

TREATMENT STRATEGIES FOR UTERINE TORSION AND ADHESIONS IN HOLSTEIN FRIESIAN CROSSBRED COWS EXPERIENCING DYSTOCIA

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Abstract

Uterine torsion is a rare but challenging condition in dairy cows that can result in dystocia and even death. This report presents a case of uterine torsion in a full-term pregnant Holstein Friesian crossbred cow that was complicated by uterine adhesions. The cow was referred to a Large Animal Obstetrical Unit after unsuccessful treatment by a local veterinarian for symptoms including restlessness, inappetence, abdominal discomfort, and frequent lying down and getting up. Vaginal and rectal examinations revealed right side pre-cervical uterine torsion and adhesion of the uterus with adjacent organs. Due to the delayed condition and development of uterine adhesions, a caesarean section was performed as per the standard procedure. A dead male fetus and fetal membranes were removed during the surgery, and the adhesion of the uterus was corrected manually. The animal was treated postoperatively with antibiotics, anti-inflammatories, antihistamines, ecbolics, and IV fluids for seven days and had an uneventful recovery. The case highlights the importance of prompt diagnosis and treatment of uterine torsion, particularly in cases complicated by adhesions. Caesarean section can be a viable option in such cases.

Keywords: uterine torsion, dystocia, caesarean section, uterine adhesions, Holstein Friesian crossbred.

Introduction

Uterine torsion is defined as the revolution or twisting of uterus on its long axis. Uterine torsion is most commonly prevalent as a cause of dystocia in dairy cows and usually develops during the late first stage or early second stage of labour (Roberts, 1971). Mohteshamuddin *et al.* (2014) reported uterine torsion is an obstetrical emergency. It is a single most important disorder among parturient bovines with high rate of dam mortality (Matharu and Prabhakar, 2001). Cows and buffaloes are thought to be more susceptible to uterine torsion given to the uterine instability resulting from dorsolateral attachments of broad ligament (Sloss and Dufty, 1980). Uterine torsion may be caused by vigorous movement of fetus or sudden slip or fall of dam during either lying down or rising up (Williams, 1943). In majority of cases the pregnant uterus rotates about its long axis, with the point of torsion being the anterior vagina just caudal to the cervix. This is the post-cervical torsion. Less commonly the point of torsion is cranial to the cervix known as pre-cervical torsion (Jackson, 1995). Pre-cervical torsion is more detrimental to cervix due to severe ischemia of cervical tissue as compared to postcervical torsion (Honparkhe *et al.* 2009). In delayed cases, the fetus remains in the uterus and macerates, with extensive adhesion developing around the uterus. For the treatment of uterine torsion cases, either of the techniques is being used:

per-vaginal rotation of fetus, rolling of dam and caesarean section. Caesarean section is suggested in cases of uterine torsion that fail to be corrected by rolling or in long standing cases where fetus is dead and uterine adhesions / rupture are likely (Roberts, 1971). The present case reports a case of uterine torsion complicated with uterine adhesions in a Holstein Friesian crossbred cow.

Case history and Observation

A four year old primiparous full term crossbred HF cow was presented to Veterinary Clinical Complex, Veterinary College and Research Institute, Orathanadu, Tamil Nadu with the history of restlessness, inappetance, abdominal discomfort, frequent lying down and getting up for last one week. The animal was treated by a local veterinarian and referred to this hospital. The temperature was normal, however the pulse and respiratory rate was on higher side. Gross examination of animal revealed dull and depressed, tightened pelvic ligaments, shrinkage of udder and a stiff, stilted stretched gait. Vaginal examination revealed one finger dilatation of cervix. Rectal examination revealed crossing over of broad ligament in clockwise direction. Rectal palpation also revealed adhesion of uterus with adjacent organs. Fetal head and fore limb were also palpated as fetus was in anterior longitudinal presentation, dorsosacral position, but there was neither fetal movement nor fremitus suggesting dead fetus in the uterus. The case was confirmatively diagnosed as right side precervical uterine torsion with uterine adhesions.

Treatment and Discussion

The present case was 270 degree, pre-cervical, right side uterine torsion with adhesion of uterus with peritoneum, momentum and surrounding structures. Local attempts to detort the uterus using schaffer's method was unsuccessful due to uterine adhesions. Due to delayed condition and development of uterine adhesions, it was opted for caesarean section. The caesarean section was decided to perform by left flank incision under local infiltration anaesthesia with 2% lignocaine hydrochloride using left ventro-lateral (Oblique) approach. As per the standard procedure, about 15 inches long incision (Fig. 1) was made on skin and muscles were severed. Gravid uterine horn was taken out and was packed with draper to prevent leakage of uterine contents into peritoneal cavity. About 8 inch long incision by using scalpel was made on the gravid horn and a dead male fetus and fetal membranes were removed (Fig. 2). During laprotomy, the uterus was cyanotic and adhesion of uterus with adjacent organs and peritoneum noticed (Fig. 3). The adhesion of uterus was corrected during the surgery (Fig. 4). The uterine incision was closed with Cushing's followed by Lambert suture pattern using PGA-2. After the closure of hysterotomy incision, the uterus was detorted. The abdominal muscles were closed with continuous interlocking suture pattern by using PGA-2. Finally, the skin was closed by horizontal mattress suture pattern with nylon (Fig.5). The crossbred cow was treated post-operatively with Streptopenicillin 5gm, i/m, Meloxicam @ 0.5mg/kg b.wt i/m, Chlorphenaramine maleate @ 0.5mg/kg b.wt i/m, 40 IU of Oxytocin i/m for seven days and skin sutures were removed after 12 days. The cow recovered uneventfully and become active after completion of the treatment (Fig. 6).

The instability of gravid uterus resulting from dorsolateral attachments of broad ligament (Sloss and Dufty, 1980) is the most important predisposing factor in bovine uterine torsion. Cows are more susceptible to uterine torsion given to this uterine instability. The broad ligament supports the uterus dorsolaterally, but attaches to ventral lesser curvature, which allows more rotator movements in cows. As pregnancy advances, the broad ligaments do not extend proportionately with the gravid uterus, leading to instability (Frazer *et al.* 1996; Drost, 2007).

Many authors reported that increased fetal movements during labor may be a precipitating parturient factor. Other such possible predisposing factors are: decreased amount of uterine fluid, flaccid uterine wall, small non gravid horn, excess fetal weight etc. (Ghuman, 2010; Jayakumar *et al.* 2014; Assad *et al.* 2015). Rotatory fetal movements during the second stage of labor or late gestation would rotate the uterus along with it resulting in

uterine torsion. The cattle dystocia handled under field conditions or presented at the referral hospitals report uterine torsion incidence as 3-11% and 4-28% respectively (Pearson, 1971; Frazer *et al.* 1996; Ghuman, 2010). The incidence is higher in pluriparous cows and buffaloes with maximum incidence during second and third calvings (Mannari, 1969; Nanda, 1995). The possible causes for this increased incidence in pluripara include larger abdominal cavity, stretching of pelvic ligaments, loose and long broad ligaments together with loosening of uterine tissue and decreased uterine tone in aged bovines (Drost, 2007; Aubry *et al.* 2008).

For the treatment of uterine torsion cases, either of the techniques is being used: per-vaginal rotation of fetus, rolling of dam and caesarean section. Caesarean section is suggested in cases of uterine torsion that fail to be corrected by rolling or in long standing cases where fetus is dead and uterine adhesions / rupture are likely (Roberts, 1971). Caesarean is a method of choice in cases presented with a closed cervix, dead fetus with subsided symptoms of parturition. Sutaria *et al.* (2011) also reported successful surgical management of pre-cervical uterine torsion complicated with uterine adhesions in a Kankrej bred heifer. Roberts (1971) reported that animals having severe uterine torsion causes obstruction to the blood supply of the uterus, which results in congestion, oedema, shock, death of the fetus and even cyanosis and gangrene of uterine wall. In the present case also, a dead male fetus was removed and the uterus was cyanotic. Uterine adhesions due to perimetritis and parametritis are usually caused by trauma or rupture of the uterus at the time of calving due to the torsion of the uterus (Roberts, 1971). Hence, uterine adhesions observed in the present case might be due to inflammation of the serosa and uterine ligaments caused by uterine torsion.

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