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Case study

A RARE CASE OF UTERINE TORSION IN A FIVE MONTHS PREGNANT COW AND ITS SUCCESSFUL MANAGEMENT THROUGH LEFT FLANK CAESAREAN SECTION

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ABSTRACT
Current case study describes successful management of left side post-cervical uterine torsion in five months pregnant non-descript primiparous cow through left flank Caesarean section.

KEY WORDS: Caesarean section, early gestation, left flank, surgical management, uterine torsion.

INTRODUCTION

Uterine torsion is defined as twisting of uterus along its long axis. Occurrence of uterine torsion has been reported in various species *viz.* buffalo, cattle, doe, ewe, camel and mare. But it possesses important cause of maternal dystocia in cattle (Cergolj *et al.*, 1999) and buffalo (Prabhakar *et al.*, 1994). The incidence of uterine torsion in cattle has been reported 3–11% and 4–28% in cases handled under field conditions or at the referral hospitals respectively (Laven and Howe, 2005). It generally occurs during late 1st stage or early 2nd-stage labor (Arthur *et al*., 1996) but reported prepartum also (Frazer *et al*., 1996). The etiology of the condition is not well understood. But there are certain destabilizing factors which make the uterus unstable during the later stage of pregnancy (Ghuman, 2010). Among maternal destabilizing factors the anatomical arrangement of broad ligament in bovines contribute mainly for uterine torsion as attachment of broad ligament is sub-ilial and limited to only ventral curvature leaving dorsal curvature free predispose to rotate the uterus on its axis (Roberts, 1986; Noakes *et al.*, 2001). In fetal destabilizing factors, inordinate fetal movement at later stage of pregnancy plays an important role in predisposing the dam for uterine torsion (Duncanson, 1985; Baker, 1988). Site of torsion may be either pre-cervical or post-cervical but most commonly occurs post-cervical due to the absence of muscles in the cervical area of broad ligaments (Singh, 1991) in bovines. Diagnosis is based on per-vaginal and per-rectal examination. In pre-cervical torsion the broad ligaments ipsilateral to side of torsion is pulled vertically downward beneath the uterus, whereas the contralateral broad ligament is tightly stretched diagonally above the uterus (Pearson, 1971). In post-cervical torsion spiral folds or twists present in the vaginal wall along with a non-accessible cervix if post-cervical torsion reaches more than one revolution (>180º) (Drost, 2007). Choice of treatment depends upon experience of veterinarian, severity of torsion and condition of dam and involves per-vaginal fetal rotation or rolling of dam or caesarean section. Current case study reports a rare case of post-cervical left side uterine torsion in five months pregnant primiparous non-descript cow and its management through left flank caesarean section.

MATERIAL & METHODS

A primiparous non-descript cow was referred to Veterinary Clinical Complex, LUVAS, Hisar with a history of five months pregnancy and straining since 4 days with blood tinge discharge from genitalia. The case was attended by local veterinarian at field level and several rotations were given to the animal but failed to detort the uterus. The animal was in arched back position, exhausted and there was absence of straining with foul smelling blood tinge discharge from genitalia and the body temperature was 102ºF. Per-vaginal examination showed abrupt stenosis of vagina and cervix was non accessible and revealed the left side post-cervical uterine torsion (> 360º). Per-rectal examination showed gas filled and fully distended uterus which made difficulty in palpation of foetus or foetal fluid. Stretched right broad ligament over the dorsal side of body of the uterus was also present but it was not so much evident since the gestation was around 5 months. And left side broad ligament was difficult to palpate. On the basis of per-vaginal and per-rectal palpation the case was diagnosed as post cervical left side uterine torsion. As the animal was in second trimester of gestation (5 months), it is difficult to fix the gravid uterus by rolling of dam owing to relatively less fluid and small sized fetus. So it was decided to perform left flank oblique celiotomy as the uterus is best accessible and easy to exteriorize in second trimester (Vermunt, 2008).

Restraining and preparation of animal

Both physical and chemical methods were used to restrain the cow. The cow was restrained using a rope in the travis and tied such that the animal's left flank is easily approachable. The area of the intended incision (left flank oblique) was shaved and scrubbed with povidone iodine surgical scrub four times. Then paravertebral anesthesia was given with 2% lignocaine hydrochloride (Inj. LOX®, Neon Laboratories Ltd.) to block T_{13}, L_1, L_2 and L_3 nerves according to Vermunt (2008). In this, each site was infused using 20ml of a 2-3% lignocaine solution; around 10-15 ml to block the ventral nerve branches, 5-10 ml for the dorsal branches. Signs of successful anaesthesia included a warm, hyperaemic and flaccid flank with no response to pain when tested with a hypodermic needle. Local infiltration was also done along the incision line (Fig.1) with 2% lignocaine hydrochloride (Inj. LOX®, Neon Laboratories Ltd.). A tocolytic agent, isoxsuprine lactate (Inj. Soxurine, Carus Laboratories Pvt. Ltd, 6ml) was also administered by intramuscular injection, to facilitate the manipulation and exteriorization of the uterus during surgery (Vermunt, 2008).

FIGURE 1: Local infiltration of Lignocaine HCL at incision site

FIGURE 2: Oblique cutaneous incision over left flank

Surgical operation

During operation, 2 liters of normal saline was administered intravenously to compensate dehydration from fluid loss. A left flank oblique celiotomy approach through caesarean section was planned in standing position. A drape was placed over the area of the site of surgery and an about 23 cm long oblique skin incision was made on left flank. After cutaneous incision (Fig. 2) the external abdominal oblique muscle and the internal abdominal oblique muscles were incised in the same direction as the skin. The aponeurotic transverse abdominal muscle was splitted vertically by blunt dissection. Bleeding was controlled successfully with artery forceps, ligation and anticoagulants in each and every step according to the intensity of bleeding from different structures. The peritoneum was also incised by taking care not to cut the rumen which lies immediately beneath the peritoneum. The greater curvature of the uterus was explored and pulled up into the abdominal opening even though it was very difficult to grasp the foetal parts in that distended uterus. One more drape was kept at the ventral side of incision to protect the abdomen from accidental contamination. The part of the uterus was grasped out (Fig. 3) of the incision site and stab incision was given at the greater curvature of the uterus to remove gas, then the incision was extended with scissor. The dead female foetus, foetal membranes (Fig.4) and fluid present in the uterus were removed by protecting the abdominal cavity from contamination. The uterus was given a good flush with normal saline and povidone iodine cocktail. The uterus was closed with Cushing's followed by Lambert's suture pattern with a synthetic absorbable monofilament cat gut No. (3-0) (Fig.5). six intrauterine boluses (CLEANEX®, Dosch Pharmaceuticals Pvt. Ltd.) were kept inside the uterus before closing the uterus to prevent local infection. Then peritoneum and the outer uterine surface were cleaned with sterile gauge pieces dipped in povidone iodine solution and the uterus was detorted carefully. The peritoneum and transverse abdominis muscle were sutured together (Fig. 6) and superficial muscles layers were closed with continuous lock stitch with chromic cat gut no (3-0) (Fig. 7). Then, a combination of cross mattress and horizontal mattress sutures were applied to the skin using non-absorbable silk material (Fig. 8). A povidone iodine solution was applied over the sutured line.

FIGURE 3: Exteriorization of gravid uterine horn

FIGURE 4: Foetus and fetal membranes delivered by caesarean section

FIGURE 5: Cushing's followed by Lambert's suture pattern to the uterus

FIGURE 6: Suturing of transverse abdominis muscle layer with peritoneum

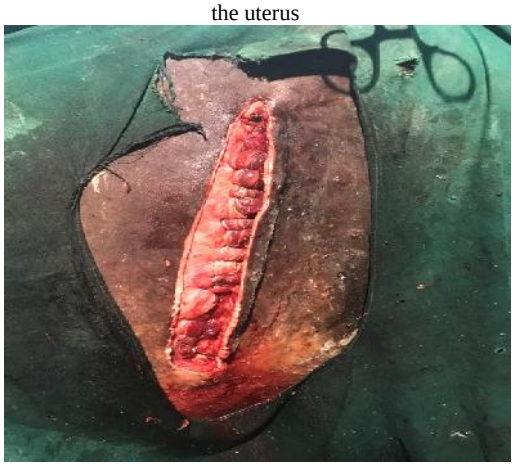

FIGURE 7: Suturing of internal and external abdominal oblique muscles together

FIGURE 8: Apposition of skin using cross-mattress and horizontal mattress

Post -operative care and management

Animal was administered with 5% dextrose normal saline 2 liters IV, broad spectrum antibiotic (Inj. Intacef-Tazo (Intas Pharmaceuticals Ltd, 4.5 g IM), anti-inflammatory (Inj. Melonex, Intas Pharmaceuticals Ltd, 20ml IM) and liver tonics (Inj. Belamyl®, Sarabhai Zydus Animal Health Ltd,10ml IM). Same treatment was advised also for further seven days. Additionally, owner was advised to apply

povidone iodine solution over the sutured line 3-4 times a day and Loraxane® spray around the surgical wound. Feeding management was done with feeding of half kg of jaggery with 50g sodium bicarbonate ($NaHCO_3$) for energy balance. The status of animal was then monitored for a period of 14 days to observe any complication until complete recovery through regular contact with owner. The animal recovered uneventfully.

DISCUSSION

Usually, uterine torsion occurs before the onset or during the late first stage of parturition (Pearson, 1971; Nanda and Sharma 1986) and rarely during the early second stage of parturition (Noakes *et al.,* 2001). Among the referred cases of torsion, pregnancy period is generally complete in 77–100% cases (Srinivas *et al.,* 2007*).* Occasionally, uterine torsion can occur around 2 months (Roberts, 1986) or between 5–8th month of pregnancy (Penny 1999; Biggs and Osborne 2003). Current case also reports uterine torsion at 5th month of pregnancy. The etiology of uterine torsion at early gestation is not clear and only history can correlate with the incidence of condition. In this case the hyperactivity of non-descript primiparous cattle may be an inducing factor to rotate the uterus on its longitudinal axis. It is very difficult to fix the uterus with fetus in early gestation so any rolling methods would not be successful. Hence, left flank caesarean section proves to be a suitable choice for the successful management of uterine torsion in early gestation in cattle.

CONCLUSION

Although uterine torsion in cattle and buffalo is a condition of later gestation but occasionally can be encountered in early gestation too. Early diagnosis and management through caesarean section can be important tool to handle these cases. The adoption of aseptic surgery, use of antibiotics & anti-inflammatory drugs, fluid therapy after the surgery can be helpful in successful recovery and maintenance of reproductive health of the cattle.

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