

Case Report

Cesarean Sections through Flank Incision in Exotic Cattle Breed

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Abstract | A 5 year old heavily pregnant Jersey cow, suffering from acute abdominal pain since last 12 hours was subjected for caesarean section at Veterinary Teaching Hospital, Department of Animal Health, Faculty of Animal Husbandry and Veterinary Sciences, University of Agriculture Peshawar-Pakistan. The surgery was performed under paravertebral anesthesia at T13, L1-3 using xylocaine 2% in standing position after proper sedation. The operated site was prepared for aseptic surgical procedure. A vertical incision was given in middle of the left flank region. Twin fetuses (one male and female) were surgically removed with care to avoid proliferation of uterine contents into the peritoneal cavity. Penicillin powder was dusted into the surroundings area of the uterus. The cow was treated with antibiotics, analgesics and liver tonics during the first week post-surgery. Local antiseptic dressing was performed using povidone-iodine daily for one week and skin sutures were removed at 14 day post-operation.

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Introduction

The flank surgical approach is still useful for some procedures to render abdominal complications in ruminants despite of its limitations for some surgical procedures. Although it is not recommended for patients with acute abdominal pain because it provides only limited exposure. It has been used in some instances, for example, the flank approach may be used for standing exploratory laparotomy, and correction of uterine torsion (Pascoe et al., 1981; Loren et al., 2008). Cesarean section (C-section) is a surgical procedure, where an incision is given through the abdominal wall in a flank area to deliver a calf from the animal. It is necessary in adult dairy cattle when normal parturition in animal is too difficult or could endanger dam life or the life of calf. C-sections are performed in domestic animals for the same rea-

sons as they are in humans-if the foetus is large in relation to the mother's pelvis, if the fetus is lying in an abnormal presentation, if the fetus is distressed or when calf is oversized (immaturity of dam, double muscling, genetic mismatching and prolong gestation). While other indications for C-section are inadequate cervical dilation(not enough relaxation of the cervix muscles), abnormal pelvic bone conformation (shape) in the cow, relative or absolute narrowness of pelvic canal (immaturity of dam, traumatic pelvic deformity), problems with uterine position or uterine function, abnormalities of the cow's uterus or vagina, fetal deformity (e.g. schistosoma reflexus), atresia or hypoplasia of maternal vagina, and abnormal fetal position or posture (Noakes et al., 2001; Weaver et al., 2005). The decision on whether to perform a fetotomy or a cesarean section is indicated by whether the calf is alive, the availability of operating space in the

cow's pelvis, whether the cervix is open and access to restrain facilities, perceived value of the cow and calf and the importance of future cow fertility.

Material and Method

History and Clinical Examination

To the knowledge of authors, occurrence of dystocia in exotic cattle breed in North-western part of Pakistan was not reported previously. A five years old age Jersey cow was brought to the Outdoor Clinic of the Veterinary Teaching Hospital, Department of Animal Health, Faculty of Animal Husbandry and Veterinary Sciences, The University of Agriculture Peshawar-Pakistan for Caesarian-section. The patient history revealed that her first calf was died due to intestinal intussusception. Clinically the presented cow was dull and anorexic with distended abdomen and losed watery feces having foul smell. However rectal temperature was 104°F, but no sign of parturition was observed. Cow was not responding to conservative treatment, therefore it was subjected for cesarean section.

Surgical Treatment

The paralumbar fossa area was clipped and the immediate area of the skin incision was shaved and prepared for aseptic surgery. The operation site was prepared aseptically using hydrogen peroxide then scrubbed with povidone-iodine solution (Brooke, Phamaceutical Laboratory, Pvt Karachi Pakistan). The operating area was anesthetized by infiltrating with 2% xylocain hydrochloride as paravertebral anesthesia at T13, L1-3 after proper sedation with xylazine hydrochloride (Anderson and Muir. 2005; Weaver et al., 2005; Shah et al., 2013, 2014). Left paralumber flank was covered with sterile drapes and 40 cm vertical incision was made in middle of the flank. Only 3 abdomen content was pushed forward and rumen was also forward and greater curvature of gravid uterine horn was exposed towards the abdominal incision site. Then uterus was incised to permit entry of hands into the uterus to locate fetus limbs and avoided to separate placenta form maternal caruncles permitting umbilical cord to rupture naturally. After delivery holding uterine incision in flank wound and removed loosed protruding portions of placenta, and left remainder in situ. Evacuation of fetal and other contaminating fluids from abdominal cavity is usually unnecessary. Uterine pessaries 5 Intrauterine pessaries (Utenol "sulphathizole 1750mg; penicillin G, 100,000 iu; streptomycin sulphate 50mg; ethinyl estradiol"; Star laboratory (PVT) LTD Lahore, Pakistan) were used as prophylaxis, and

uterus was washed with saline solution 0.9% to relieve dehydration. The uterus wall was closed with continuous cushing suture pattern, followed by continuous Lembert suture pattern using vicryl suture (Polyglactin 910), and chromic catgut (Ethicon, Inc, New Jersey USA) (Figure 1). Surgical field was dusted with procaine penicillin powder and administered parenteral antibiotic along with others medication on required base. Skin incision closed by simple interrupted suture pattern with multifilament silk.



Figure 1: Uterus wall closed with Cushing suture pattern followed by Lembert suture pattern

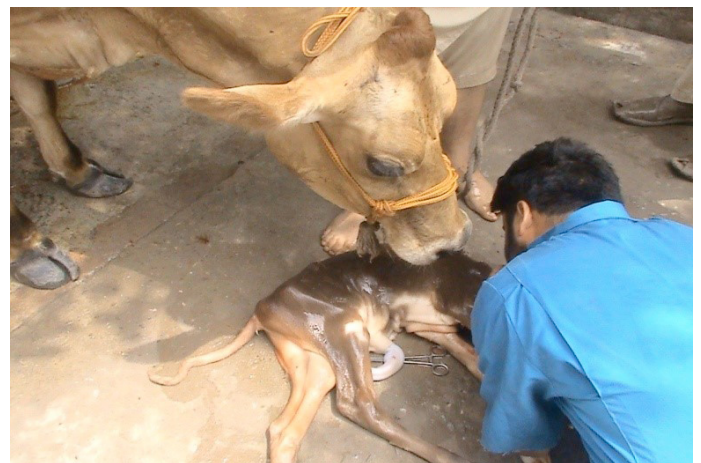


Figure 2: The dam allowed to lick her calf after delivery through cesarean section

Postoperative Care

Postoperative care included parenteral administration of Amoxicillin (Amoxivet, (150mg/ml) ICI, Pakistan Limited) at the dose of 15mg/kg for five days, Vetafenic Plus (NSAID, Meloxicam 7.5/ml, S.J. & G. Fazul Elahi (PVT) LTD, E-46, S.I.T.E., Karachi, Pakistan) at the dose of 2.5mg/kg for three days as post-operative analgesia. The dam was allowed to lick calf (Figure 2). Placenta was expelled 24 hours after surgery, and rectal temperature was checked twice a

day. Local antiseptic dressing was performed using povidone-iodine daily for one week and skin sutures were removed at 14 day post-operation.

Outcome

Skin sutures were removed 10 days post-surgery. After discharging the animal, telephone follow up was done at 6 and 12 months post-surgery and animal condition was satisfactory.

Discussion

In our study a vertical incision was given in middle of the left flank region. Two fetuses (i.e., one male and one female) were surgically removed with care to avoid proliferation of uterine contents into the peritoneal cavity. It is generally known that at the time of birth male calves are heavier than female calves, this can partly be explained by the fact that bull calves generally have a 1-2 days longer gestation length, during which time they continue to grow (Echternkamp, 1993; Zollinger and Hansen, 2003). McGuirk et al. (1998) showed that the frequency of seriously difficult calving's was greater in male calves, which were larger and had a better conformation (for subsequent rearing) than heifer calves. Another study reported that a bull calves of the Simmental breed had gestation lengths of about 1 day longer, and were 3.0 kg heavier at birth; their birth was associated with a 0.23 U lesser calving ease score, and required 12.7% more assistance (Burfening et al., 1978a). The effect of the calf's gender on the incidence of assisted births and on calving ease was greater in young than in older cows (Laster et al., 1973; Burfening et al., 1978b). Our results correspond well with the data on other breeds in the fact that bull calves were heavier compared to female calves. Wilson and Rossi (2006) found that calves born in the fall weighed less than calves born in the winter and spring months, which is most likely caused by a higher nutrient intake due to supplementary feeding of the cow. Deutscher et al. (1999) described that calf body weight (BW) increased 1 pound, and calving difficulty was increased by 2.6% for each degree Fahrenheit and the average winter temperature is reduced. Colburn et al. (1996) also showed an influence of temperature on BW which, result in larger BWs and more calving difficulties following winter temperatures which were below average. Casas et al. (1999) indicated that in double-musled animals, the Body Weight (BW) of the calf has a significant effect on calving difficulty, as their results showed an increase of 0.7% in calving

difficulty per kilogram increase in BW; however, only the homozygous double-musled calves had a greater calving difficulty.

Conclusion

Cesarean section can be safely performed under paravertebral anesthesia using xylocaine hydrochloride as local analgesic in standing position after proper sedation with xylazine hydrochloride. However a vertical flank incision can be used for C-section in cattle in field as well in hospital conditions, because this procedure may improve future fertility, health and production of the animals.

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Authors' Contribution

Dr. Zahir Shah performed surgery; Dr Ahmad Nawaz Tunio assists in article writing and Shakoor Ahmad, Ijaz Ahmad, Javid Ali and Sher Bahader Khan helped in anesthesia and surgical procedure.

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