Case Report

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Clinical management of postpartum uterine prolapse in goats using New Zealand technique: A case Report

Vishnu Vadera*, Aadhithya Muthuswamy Jayaprakash, Uttam Kumar Sahu, Pooja Mahala, Saurabh Nistane, Manish Solanki, and Brijesh Kumar.

Division of Animal Reproduction, ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly (U.P.) India- 243122.

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ABSTRACT

A 2.5-year-old pleuriparous doe was presented to the Referral Veterinary Polyclinic (RVP-IVRI) with the chief complaint of everted uterus and anorexia, and with history of kidding 24 hours prior and retention of placenta. The goat was placed in lateral recumbency; the everted uterus was cleaned with 1% potassium permanganate ($KMnO_4$) solution to remove the debris; oedema was reduced with application of magnesium sulphate ($MgSO_4$), and a mixture of 2% lignocaine gel and soframycin cream was applied to the mucosal surface before repositioning. The case was successfully managed through reduction and repositioning of uterus into the pelvic cavity by New Zealand technique, followed by the placement of a retention suture to prevent recurrence. The medical management included intravenous fluid therapy, calcium borogluconate, antibiotics, anti-inflammatory, antihistamines, and multivitamin administration. The animal recovered without complications.

Introduction

Uterine prolapse refers to the turning inside out of the uterus, resulting in its protrusion through the vagina. This condition is commonly referred to as "casting of the womb" or "casting of the calf bed." (Arya *et al.,*2024). The eversion of the gravid horn is known as uterine prolapse (Noakes *et al.,* 2001). Goats are relatively less likely to experience this problem than cattle and sheep (Sahadev *et al.,* 2014). Uterine prolapse usually occurs a few hours postpartum, when the cervix remains dilated and the uterus lacks tone, allowing it to evert and protrude externally (Hanie, 2006). Uterine prolapse can be caused by several factors, however it is typically challenging to pinpoint the exact causes (Jackson, 2004).

The disorder was commonly linked to hypocalcaemia, dystocia and retained placenta, which may lead to low uterine tone and increased straining (Youngquist, 1997). Cervical involution might be delayed and myometrial stress can be caused by hypocalcaemia (Krishnaveni and Kumar, 2024). For the placenta to be expelled, regular contractions are necessary. Hypocalcaemia may also increase the risk of placenta retention. Uterine prolapse can be caused by numerous factors, including the weight

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* **Corresponding author E-mail addresses:** vishnuvadera2@gmail.com (Vishnu Vadera)
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of the retained placenta, the animal's continuous pulling to remove it, elevated oestrogen levels in the diet, and conditions like tympany that raise abdominal pressure (Wachida and Kisani, 2011), Extremely uncommon, prolapse that occurs more than 24 hours after giving birth is compounded by partial cervical closure, which makes replacement challenging or impossible (Fubini and Ducharme, 2006). The success of treatment depends on the type of case, the degree of damage, and contamination, this instance demonstrates the effective clinical treatment and management of postpartum uterine prolapse in a doe.

Case history and clinical observation

Two and half 2.5 years old nondescript goat in its third parity was presented to Referral Veterinary Polyclinic of Indian Veterinary Research Institute, with a history of uterine eversion 24 hrs after delivering two healthy kids. The goat appeared to be dull and depressed with rectal temperature of 102° F, heart rate 120/minute. The prolapsed uterus was swollen, oedematous, hanging upto the hock, and covered with debris and faecal matter (Fig. 1). The prolapsed mass had numerous bleeding points and had lacerations (Fig. 2).

Figure 1: Everted uterus appears congested, swollen, and with lacerations

Figure 2: Oedematous prolapsed uterine mass covered with debris hanging up to hock joint

Treatment and discussion

The primary goal of the treatment was to reduce, reposition, and retain the prolapsed mass. Lignocaine hydrochloride (Lox®, 2mL) was injected into the sacro-coccygeal (S5-C1) region as epidural anaesthesia to prevent straining during replacement of prolapsed mass. The vulval and perineal region was cleaned thoroughly with soap solution. A solution of cold-water containing 1% potassium permanganate ($KMnO_4$) was used to wash the prolapsed mass to clear the soiling. Powdered magnesium sulphate crystals were mixed with liquid paraffin and applied to the prolapsed mass to reduce oedema. A mixture of soframycin and lignocaine gel (Lox®) was applied to the prolapsed mass after cleaning to prevent infection. Modified New Zealand method was opted for correction of prolapse and the animal was placed on sternal recumbency with two hind limbs pulled outward. Lignocaine gel was used to lubricate the prolapsed mass, followed by the repulsion of uterine body and horns into the pelvic cavity. Horizontal mattress suture using nylon size 0 was placed in the vulva as a retention technique and to prevent recurrence. As post-operative management injection of calcium magnesium borogluconate (Mifex®, 1mL/kg IV), dextrose normal saline (DNS, 1mL/kg IV); ceftiofur sodium (1.1mg/kg IM), meloxicam (Melonex®, 0.5 mg/kg IM), chlorpheniramine maleate (Anistamin®, 0.5mg/kg IM), multivitamin preparation (Tribivet®, 3 ml IM) was administered. The owner was advised to follow the same medication for 4 days. The vulvar retention suture was removed on day seven and the animal recovered without incident in three days.

Uterine prolapse is a commonly observed postpartum complication in domestic animals, including goats.

Although the exact etiology remains unclear, the condition is considered multifactorial. Factors such as hypocalcaemia, mineral imbalances, excessive stretching or injury to the birth canal, dystocia, retained placenta, forceful removal of fetal membranes, and hormonal disturbances have been implicated as potential causes (Pandit *et al.,* 1982; Hanie, 2006; Jackson, 2004; Roberts, 1971). Recent studies have further emphasized the role of hypocalcaemia and poor uterine tone in the immediate postpartum period, particularly in multiparous and confined goats (Krishnaveni and Kumar, 2024; Poornima *et al.,* 2025). Delayed intervention can result in serious complications such as severe edema, ischemia, lacerations, internal hemorrhage, septic metritis, prostration, and shock, which may significantly worsen the prognosis (Noakes *et al.,* 2001; Pandey and Pandey, 2003; Singh *et al.,* 2020).

Figure 3: Horizontal mattress suture with nylon (size 0) was applied as vulval retention suture

In the present case, prompt clinical intervention ensured successful management of the prolapsed uterus. The treatment approach involved reduction, repositioning, and retention of the prolapsed mass, followed by appropriate supportive therapy. Rai and Prabhakar (2000) reported that caudal epidural anaesthesia using lignocaine hydrochloride effectively controls straining by desensitizing sensory and motor nerves, thereby facilitating easy repositioning of the uterus. The New Zealand technique has been reported as an effective method for repositioning uterine prolapse in cattle and goats (Arunpandian *et al.,* 2021; Singh *et al.,* 2020). In this case, the exposed uterine mass was thoroughly cleaned and subjected to edema-reducing measures using ice packs and magnesium sulphate, as recommended by earlier and recent reports (Hanie, 2006; Poornima *et al.,* 2025). The goat was placed in sternal recumbency with elevation of the hindquarters to utilize gravitational assistance during repositioning. Gentle extension of the hind limbs outward and caudally by assistants helped achieve the characteristic New Zealand posture, allowing gradual and careful replacement of the uterus. Complete repositioning of both uterine horns into the pelvic cavity was ensured to prevent recurrence, as emphasized by Fubini and Ducharme (2006) and Hanie (2006).

Medical management included the administration of calcium borogluconate (1 ml/kg body weight) to enhance uterine tone and contractility, thereby correcting hypocalcaemia and reducing the likelihood of relapse (Singh *et al.,* 2018; Krishnaveni and Kumar, 2024). Broad-spectrum antibiotics were administered for five days post-replacement to prevent secondary bacterial infection due to prolonged exposure of the uterus to environmental contaminants (Borobia-Belsué, 2006; Singh *et al.,* 2020). Anti-inflammatory therapy with meloxicam was provided to control pain, inflammation, and fever, while antihistaminics helped reduce tissue reaction. The application of lignocaine gel on the prolapsed mass provided adequate lubrication along with local anaesthetic action, minimizing discomfort and preventing further trauma during manipulation (Singh *et al.,* 2011; Poornima *et al.,* 2025). The placement of a vulval retention suture played a crucial role in preventing recurrence, which is in agreement with earlier reports advocating its use for successful management of uterine prolapse in goats (Wachida and Kisani, 2011; Singh *et al.,* 2020).

The outcome of this case reinforces the effectiveness of the New Zealand technique for uterine repositioning and the vulval retention suture for prevention of recurrence in cases of total uterine prolapse in goats. Timely correction, meticulous handling of the prolapsed uterus, and appropriate postoperative care contributed to an uneventful recovery without complications or recurrence.

Conclusion and future scope

The present case report demonstrates the successful clinical management of total postpartum uterine prolapse associated with retained placenta in a goat using the New Zealand technique. Prompt intervention, effective epidural anaesthesia with lignocaine, proper reduction of oedema, careful repositioning of the uterus, and application of a vulval retention suture played a decisive role in preventing complications and recurrence. Supportive therapy, including calcium supplementation, antibiotics,

anti-inflammatory and antihistaminic drugs, ensured rapid recovery and restoration of normal health. This case highlights that timely diagnosis and a systematic therapeutic approach can result in a favourable prognosis even in severe cases of uterine prolapse in goats.

This case underscores the need for greater awareness among field veterinarians and livestock owners regarding early recognition and immediate management of uterine prolapse in small ruminants. Further studies involving a larger number of clinical cases are warranted to standardize the New Zealand technique and retention methods specifically for goats. Research focusing on predisposing factors such as mineral imbalances, nutritional management, and periparturient care may help in developing effective preventive strategies. Additionally, comparative evaluation of different retention suturing techniques and postoperative management protocols could improve treatment outcomes and reduce recurrence rates in caprine practice.

Conflict of interest: The authors declare they have no competing interest

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