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Management of uterine torsion in a Holstein Friesian cow: A case report

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Abstract

A Holstein Friesian cow with an ongoing 276 days gestation was presented at Veterinary Clinical Complex, College of Veterinary Science, Khanapara, Guwahati with a history of restlessness, inappetance and frequent lying down and rising up. Clinical findings included tachypnic (35/minute), tachycardic (80 bpm) and 101.2°F body temperature. Per-rectal examination suggested of right side pre-cervical uterine torsion of more than 180°. Sharma's Modified Schaffer's detorsion method was successfully executed in two rolling and subsequently administered Dexona, Pragma and Epidosin to induce parturition. Despite the induction, no signs of parturition were observed after 24 hours. Consequently, Caesarean Section was performed and a live female calf was delivered. The cow and the calf were reported to be recovered and healthy after one week of observation. Thereby, it may be concluded that combination of both detorsion method and surgical intervention in such reported cases are found to be favourable with high success rates considering the condition of the dam after the exposure and the degree of torsion are minimal.

Keywords: Pre-cervical uterine torsion, Sharma's Modified Schaffer's method, caesarean section

Introduction

Uterine torsion is a notable cause of dystocia in animals and has been reported to be observed more frequently in bovine than other domesticated species. Torsion of uterus occurs in a gravid uterine horn and is defined as the rotation or twisting of gravid uterus on its longitudinal axis (Purohit *et al.*, 2011) [4]. Though the predisposing factors of this condition remains an ongoing discussion; however, small quantity of foetal fluid and associated decrease in size of uterus at the end of pregnancy appears to be a realistic justification of the occurrence of uterine torsion in bovine. Additionally, other destabilizing factors such as weak broad ligament musculature, lower tone of uterine muscles, uterus outside bursa supraomentalis along with sudden movements of dam and the foetus can further intensify the probability of occurrence of uterine torsion (Ghuman, 2010) [2]. In uterine torsion the uterus along with the foetus and the foetal membrane may rotate into clockwise (right side) or anti-clockwise (left side) direction, that may be present in anterior (pre-cervical) or posterior (post-cervical) to the cervix. Torsion is graded on the basis of degree of rotation of the uterus. Rotations of 45 to 90 degrees are frequently observed in rectal examination and they often appear to resolve on or before parturition. Uterine torsion of 90 to 180 degrees can be present during the last few months of gestation without any symptoms and only evident at the time of parturition. Torsion of more than 180 degrees to full turn (360°) may lead to complete closure of the birth canal that cause obstruction of the blood supply to the uterus, resulting congestion, edema, shock, fetal death and in advance cases gangrene of the uterus (Roberts, 1971) [5]. Torsion of almost two full turns has also been reported, though rarely. The symptoms of uterine torsion in cow prior to parturition may not be evident in mild condition (torsion of 45° to 90° or even 180°). In severe cases (torsion >180°) definite clinical symptoms such as abdominal pain, restlessness, anorexia, constipation, lack of rumination, rapid pulse, treading and tail twitching are observed. Diagnosis is based on per-rectal and per-vaginal examination and treatment depends on the severity of the condition that includes rolling of the dam and/or caesarian section.

History and clinical observations

A Holstein Friesian cow weighing approximately 400 kg was presented to the Veterinary Clinical Complex (VCC), College of Veterinary Science, Khanapara, Guwahati with an ongoing gestation period of 276 days along with symptoms of restlessness, inappetance and

frequent sitting down and standing up as reported by the owner. On clinical examination it was found that the animal with tachypnic (35/ minute), tachycardic (80 beat per minute), with normal rectal temperature of 101.2⁰ F. There was neither any vaginal discharge of foetal fluid observed nor there was the rupture of water bag. The lips of the vulva were appearing to be pulled towards right side. On per vaginal examination it was found that the hand cannot be passed into deeper parts of anterior vagina and there was twisting of the vaginal mucus membrane towards right side. On per rectal examination it was found that the right broad ligament has gone under the uterus and the left broad ligament has been pulled towards the right side. A criss-crossing structure and a downward gap on the rectal floor could be felt on per rectum examination towards the right side. These findings indicated the presence of more than 180⁰ right side pre-cervical uterine torsion.

Treatment and obstetrical management

Using Reuff's method of casting the cow was casted to lateral recumbency on the side of the torsion i.e. on the right side and both the hind and forelimbs were tied together with ropes. Proper cushioning was provided during casting of the animal to avoid injury to the dam as well as the foetus. For detorsion of the uterus, Sharma's Modified Schaffer's method was used (Fig. 1). A wooden plank (length: 11.9, width: 9 inches, thickness: 2 inches) was placed over the flank region of the cow on the left side. Two assistant stood over the plank on the side which was fixed on the ground. Another assistant held the plank tightly towards its free end. The cow was then rotated slowly towards the right side. The same procedure was followed twice. Afterwards, the animal was injected with Dexamethasone (Inj. Dexona @ 20-30 mg total dose Intramuscularly (I/M), Zydus Pharmaceuticals), Prostaglandin F₂α (Inj. Pragma @ 2 ml I/M, Intas Pharmaceuticals Ltd.) and Valethamate Bromide (Inj. Epidosin @ 10-15 ml I/M, TTK Healthcare Ltd.) for induction of parturition. Despite the induction, complete cervical dilation was not observed even after 24 hours. So to avoid further stress to the dam and trauma to the foetus, the treatment was narrowed down to the last option i.e. Cesarean section (Fig. 2).

The cow was first posteriorly sedated with epidural anaesthesia using Lignocaine Hydrochloride injection (8 ml). The animal was then casted on the right side after providing proper cushioning. Mild sedation of the animal was done using a combination of Xylazine (@ 0.05-0.22 mg/kg) & Ketamine (@ 5mg/kg) I/M, followed by the maintenance of the sedative state of the animal using Diazepam (@ 0.6-1.1 mg/kg) Intravenously (I/V). The surgical site was prepared as per standard surgical procedure. Local anaesthesia (Lignocaine- 30-50 ml) was applied using T-block method. A ventro-lateral oblique incision was made on the left side of the abdomen, to reach the uterus. The uterus was then exteriorized, incised and a live female foetus was extracted from the uterus. The uterus was then detorsioned and suturing of the uterine incision was done by Lambert's pattern using sterile absorbable suture material catgut No. 1. Four numbers of furex boli (Nitrofurazone and urea pessary) were inserted into the uterus before suturing the incision. The abdominal muscles were sutured following interrupted suture pattern, using sterile absorbable suture material catgut No. 1. Skin was sutured by following interrupted suture pattern, using nylon suture. Sufficient amount of fluid therapy was provided to the animal in the form of NS and DNS (@15 ml/kg) during the whole surgical procedure and post operative care. Post

operative antibiotics (Inj. Ceftriaxone Sodium + Tazobactam @ 10 mg/kg b.wt I/V, Intas Pharmaceuticals Ltd.), anti-inflammatory (Inj. Melonex @ 0.2 mg/kg b.wt I/M, Intas Pharmaceuticals Ltd.), antihistaminic (Inj. Avilin Vet @ 15 ml I/M, MSD Animal Health) and Vitamin injection (Tribivet @ 15 ml I/V, Intas Pharmaceuticals Ltd.) were administered for 7 days. Apart from these, supportive fluid therapy along with Metronidazole inj. (@ 5ml/kg b.wt I/V) was also administered for 5 days. Local dressing of the wound was done daily for 5 days. The cow recovered with good progressive signs and suture was removed 12 days post-operation. Both the cow and the calf were reported to be healthy (Fig. 3).



Fig 1: Detorsion of uterus using Sharma's Modified Schaffer's method



Fig 2: Caesarian section performed in cow



Fig 3: Healthy cow and calf after 12 days post-operative care

Discussions

The most important pre-disposing factor in bovine uterine torsion is the instability of the gravid uterus resulting from dorso-lateral attachments of broad ligaments. The broad ligaments supports the uterus dorsolaterally, but attaches to ventral lesser curvature, which allows more rotational movements of uterus in cows (Prabaharan *et al.*, 2019)^[3]. As pregnancy advances the broad ligament does not extend proportionately with the gravid uterus leading to uterine instability (Drost, 2007). In cattle uterine torsion is observed most commonly in the pluriparous cows in their advanced stage of pregnancy but it can also occur as early as 70 days of gestation and as late as the day of parturition (Roberts, 1971)^[5]. The prognosis of uterine torsion prior to parturition may be good to guarded depending on the degree of rotation, severity of the symptoms and duration of torsion. Considering these circumstances our present study was subjected to two treatment protocols, i.e. rolling of the cow by using Sharma's Modified Schaffer's method and caesarean section. The surgical treatment of uterine by laparohysterotomy (caesarian section) presents numerous inconveniences, including risk of infection, damage to the internal organs and bleeding, as well as needing more time to recovery (Prabaharan *et al.*, 2019)^[3]. Hence, the combination of Sharma's Modified Schaffer's method along with caesarian section to be a suitable choice for successful management of uterine torsion in imperfect cervical dilatation of the cervix in cattle.

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