

## COMBINED LOCAL ANALGESIC BLOCK OF STANDING C -SECTION IN A COW

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### ABSTRACT

An eight year old crossbred pregnant cow was referred from field veterinarian with a complication of incomplete cervical dilatation. The caesarean surgery was performed under combined paravertebral anaesthesia and inverted L block using lignocaine. The surgical site was prepared aseptically for surgical procedure. An oblique incision on skin was made in the middle of the left flank region, followed by subcutaneous tissue, external and internal abdominal oblique, transverse abdominal muscle and peritoneum. The uterus was exteriorized and cut open to deliver a foetus. The uterus, muscles and skin were sutured back with standard procedure. The animal was given proper post-operative care. The animal recovered completely without any complications in 15 days.

**Keywords:** Crossbred cattle, incomplete cervical dilatation (ICD), Flank Incision,

Field C-section, Inverted “L” block, Para vertebral anaesthesia

### INTRODUCTION

Caesarian section, also called laparohysterotomy, means the extraction of the foetus or foeti from the dam, through a surgical opening in the abdominal wall and the uterus. It is commonly indicated in cases of dystocia when a calf cannot be delivered by normal parturition cascade. The selection of an appropriate approach depends on the type of dystocia, the health status of the cow, the environmental conditions, the availability of assistance, and the surgeon’s preference.

The indications for performing a caesarean section include maternal and fetal factors. Maternal indicators include immature heifers, pelvic deformities, failure of cervical dilation, uncorrectable uterine torsion, uterine tear, hydrops, a long gestation period, and prepartum paralysis

(Newman, 2008; Schultz *et al.*, 2008). The flank surgical approach of C-section has been used for ease as procedure and limited complications (Pascoe *et al.*, 1981; Loren *et al.*, 2008). The current case report is prepared with the aim of describing the combined analgesic block and surgical management of dystocia in crossbred cow due to incomplete cervical dilation.

### MATERIALS AND METHODS

An eight year old crossbred pregnant cow was referred to a practicing veterinarian with a complication of incomplete cervical

dilatation at Kaalaramman Village, Dhamodhrahalli Post, Pochampalli Taluk, Pochampalli, Krishnagiri District, Tamil Nadu. The cow was restrained adequately and the skin surface on the left paralumbar fossa was prepared aseptically with water and Chlorhexidine 6 % solution. Inj. Streptopenicillin 5 g intramuscularly and Inj. Meloxicam 10 mL (20 mg /mL) intramuscularly were given preoperatively towards antibiotic coverage and preemptive analgesia.

In this technique, 2% Lignocaine



Paraverebral local anesthesia



Augmented inverted L block



Extraction of foetus



After skin suturing

**Fig1: Local naesthetic administration in the caesarean section**

was used around 15 mL per each paravertebral space (T13, L1 to L2) using 18 gauge x 3.50" spinal needle (1.20mm x 90 mm), BD Quincke Needle, Becton Dickson India Pvt Ltd, S.A. Camino d Valdealiva, s/n, 28750 San Agustin del, Guadalix, Madrid, Spain. The needle was inserted half way between the intervertebral transverse process and the needle was slightly angled to reach and deposit lignocaine. At last 40 ml of 2% Lignocaine was infiltrated for inverted L-block at the left paralumbar fossa (LPF) to desensitize and to induce sufficient analgesia enclosing the site of incision and waited for 10 min. The effect of anaesthesia confirmed by scoliosis and absence of pin prick reflex at LPF.

A sharp oblique skin incision was made on the left flank region approximately below the lumbar transverse process. After blunt dissection of the skin from the subcutaneous tissue, the incision was continued through the external and internal abdominal oblique, transverse abdominal muscle and peritoneum. Then all muscular layers together with skin were grasped with hand to get sufficient surgical field and exposure to the uterus. A careful exteriorisation of uterus was done.

After the fixed position of the calf, gentle sufficient incision made on the uterus enough to remove foetus. Then, the live calf was taken out, but the placenta

was inseparable from uterus. After routine washing of uterus, the uterus was closed using single layer Cushing with No- 2 size chromic Catgut.

The peritoneal incision was closed with a simple continuous pattern using No-2 size Catgut. Besides, all three abdominal muscular layer were separately closed with simple continuous pattern using No-2 size sterile chromic Catgut. Later, the skin was closed using Nylon No-2 with cross mattress pattern.

The dressing of the wound was done from second day of post-operative up to 5-days until it was completely healed. After two weeks of follow up, the wound healed properly, animal recovered uneventfully, skin sutures were removed.

## **RESULTS AND DISCUSSION**

The main goals of the caesarean section are preservation of the cow, calf and the future reproductive efficiency of the cow (Newman, 2008; Fubini and Ducharme, 2016). There are various surgical approaches for bovine caesarean section: Each has its own advantages and disadvantages. Most surgeons prefer left paramedian celiotomy to perform caesarean sections in the standing cow. In most cases, the left oblique approach is preferable because of less peritoneal cavity contamination and with less interference of

intestine during the uterus exteriorization (Schultz, *et al.*, 2008; Fubini and Ducharmen, 2016).

According to different research output 14.8 % of cows were becoming recumbent intra-operatively during standing caesarean section. Cows that remain standing during the procedure have a better chance of survival, with reports of 91-94% cow survival rate and a 95-100% calf survival rate. In the author's experience, cows that fall down intra-operatively were more likely to develop peritonitis and experienced greater post-operative mortality compared with cows that remained standing during the surgery. (Schultz, *et al.*, 2008; Singh, *et al.*, 2013).

Further, post-operative complications associated with paralumbar incisional infections are between 1.3% and 8.2% and dehiscence 3.8%. The occurrence of subcutaneous emphysema has been reported between 0% and 41%. Fortunately, no post-operative complication was noticed in the present animal (Haben, 2019).

## CONCLUSION

The caesarean section via standing flank incisions requires little post-operative care and attention compared with other approaches especially ventral approaches. The analgesia was augmented to mitigate intra-operative recumbency. Cows with

flank incisions often do not require stall rest that provides restricted activity and can be rebred using a bull without undue concern regarding abdominal wall herniation (Newman, 2008; Fubini and Ducharme, 2016). In this particular case report, the standing caesarean section under augmented analgesic approach resulted early recovery and positive outcomes of the procedure without any complications.

## REFERENCES

- Cattell, J. and Dobson, H. 1990. A survey of caesarean operations on cattle in general veterinary practice. *Vet. Rec.* **127**: 395-399.
- Dehghani, S. 1982. Cesarean-section in cattle-complications. *Compendium on continuing education for the practicing veterinarian*. **4**:S387-S392. doi: 10.1016/j.cvfa.2008.02.009.
- Fubini, S.L. and Ducharme, N. 2016. *Farm Animal Surgery-E-Book*. Amsterdam, Netherlands: Elsevier Health Sciences.
- Loren, G.S., Tyler, J.W., Moll, H.D., and Constantinescu, G.M. 2008. Surgical approaches for cesarean section in cattle. *Can. Vet. J.* **49**: 565-568.
- Newman, K.D., and Anderson, D.E. 2005. Caesarean Section in Cows. *Vet. Clin. Food Anim.* **21**: 73-100.

- Newman, K.D. 2008. Bovine cesarean section in the field. *Vet. Clin. North America: Food Anim. Pract.* **24**: 273-293.
- Pascoe, J.R., Meagher, D.M., and Wheat, J.D. 1981. Surgical management of uterine torsion in mare: a review of 26 cases. *J. Am. Vet. Med. Assoc.* **179**: 351-354.
- Schultz, L.G., Tyler, J.W., Moll, H.D., and Constantinescu, G.M. 2008. Surgical approaches for cesarean section in cattle. *Can. Vet. J.* **49**: 565-568.
- Singh, G., Pandey, A., Agnihotri, D., Chander, S., Chandolia, R., and Dutt, R. 2013. Survival and fertility rate in buffaloes following caesarean section and mutation with/without partial fetotomy. *Indian J. Anim. Sci.* **83**: 251-253.
- Fesseha, H., Negash, G., and Gebrekidan, B. 2019. Caesarean Operation in Cow due to Prolonged Pregnancy. *Vet. Med. Open J.* **5**: 9-13.