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Post cervical uterine torsion in non-descriptive cattle

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Abstract

A full-term pregnant crossbred bovine (white and grey coat colour) was presented to the Veterinary Clinical Complex with a history of restlessness, frequent lying down and persistent straining. Clinical examination revealed that the animal was hyperactive with congested external genitalia and oedematous vulva. Per rectal examination revealed the presence of vaginal folds deviating towards the right side. The animal also had a history of diarrhoea on the day of presentation and the owner reported the onset of oestrus 10 months after the previous calving. Mucoid vaginal discharge and a right-sided uterine torsion were observed which confirmed that the diagnosis was uterine torsion. Supportive therapy consisting of Ringer's lactate, dextrose normal saline, calcium borogluconate and antibiotics was administered. The uterine torsion was successfully corrected manually with use of the modified Schaffer's rolling method with the aid of a wooden plank/flank support. Following correction, the animal delivered a dead foetus in the evening. Post-treatment monitoring and supportive care resulted in an uneventful recovery with no postoperative complications observed.

Key words: *Uterine torsion; Schaffer's method; Broad Ligament*

Introduction

Uterine torsion is defined as the rotation or twisting of the gravid uterus along its longitudinal axis and involves the pregnant uterine horn (Purohit *et al.*, 2011). It is considered as one of the most common causes of dystocia in bovines with reported incidence ranging from 56% to 80% (Abrol *et al.*, 2020). The condition usually develops during the late first stage or early second stage of parturition. The predisposition of bovines to uterine torsion is largely due to the anatomical instability of the uterus, wherein the greater curvature lies dorsally and the gravid horn extends cranially beyond the sub-ilial support provided by the broad ligaments (Noakes *et al.*, 2001).

Several anatomical factors contribute to the occurrence of uterine torsion in bovines such as sub-ilial attachment of the broad ligaments, attachment of the ligaments along the lesser curvature leaving the greater curvature relatively unsupported, freely movable uterine horns within the broad ligaments and inadequate elongation of the broad ligaments in proportion to the marked enlargement of the gravid horn during advanced pregnancy (Ghuman *et al.*, 2010). Depending on the direction of rotation, uterine torsion is classified as clockwise (right-sided) or anticlockwise (left-sided). Based on the site of twisting, it is categorized as pre-cervical, involvement of rotation cranial to the cervix or post-cervical involvement of the cervix and anterior vagina. Among these, post-cervical torsion is more frequently encountered in bovines and is readily diagnosed by per-vaginal examination. Right-sided post-cervical torsion is reported to occur more commonly than left-sided torsion (Alfaris *et al.*, 2014).

In uterine torsion cases, palpation of fetal parts is difficult because of stretching of the broad ligaments and ventral displacement of the uterus along with the fetus. Following successful detorsion, fetal structures such as the head and limbs become palpable during rectal examination due to correction of the torsion (Prem Kumar *et al.*, 2020). The severity of torsion has direct impact on fetal survival, with fetal mortality increasing significantly when the degree of torsion exceeds 180° (Yadav *et al.*, 2021). Delayed intervention further aggravates fetal mortality due to prolonged compression of uterine blood

vessels leads to compromised uterine circulation and fetal asphyxia (Ferrari *et al.*, 2021; de Carvalho *et al.*, 2022).

Diagnosis of uterine torsion in bovines is based on anamnesis, vaginal examination and rectal palpation. Additional diagnostic techniques such as the finger-side test, forearm entrance test, and identification of cranial displacement of the middle uterine artery from its normal anatomical position have also been described to improve diagnostic accuracy (Thangamani *et al.*, 2018). During rectal examination, accumulation of gas within the uterus is palpable at the site of torsion. In such cases, deviation of the uterine horns is also appreciated with the left uterine horn displaced towards the left side and the right uterine horn displaced towards the right side depending on the nature and extent of torsion (Kei Kazama *et al.*, 2024).

Case history and clinical observation

A pluriparous non-descript cow was presented to the Veterinary Clinical Complex, Veterinary College and Research Institute, Orathanadu, Thanjavur, with a history of hyporexia, restlessness, frequent lying down and crawling behaviour. The animal was at full-term pregnancy. On clinical examination, the physiological parameters were within normal limits; however, the animal appeared slightly dull and depressed. The rectal temperature was recorded as 38.8 °C.

Examination of the external genitalia revealed an oedematous vulva and congestion of the vaginal mucous membrane. Per-vaginal examination showed twisting of the vaginal folds towards the right side and the cervix could not be palpated manually. Per-rectal examination revealed a band-like structure on the left side along with the presence of mucoid vaginal discharge. Based on the clinical findings, the case was diagnosed as post-cervical right-sided uterine torsion exceeding 180°.

Fig.1. X-ray image of cat showing foetal skeletons

Fig.2. Ectopic foetus attached to wall of intestine

Fig. 3. Counter-pressure to the uterus

Fig. 4. Dead female foetus was delivered

Treatment and Discussion

The animal was gently restrained and carefully cast into right lateral recumbency, corresponding to the direction of the uterine torsion. Positioning the dam on the side of torsion facilitates gravitational stabilization of the uterus and enhances the effectiveness of detorsion during rolling. Both forelimbs and hind limbs were securely restrained using soft, well-padded ropes to prevent sudden movements and ensure animal safety during the procedure (Figure 1).

Correction of the uterine torsion was performed with use of the modified Schaffer's rolling method with the aid of a wooden plank. A smooth wooden plank measuring approximately 3–4 m in length and 20–30 cm in width was placed obliquely over the paralumbar fossa with its lower end resting on the ground (Figure 2). The plank provided constant counter-pressure over the uterus, thereby preventing the uterus from rotating along with the body and facilitating controlled detorsion during rolling (Figure 3). The animal was then rolled slowly and carefully in the direction of the torsion and per-vaginal examinations were conducted after each roll to assess the degree of correction.

Complete detorsion was successfully achieved after three gentle rollings. Following correction, supportive and therapeutic management was instituted. Intravenous administration of Dextrose Normal Saline (DNS; 1000 ml) and Ringer's Lactate (RL; 1000 ml) was carried out to correct dehydration, restore electrolyte balance and maintain circulatory stability compromised by prolonged torsion (Sagar *et al.*, 2021). Injection calcium borogluconate (200 ml, IV) was administered to improve uterine tone and enhance myometrial contractility. Injection $PGF_2\alpha$ (2 ml, IM) was given to facilitate uterine evacuation and expulsion of the foetus. Injection dexamethasone (10 ml, IM) was administered to reduce stress and minimize inflammatory responses associated with prolonged dystocia.

Approximately 8 hours after successful detorsion and therapeutic intervention, the animal delivered a dead female foetus (Figure 4). The dam recovered uneventfully and showed no postoperative complications during the follow-up period.

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