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Bicornual Total Uterine Prolapse in a Domestic Shorthair Cat - A Case Report

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Abstract

A six year old Domestic Short Hair (DSH) cat was presented to the Small Animal Gynecology and Obstetrical Unit at the Teaching Veterinary Clinical Complex, Veterinary College and Research Institute (VCRI), Theni. The cat had a history of total uterine prolapse, severe straining and a prolapsed mass was hanging from the vagina for the past 24 hours. Upon examination, the prolapsed mass was observed to be dry, reddish, edematous and protruding outside the vaginal cavity. All other vital parameters were within the normal range.Under sedation, the prolapsed mass was cleansed with saturated lukewarm water and a pressure bandage soaked in 50% Dextrose was applied over the uterine horns for 15 minutes. Following this, the uterine mass was further cleaned with normal saline and a metronidazole solution. Aseptic manual repositioning was then performed after applying lignocaine gel with K-Y lubricant.Upon successful repositioning of the uterine horns, a vulval lip purse-string stay suture was applied and a single dose of subcutaneous Inj. Cefovecin antibiotic was administered. Additionally, the Inj. Oxytocinintramuscularly and Calcium gluconate 10%administered with 5% DNS to promoting uterine contractions and aiding in the reduction of the prolapsed uterus.The cat recovered uneventfully after five days of treatment.

Key words: Domestic Short Hair (DSH), Total uterine Prolapse, Manual reduction,Vulval lip purse-string suture

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Uterine prolapse often arises as a common consequence of dystocia, characterized by challenging or obstructed labor. The increased straining exerted during labor can lead to uterine prolapse, occurring either immediately during the birthing process or within 48 hours following the delivery of the last kitten or after an extended queening period (Jarolmasjed, 2017). The presentations of uterine prolapse can vary, ranging from the protrusion of both uterine horns from the vulva to the involvement of a specific part of the uterine body (Deroy *et al.,* 2015). Difficult or obstructed labor emerges as a significant risk factor. Alongside prolonged gestation and dystocia, factors such as uterine atony (failure of the uterus to contract properly) and excessive abdominal contractions can also contribute to the occurrence of uterine prolapse (Bigliardi *et al.,* 2014).

In certain instances, a prolapsed uterus may incur severe damage or necrosis, making salvage impossible. In such cases, the imperative course of action may involve the amputation of the uterus. Biddle (2000) emphasizes the significance of considering factors such as the extent of ischemia, necrosis, damage and edema to determine the appropriate intervention. If the tissue is devitalized or necrotized upon presentation, a hysterectomy emerges as the preferred method of treatment (Johnston *et al.,* 2001, and Rangasamy *et al.,* 2021).This procedure entails manually repositioning the prolapsed uterus back into its normal position within the abdominal cavity, facilitated by appropriate lubrication. To alleviate uterine tissue swelling, it is recommended to cover the affected area

with a bandage cloth for 20 minutes and apply a hyperosmotic solution, such as 50% Dextrose.

Case History and Observations

A six year old domestic shorthair cat was brought to the Small Animal Gynaecology & Obstetrical Unit at Veterinary Clinical Complex, VCRI, Theni – 625 534, with a reported history of a hanging mass from the backside of the animal persisting for the past 24 hours. The cat had recently given birth to three live kittens two days prior, without the need for manual assistance. Upon physical examination, the cat displayed signs of restlessness, exhibited pain upon palpation of the mass, strained during palpation and showed a protrusion of the mass from the vaginal cavity.

A clinical assessment of the animal revealed pink and moist conjunctival mucous membranes, a rectal temperature of 38.7°C, a heart rate of 128 beats per minute and a respiratory rate of 35 breaths per minute. The prolapsed mass appeared severely soiled, mildly discolored and exhibited edema (Fig. 1). Notably, there were no apparent wounds, abrasions or scarring on the surface of the prolapsed uterine mass. Based on the presented history, clinical observations, and obstetrical examination, the diagnosis for this case was established as postpartum bicornual total uterine prolapse.

Treatment and Discussion

In this case, a manual repositioning method was employed, as there was no evidence of necrotized prolapsed tissue during the presentation. The cat was sedated with Inj. Xylazine (1mg per Kg) and Inj. Ketamine (10 mg per kg B.Wt) intramuscularly. Subsequently, the prolapsed mass underwent thorough cleansing with saturated lukewarm water. To alleviate uterine tissue swelling, the affected uterine horns' area was covered with a hyperosmotic solution (50% Dextrose) soaked bandage cloth for 15 minutes. Following this, the uterine mass was further cleaned with normal saline and a metronidazole solution. K-Y lubricant gel and lignocaine gel were generously applied to the mass to ensure lubrication and provide analgesia.The mass was lifted and held in one hand, while slight pressure was applied to one horn of the uterus using the other hand. Once one horn was fully reduced into the vagina, the other horn underwent a similar reduction process. The reduced mass was then repositioned in the pelvic cavity using a finger, along with flushing normal saline into the uterine lumen. To prevent further recurrences, vulval lips purse-string stay sutures were strategically placed (Polyamide 3/0). To enhance smooth muscle contraction and prevent the recurrence of prolapse, an intramuscular injection of Oxytocin (2 IU) and 1.0 ml/kg of 10% calcium gluconate intravenously over 10 to 20 minutes with 5% DNS was administered. The cat received a single dose of Inj. Cefovecin antibiotic S/C at 8 mg per kilogram bwt, Inj. Meloxicam at 0.2 mg/kg bwt SC and followed by 0.05 mg/kg bwt PO for three days. The queen recovered without any complications.

Fig.1 Cat bicornual total uterine prolapse reduction procedures

In cats, uterine prolapse is considered an obstetrical emergency and is more frequently

observed than in dogs (Biddle *et al.,* 2000). This condition has been documented during queening in a pregnant queen (Ucmak *et al.,* 2018). Uterine prolapse occurs when the uterus inverts and passes through the cervix into the vagina (Deroy *et al.,* 2015), although instances can occur without mucosal eversion (Bigliardi *et al.,* 2014). Complete uterine prolapse has been reported in cats aged between 10 months to 6 years (Ucmak *et al.,* 2018), with an incidence rate of less than 0.03% . The complication can manifest in two forms: a complete or bilateral form where both uterine horns prolapse, or a unilateral form where one uterine horn, with or without the uterine body, undergoes prolapse (Sharma *et al.,* 2019).

While the definitive cause of uterine prolapsed remains unknown, several potential factors have been identified, including excessive relaxation and stretching of pelvic muscles, extensive dilatation of the cervix, uterine atony due to metritis, incomplete separation of placental membranes, severe tenesmus, mesovarium weakness, and rupture of the mesometrium (Bigliardi *et al.,* 2014 and Sabuncu *et al.,* 2017). If the condition persists for more than 6 hours, the uterus is typically oedematous. Manual reduction can be attempted if the prolapsed mass is not necrotic. The mass is reduced by using hypertonic solution and lubrication is necessary before reduction (Biddle *et al.,* 2000). Ovariohysterectomy (OHE) is the recommended mode of treatment in cases of severe devitalization, damage to the uterus, as well as rupture of the broad ligament (Deroy *et al.,* 2015).

Administered at a dose of 3.6 mg per pound (8 mg per kilogram) of body weight subcutaneously, Inj. Cefovecin belongs to the third generation of Cephalosporins and exhibits a broad spectrum of activity against both Gram-positive and Gram-negative bacteria. Its mechanism of action involves the inhibition of bacterial cell wall synthesis, and the effects of the injection persist for up to 14 days. This aqueous, non-depot injection allows for rapid release, providing sustained and uninterrupted therapeutic drug concentrations. This formulation offers a convenient solution for cat owners, ensuring that their pets receive the necessary treatment without the stress of administering daily oral medications (Rangasamy *et al.,* 2021).

Summary

In the present case, a cat presented with a non-necrotic prolapsed mass, devoid of any wounds or lacerations on the protruding tissue. Repositioning to its normal anatomical position was successfully accomplished by applying KY lubricant with lignocaine gel, eliminating the need for spaying. As a component of the comprehensive treatment plan, a singular dose of Inj. Cefovecin was promptly and decisively administered to address the complete uterine prolapse, thereby contributing to a favourable prognosis for the overall well-being of the cat.

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