed more comfortably in this approach in buffaloes. Left oblique ventrolateral site is second most commonly used operative site for cesarean sections in buffalo and considered by a few surgeons a better operative site due to lesser postoperative complications and minimum contamination of operative site during sternal recumbency (Verma et al., 1974 and Singh et al., 1978). Both triflupromazine and chlorpromazine have been used for sedation of buffaloes for cesarean sections (Prabhakar et al., 2007). Xylazine administration cause bradycardia and reduction in salivary secretions (Peshin and Kumar, 1983). Cardiovascular and respiratory depressant effects produced by high dose of guaifenesin (Agarwal et al., 1983). Reports on satisfactory use of long lasting inhalant anesthesia in water buffaloes have appeared in the literature however their use is dictated by availability of proper facilities (Singh et al., 2012). Cesarean sections were performed under local infiltration analgesia using 2% lignocaine HCl and sedation with triflupromazine in present study. Peritonitis is the most frequent postoperative complication that follows bubaline cesarean section and usually appear within 72 h of the operation (Purohit et al., 2012). Peritonitis was not found in any case of present study. The dam survival rate of 36 to 100 per cent has been recorded following cesarean section in dystocia affected buffaloes (Phogat et al., 1992). The time elapse since dystocia onset and the performance of operation is the important determinant of the outcome. Dam survival rate of 90 per cent was recorded in present study.

REFERENCES


