

## Case Report

### Management of Bilateral Postpartum Uterine Prolapse in a Persian Cat at Klinik Hewan Jogja

#### *Manajemen Postpartum Bilateral pada Prolaps Uterine Kucing Persia di Klinik Hewan Jogja*

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#### Abstrak

Prolaps uterus adalah eversi dan penonjolan mukosa uterus melalui serviks dan vagina. Kondisi ini jarang terjadi pada anjing dan kucing dan biasanya terjadi dalam 48 jam pasca persalinan. Distokia atau persalinan yang berkepanjangan dapat menjadi faktor predisposisi hewan terhadap prolaps uterus. Seekor kucing betina Persia berusia 2 tahun, berat 4 kg, dibawa ke Klinik Hewan Jogja pukul 22.00 dengan versi bilateral kornu uterus (tanduk uterus), perdarahan aktif, edema, dan tanda-tanda yang sesuai dengan syok hemoragik. Menurut pemiliknya, kucing tersebut telah melahirkan enam anak kucing yang sehat di rumah. Berdasarkan anamnesis, pemeriksaan fisik, dan observasi klinis, kucing tersebut didiagnosis menderita prolaps uterus pasca persalinan bilateral. Penanganan definitif dilakukan dengan ovariohisterektomi (OH), termasuk amputasi kornu uterus yang mengalami prolaps. Pasca operasi, kucing tersebut diberi ceftriaxone (20 mg/kg BB setiap 12 jam IM), tramadol (3 mg/kg BB setiap 12 jam SC), asam traneksamat (20 mg/kg BB setiap 12 jam IM/IV), dan suplemen zat besi (0,4 mL setiap 24 jam IM) selama 3 hari. Perawatan luka harian terdiri dari pembersihan dengan kapas yang dibasahi larutan NaCl dan larutan penisilin-streptomisin, diikuti dengan pemberian krim kloramfenikol topikal. Setelah tiga hari observasi, pasien pulih tanpa komplikasi luka pasca operasi.

**Kata kunci:** ovariohisterektomi; kucing Persia; prolaps uterus

#### Abstract

Uterine prolapse is the eversion and protrusion of the uterine mucosa through the cervix and vagina. It is uncommon in dogs and cats and typically occurs within 48 hours postpartum. Dystocia or prolonged labor may predispose animals to uterine prolapse. A 2-year-old, 4-kg Persian queen was presented to Klinik Hewan Jogja at 10.00 pm with bilateral eversion of the uterine cornua (uterine horns), active hemorrhage, edema, and signs consistent with hemorrhagic shock. According to the owner, the cat had given birth to six healthy kittens at home. Based on anamnesis, physical examination, and clinical observations, the cat was diagnosed with bilateral postpartum uterine prolapse. Definitive management was performed by ovariohysterectomy (OH), including amputation of the prolapsed uterine cornua. Postoperatively, the cat was given ceftriaxone (20 mg/kg BW q12h IM), tramadol (3 mg/kg BW q12h SC), tranexamic acid (20 mg/kg BW q12h IM/IV), and an iron supplement (0.4 mL q24h IM) for 3 days. Daily wound care consisted of cleansing with cotton moistened with a NaCl solution and penicillin-streptomycin solution, followed by the application of topical chloramphenicol cream. After three days of observation, the patient recovered without postoperative wound complications.

**Keywords:** ovariohysterectomy; Persian cat; uterine prolapse

## Introduction

Pets are domesticated animals that provide companionship and require specialized care due to their dependence on humans. Cats are among the most commonly kept pets. Queens can produce multiple offspring; feline gestation typically lasts 63-65 days and a litter commonly consists of 4-6 kittens (Sendana *et al.*, 2019). Postpartum disorders can still occur even after an apparently normal parturition.

Uterine prolapse is a reproductive disorder that may occur after delivery and represents an uncommon obstetric emergency in cats (Sabuncu *et al.*, 2016). It is defined as the descent and eversion of one or both uterine cornua during parturition or in the postpartum period (Sabarinathan *et al.*, 2020). The exact cause is often unknown; however, most cases occur during or after prolonged or difficult labor. Predisposing factors include pelvic ligament relaxation, excessive straining or uterine contractions, oxytocin-induced hyperactive contractions, incomplete placental separation, pain/discomfort, and prolonged labor duration (Sabuncu *et al.*, 2016; Sabarinathan *et al.*, 2020). High body condition score (BCS) has also been associated with increased risk of uterine prolapse (Binli *et al.*, 2021).

Treatment can be performed by gentle manual reduction when the tissue remains viable, or by surgical management including amputation of the prolapsed uterine cornua and/or ovariohysterectomy (Apritya and Widyawati, 2020). This report describes the clinical presentation and surgical management of bilateral postpartum uterine prolapse in a Persian cat at Klinik Hewan Jogja.

## Materials And Methods

### Signs and Medical History

A 2-year-old Persian queen (calico coat) named El, weighing 4 kg with a body condition score (BCS) of 5/9, was presented on August 30, 2023, at 10.00 pm. According to the owner, the cat had given birth to six kittens at home during a normal parturition. Shortly after parturition, protrusion of both uterine cornua through the vulva was observed, accompanied by bleeding. On presentation, the protruded tissue appeared hyperemic with marked edema, and the cat showed clinical signs consistent with hemorrhagic shock. The fur around the tail and ventral abdomen was wet due to bleeding (Figure 1).



Figure 1. Bilateral uterine prolapse in the presented cat.

### Clinical Examination

On physical examination, the cat was hypothermic with a body temperature of 37.3°C, as Widodo *et al.* (2011) mention that the normal range for cat temperature is between 37.8-39.5°C. Hypothermia may develop when animals are exposed to prolonged periods of cold air or water without an adequate heat source (Muhadjir and Wandia, 2019). The hair from the ventral abdomen to the tail was damp due to bleeding.

The cat had a respiratory rate of 60 breaths/min, which exceeded the reported reference range (20–40 breaths/min) (Widodo *et al.*, 2011; Asmal *et al.*, 2022). The heart rate was 120 beats/min, remaining within the expected physiological range. Capillary refill time (CRT) was prolonged (>2 s), indicating reduced peripheral perfusion and consistent with systemic compromise such as shock or dehydration (Englar, 2017; Jackson and Cockcroft, 2002; Mulyani *et al.*, 2021). On vulvar inspection, two mucosal protrusions compatible with the uterine cornua were observed, accompanied by hemorrhage and edema.

**Table 1.** Blood chemistry results of the presented case.

Parameter	Result	Reference range
BUN (mg/dL)	23.3	15-34*
ALT/SGPT (U/L)	58.3	28-76**

Sources: \*Tilley and Smith (2011); \*\*Hines (2013).

### Diagnosis and Treatment

The diagnosis of bilateral postpartum uterine prolapse involving both uterine cornua was

established based on anamnesis, clinical signs, and physical examination findings. The prognosis was considered favorable with prompt definitive treatment.

Treatment options for uterine prolapse include manual repositioning and surgical management. In this case, surgical management was selected due to tissue condition and ongoing hemorrhage, and definitive treatment was performed by ovariohysterectomy (OH) with amputation of the prolapsed uterine cornua.

### Results And Discussion

Blood chemistry analysis (Table 1) showed blood urea nitrogen (BUN) and alanine aminotransferase (ALT/SGPT) within the reference ranges. BUN is commonly used to assess renal function; alterations may occur with changes in renal perfusion or renal disease (Wulandari and Yuniarti, 2023). ALT/SGPT is a hepatocellular enzyme used as an indicator of liver inflammation or injury (Nurdiana, 2023).

#### Pre-operation

The cat was fasted from food and water for 6-8 hours before anesthesia. Surgical instruments and materials were sterilized using an autoclave. Premedication with atropine sulfate was administered intravenously at a dosage of 0.04 mg/kg BW. Atropine is an anticholinergic medication used to reduce hypersalivation associated with ketamine administration (Papich, 2020; Prayoga *et al.*, 2021).

General anesthesia was induced using ketamine and xylazine administered intravenously at dosages of 5 mg/kg BW and 1 mg/kg BW, respectively. Ketamine provides anesthesia with modest analgesic effects through non-competitive antagonism of NMDA receptors, while xylazine is an alpha2-adrenergic agonist that decreases neurotransmitter release (Papich, 2020). To support hemostasis, phytomenadione (vitamin K1) was administered subcutaneously at 1 mg/kg BW (Papich, 2020).

#### Intra-operation

A laparotomy was performed to facilitate relocation and return of the uterus to its anatomical position (Figure 2a). Repositioning was facilitated by applying 10% dextrose solution to the uterine mucosa followed by gentle massage to reduce swelling. Hypertonic solutions may help draw fluid from edematous tissues. Ovariohysterectomy (OH) is indicated in uterine prolapse cases when there

is tissue necrosis/devitalization, irreducibility, or vascular damage (Apritya and Widyawati, 2020). In this case, management included amputation of the prolapsed uterine cornua followed by OH.

Before excision, the two prolapsed uterine cornua were secured using a figure-of-eight knot/ligature around each uterine cornu with PGA 3-0 suture material, and the tissue was then transected using a scalpel blade. Subsequently, the remaining uterus was gently reinserted through the vulva (Figure 2b).

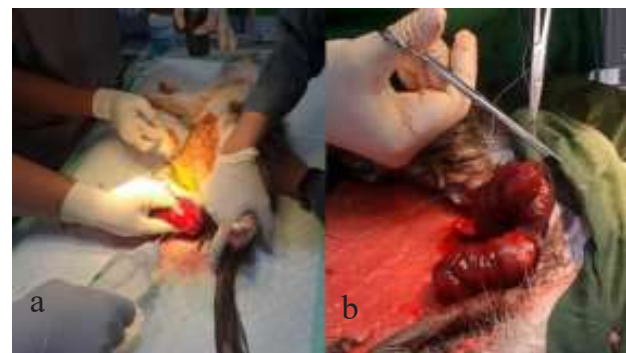


Figure 2. (a) Manual repositioning of uterine prolapse; (b) amputation of the prolapsed uterine cornua.

The OH procedure was then performed. The ovarian pedicles were clamped and ligated with PGA 3-0 suture, followed by transection. The uterine body was ligated using a figure-of-eight knot, transected, and inspected to confirm adequate hemostasis. The uterine stump was inverted using

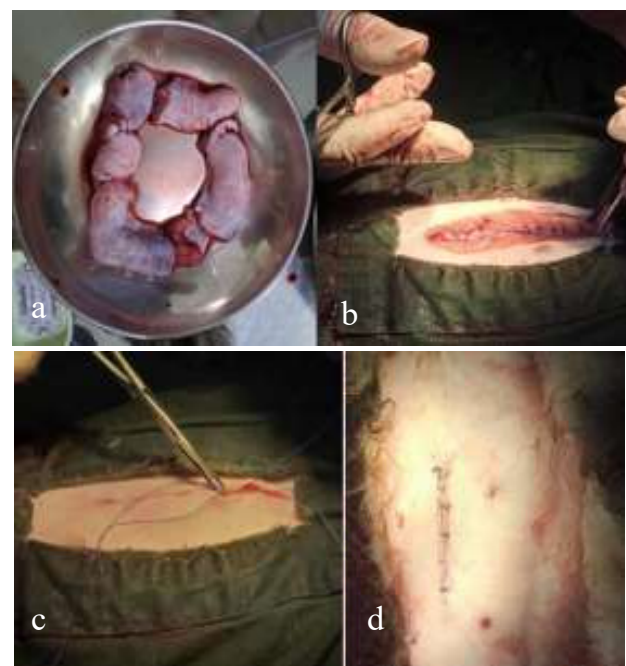


Figure 3. Ovariohysterectomy (OH) stages: (a) amputated uterus; (b) closure of muscular/subcutaneous layers; (c-d) skin closure.

the Parker-Kerr technique. The abdominal cavity was irrigated using sodium chloride solution and penicillin-streptomycin. Closure was performed with interrupted sutures in the muscle layer, continuous sutures in the subcutaneous layer, and intradermal/interlocking sutures to close the skin.

### Post-operation

Following surgery, the patient received antibiotic therapy, analgesia, antifibrinolytic therapy, iron supplementation, and wound care. Ceftriaxone was administered intramuscularly at a dosage of 20 mg/kg BW every 12 hours. Intramuscular administration ensures an adequate absorption rate and bioavailability, crucial for effective infection control. Given that ceftriaxone exhibits favorable pharmacokinetic profiles in various species, including prompt distribution and a relatively prolonged half-life, similar outcomes can likely be anticipated in cats, particularly when doses such as 20 mg/kg every 12 hours are utilized (Çorum *et al.*, 2019). Tranexamic acid was administered as antifibrinolytic therapy at a dosage of 20 mg/kg BW every 12 hours via intramuscular or intravenous injection to help control bleeding. The efficacy of tranexamic acid in controlling bleeding has been well-documented in several studies across different surgical disciplines. According to a meta-analysis examining multiple randomized controlled trials, TXA usage has been associated with significant reductions in blood loss without increasing thromboembolic events, with some studies demonstrating reductions in blood loss up to approximately 40% (Zufferey *et al.*, 2020; Movafegh *et al.*, 2011). Tramadol was administered subcutaneously at a dosage of 3 mg/kg BW every 12 hours for analgesia; tramadol is a synthetic opioid analgesic used for moderate to severe pain (Papich, 2020).

Iron supplementation was administered intramuscularly at 0.4 mL every 24 hours. The wound was treated once every 24 hours by cleansing with cotton soaked in sodium chloride and penicillin-streptomycin solution, followed by topical application of chloramphenicol cream (Plumb, 2018).

On postoperative day 3, the incision appeared dry and clean, and the sutures remained intact without evidence of loosening or dehiscence (Figure 4). Early epithelialization/scab formation was observed, and no clinical complications were noted during the observation period.



Figure 4. Postoperative wound on day 3 (a) and wound care (b).

### Conclusion

A Persian queen was diagnosed with bilateral postpartum uterine prolapse involving both uterine cornua. In cases where the prolapsed uterine tissue is devitalized or irreducible, surgical management with amputation of the affected uterine cornua followed by ovariohysterectomy is recommended (Apritya and Widyawati, 2020; Sabarinathan *et al.*, 2020). With prompt and appropriate treatment, the prognosis for uterine prolapse in cats is generally favorable (Sabuncu *et al.*, 2016; Binli *et al.*, 2021). In this case, postoperative therapy consisted of ceftriaxone (20 mg/kg BW IM q12h), tranexamic acid (20 mg/kg BW IM/IV q12h), tramadol (3 mg/kg BW SC q12h), iron supplementation (0.4 mL IM q24h), and daily wound care. The patient recovered without wound complications during the three-day observation period.

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