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Fetal Malpresentation-Associated Dystocia, Complicated with Secondary Uterine Inertia in a Domestic Shorthair Queen

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ABSTRACT

Dystocia in queens is a significant reproductive emergency, with high kitten mortality, often due to stillbirths. This case report describes the management of a 22-months-old pluriparous domestic shorthair breed queen presenting with dystocia after successfully delivering two viable kittens, followed by a retained dead fetus. Clinical examination and ultrasonography confirmed fetal death, with the hanging fetus found in the birth canal. Obstetrical management; digital manipulation failed due to secondary uterine inertia likely caused by fetal malpresentation. As an alternative to cesarean section, an en-bloc ovariohysterectomy was performed to remove both the hanging and intrauterine deceased fetuses, thereby permanently eliminating the queen's reproductive capability. Postoperative care included antibiotics, analgesics, and wound management. The case accentuates the importance of early diagnosis, timely surgical intervention, and effective post-operative care in managing dystocia, particularly in cases involving fetal death and uterine inertia. The successful use of en-bloc ovariohysterectomy as an alternative to cesarean section demonstrates its effectiveness in resolving severe dystocia and permanently addressing reproductive issues, particularly when conventional obstetric methods such as digital manipulation fail. This surgical approach offers a viable alternative to cesarean section in managing severe dystocia, reducing the risk of further complications such as uterine rupture and infection.

Key words: En-bloc ovariohysterectomy; Fetal death; Feline dystocia; Malpresentation; Uterine inertia

INTRODUCTION

Dystocia in queens (female cats) refers to difficulty in expelling or delivering kittens through the birth canal during labor, which typically lasts 6–12 hours (Dar *et al.*, 2015). The causes of dystocia are generally categorized as maternal, fetal, or a combination of both (Pretzer, 2008; Uday, 2021). Maternal causes can include obstruction of the birth canal or a functional deficiency of the uterine muscle, such as "primary uterine inertia" where the uterus fails to contract properly (Niyas *et al*., 2023). Alternatively, "secondary uterine inertia" may occur when the uterus becomes fatigued from prolonged straining due to an obstruction within the birth canal (Uday, 2021). Fetal factors contributing to dystocia including malpresentation, position and postural defects, fetal oversize, congenital anomaly and narrow pelvis of the dam are the major cause of secondary uterine inertia. The reported incidence of dystocia, or abnormal queening, ranges from 3% to 6% (Priyanka *et al.*, 2024). Of these cases, approximately 67.1 % are attributed to maternal causes, while 29.7% are associated with fetal factors (Jyothi and Rajesh, 2018). Generally, dystocia can be addressed using several approaches depending upon causes, physical examination, diagnosis of the problems, and types of uterine inertia (Trass, 2008). These include therapeutic interventions such as the administration of oxytocin to enhance uterine contractions and the supplementation of glucose or calcium when deficiencies are identified, as well as non-surgical procedures, including fetal manipulation, episiotomy, and fetotomy in cases involving a dead and oversized fetus (Khumran *et al.*, 2025). However, episiotomy and fetotomy are rarely employed in canine and feline species. In most cases, feline dystocia is treated by surgery (cesarean section). En-bloc ovariohysterectomy is an alternative to cesarean section in dogs and cats with dystocia when future reproduction is no longer desired or if dam's condition is critical, the technique involves removal of the entire uterus and ovaries while the fetuses are still inside (Ufaysa and Jiregna, 2025). This case report presents the successful surgical management of dystocia in cat using en-bloc ovariohysterectomy.

Case History

Twenty-two months old pluriparous domestic shorthair breed queen of 2.5 kg was brought to the University of Maiduguri Veterinary Teaching hospital with a history of queening two viable kittens about 11 hours prior to presentation and a hanging fetus on the birth canal which could not be voided out.

Clinical Examination

Obstetrical evaluation revealed very mild straining with no abdominal contractions, there were no discharges around the vulva which was partially dilated with a hanging fetus that was confirmed dead. The queen appeared dull, depressed and mildly dyspneic. Hanging fetal parts seen outside the birth canal includes the torso, hind quarters and tail; fetus was in dorso-sacral position, posterior longitudinal presentation with extended limbs (Figure 1). Laboratory blood test investigation revealed a normal hematocrit of the queen (packed cell volume of 30 %). Ultrasonography shows presence of a fetal mass in-utero but not motile, amniotic fluid was cloudy (anechoic) with collapsed gestational sac suggestive of fetal death (Figure 2).

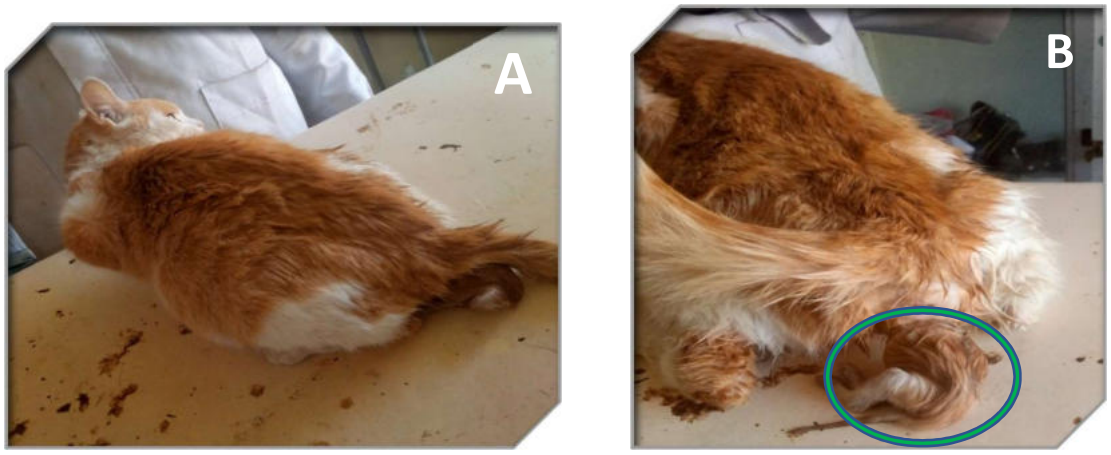

Figure 1: queen on presentation (A) and hanging fetus via the vulva (B) in posterior longitudinal presentation (circled)

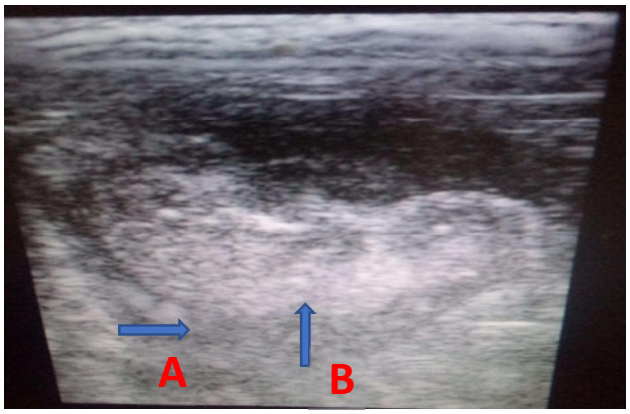

Figure 2: sonogram showing anechoic fluid (A) and longitudinal section of non-motile fetus in-utero (B)

MANAGEMENT

A single definitive surgery to minimize cumulative surgical stress and anaesthetic risks was consented and planed because the owner has no intention to breed the queen in future. En-bloc Ovario-hysterectomy was performed as requested by the owner. Pre-surgical preparations were made; lower ventral abdomen was shaved and prepared aseptically using 2% chlorhexidine gluconate and povidone iodine. 0.2ml of atropine sulphate was administered as a premedicant intramuscularly. A combination of xylazine at 0.5mg/kg and ketamine at 10mg/Kg was administered intramuscularly to achieve Anaesthesia. The queen was then positioned on dorsal recumbency and the Surgical Site was draped (Figure 3).

Surgical procedure was performed; from the level of the umbilicus posteriorly, a full thickness incision was made to expose the linea alba, further incisions was made to expose the abdomen and the gravid uterus. The right and left ovarian pedicles and ovarian vessels where clamped and triply ligated individually using chromic catgut size 2/0 and transected. The uterine body contained with the fetus was ligated using chromic catgut size 2 at the level of the cervix, it was transected and the uterus along with the ovaries were removed "En- Bloc Ovariohysterectomy" (Figure 4). The hanging fetus at the birth canal was also delivered. Muscles (abdominal) along the linea alba were sutured using simple interrupted suture pattern with vicryl size 2/0. Subcutaneous tissue was closed using apposition suture pattern using vicryl size 2/0. Thereafter skin was closed using horizontal mattress with nylon size 2/0. Povidone iodine and oxytetracycline spray were applied topically post operatively (Figure 5) and 20ml of dextrose saline was administered subcutaneously.

Post surgical medication was antibiotic and analgesic; amoxicillin injection (Amoxyinject La) 25 mg/kg intramuscularly for 5 days, piroxicam injection 0.3mg/kg intramuscularly for 4 days and daily wound dressing of the surgical site and tropical antibiotic (oxytetracycline spray) on suture site for 5 days. Skin suture materials were removed after 10 days and the queen recovered.

DISCUSSION

Kitten mortality associated with feline dystocia is notably high, with a significant proportion of deaths occurring as stillbirths (Axnér *et al.*, 2025). Most stillborn kittens are presumed to have died either in utero or within the birth canal prior to the initiation of clinical intervention (Axnér, *et al.*, 2025). In the present case, the queen had successfully delivered two viable kittens prior to presentation, but subsequent to that, a hanging fetus was noticed which could not be expelled. Clinical findings of mild straining with no abdominal contractions, a partially dilated vulva, and the

presence of a hanging dead fetus are typical signs of obstructive dystocia (Priyanka, *et al.,* 2024).

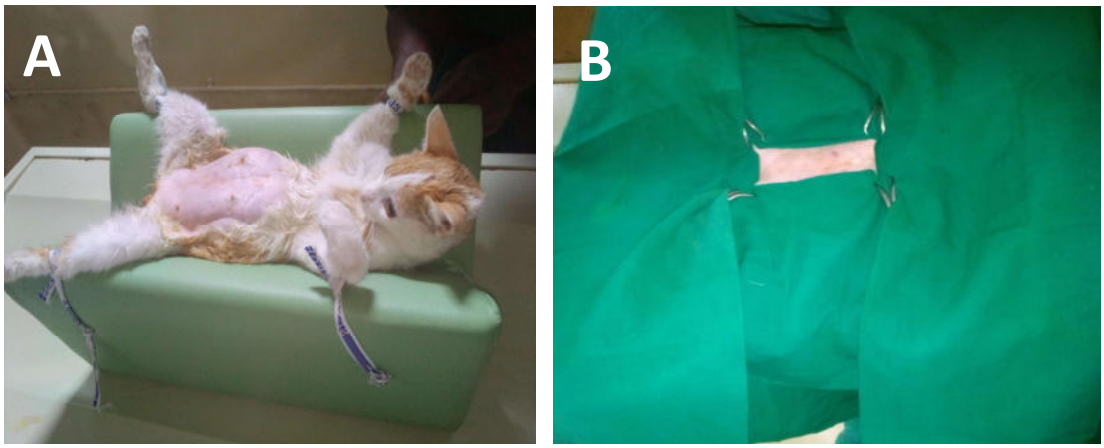

Figure 3: positioning of the queen on dorsal recumbency (A) and draped surgical site (B)

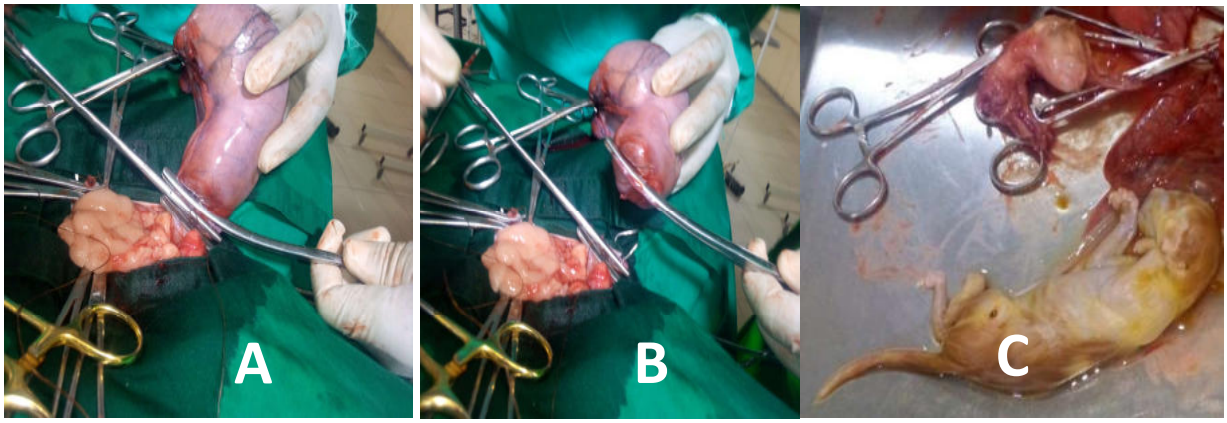

Figure 4: ligation of uterine body at the level of the cervix (A), transection of the uterus (B) and dead fetus (C)

Figure 5: closure of the skin with Horizontal mattress (A), surgical site (B) and queen after surgery (C)

Ultrasonography remains a crucial diagnostic tool for evaluating pregnancy status and fetal viability at a given time point. The sonographic image with B-mode ultrasound machine demonstrated hyper-echoic regions corresponding to fetal structures, interspersed with central anechoic zones (Figure 2) contained in the queen's uterus. The ultrasonographic examination revealed the absence of detectable fetal heartbeats, confirming stillbirth.

Dystocia in cats is defined as difficulty in expelling the fetus or delivery of the kitten through the birth canal at the time of labor (usually between 6-12 hours). Consistent with previous reports, maternal factors account for the majority of dystocia cases in queens, with uterine inertia being the most frequent underlying cause (Bailin *et al.*, 2022; Axnér, *et al*., 2025). Nonetheless, uterine inertia may also manifest as a secondary clinical sign of other underlying conditions (Munnich and Kuchenmeister, 2009). Effective obstetrical management of feline dystocia requires precise manual techniques to minimize risk to both the queen and the fetuses. In this case, the etiology of dystocia in this case appears to be multifactorial, with both maternal and fetal factors playing a role. Attempts at digital manipulation (manual traction) of the retained fetus using hemostatic forceps, despite adequate lubrication, were unsuccessful due to the fact that the cervix has begun closing (constricting on the fetus), secondary uterine inertia

resulting from fetal malpresentation and fetal death. The management of dystocia in this case required surgical intervention. While cesarean section is a common treatment for dystocia, en-bloc ovariohysterectomy was performed to remove both the hanging and intrauterine deceased fetuses; this was done while the fetus was still in the uterus. This management approach aligns with the findings of Kefyalew (2021), who documented the use of en-bloc ovariohysterectomy as an effective treatment for feline dystocia. Although this procedure may subject the dam to additional physiological stress and extended anesthesia time (Kefyalew, 2021), it remains a viable alternative to cesarean section in dystocia management in both cats and dogs (Robbins and Mullen, 1994). The approach of en-bloc ovariohysterectomy, although more invasive than a cesarean section, may reduce the risk of postoperative complications, such as retained placenta or uterine infection, by ensuring the complete removal of all fetal and placental tissues. Additionally, the decision to perform an en-bloc ovariohysterectomy emphasizes the importance of timely intervention in managing dystocia. Prolonged dystocia, if left untreated, can lead to severe maternal and fetal complications, including uterine rupture, septicemia, and even death (Jyothi and Rajesh, 2018). Therefore, veterinarians must be vigilant in diagnosing dystocia early and choosing an appropriate management strategy based on the individual circumstances of each case.

In conclusion, this case report highlights the need for a comprehensive approach to managing dystocia in queens, considering both maternal and fetal factors. Early recognition, timely diagnosis using imaging tools like ultrasonography, and prompt surgical intervention are critical to improving the outcome for both the queen and her kittens. Although en-bloc ovariohysterectomy is an invasive procedure, it remains a valuable alternative to cesarean section in cases of fetal death and uterine inertia, particularly when conservative treatments fail. The case further emphasizes the effectiveness of en-bloc ovariohysterectomy as alternative to cesarean section by eliminating the need for future spaying of the queen.

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Conflict of interest

The authors declare no conflict of interest.

Authors Contribution

RIA. participated in managing the case and wrote the manuscript, SOA., UMB. and JS contributed in writing and proof reading the manuscript and MAW. mentored and supervised all activities.

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