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MANAGEMENT OF FELINE DYSTOCIA DUE TO UTERINE RUPTURE IN CIKAL PET CARE, POLEWALI MANDAR, WEST SULAWESI: A CASE REPORT

Laporan Kasus: Penanganan Distokia akibat Ruptur Uterus pada Kucing di Cikal Pet Care, Polewali Mandar, Sulawesi Barat

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Abstract

The trend of cat ownership in the community continues to increase along with the growing interest in companion animals; however, this condition is not free from various reproductive medical problems. One of the disorders frequently encountered is difficulty in parturition, or dystocia, which may lead to serious complications if not managed promptly and appropriately. Dystocia is a reproductive emergency in cats that can progress to uterine rupture if not treated adequately. This case report aims to describe the clinical findings, diagnostic approach, and surgical management of a cat with dystocia accompanied by uterine rupture. The method used was a case report based on anamnesis, physical examination, and abdominal palpation, with confirmation through intraoperative findings during exploratory laparotomy, considering the limitations of supporting diagnostic examinations. The examination results revealed abdominal enlargement, dehydration, and the presence of free fetuses within the abdominal cavity due to rupture of the uterine wall. Management was performed through total ovariohysterectomy accompanied by abdominal lavage and postoperative therapy. It is concluded that a combination of careful clinical diagnosis and immediate surgical intervention is an effective approach in managing cases of dystocia complicated by uterine rupture in cats.

Keywords: dystocia, uterine rupture, cat, exploratory laparotomy, ovariohysterectomy

Abstrak

Tren pemeliharaan kucing di masyarakat terus meningkat seiring dengan tingginya minat terhadap hewan kesayangan, namun kondisi ini tidak terlepas dari berbagai permasalahan

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medis reproduksi. Salah satu gangguan yang cukup sering dijumpai adalah kesulitan melahirkan atau distokia, yang berpotensi menimbulkan komplikasi serius apabila tidak ditangani secara tepat dan cepat. Distokia merupakan kegawatdaruratan reproduksi pada kucing yang dapat berkembang menjadi ruptur uterus apabila tidak ditangani secara adekuat. Laporan kasus ini bertujuan untuk mendeskripsikan temuan klinis, penegakan diagnosis, serta penatalaksanaan bedah pada kucing dengan distokia yang disertai ruptur uterus. Metode yang digunakan adalah laporan kasus berdasarkan anamnesis, pemeriksaan fisik, dan palpasi abdomen, serta konfirmasi melalui temuan intraoperatif pada laparotomi eksplorasi, mengingat keterbatasan pemeriksaan penunjang diagnostik. Hasil pemeriksaan menunjukkan adanya pembesaran abdomen, kondisi dehidrasi, serta ditemukannya fetus bebas di dalam rongga abdomen akibat ruptur dinding uterus. Penanganan dilakukan dengan ovariohisterektomi total disertai lavage rongga abdomen dan terapi pascaoperatif. Disimpulkan bahwa kombinasi diagnosis klinis yang cermat dan tindakan bedah segera merupakan pendekatan yang efektif dalam menangani kasus distokia dengan komplikasi ruptur uterus pada kucing.

Kata kunci: distokia, ruptur uterus, kucing, *laparotomy* eksploratif, *ovariohisterektomy*

INTRODUCTION

The trend of cat ownership in the community continues to increase along with the growing interest in companion animals; however, this condition is not free from various reproductive medical problems. One of the disorders frequently encountered is difficulty in parturition, or dystocia, which may lead to serious complications if not managed promptly and appropriately. Cats are one of the most commonly encountered animals, either as pets or living freely in the human environment. Reproductively, female cats are seasonal polyestrous animals with high fertility rates, capable of giving birth to approximately 1-6 kittens in a single gestation period and experiencing parturition up to 1-3 times per year. This high reproductive capacity means that a single female cat has the potential to produce up to ±40 kittens within five years of its reproductive lifespan (Kennedy *et al.*, 2020). In feral conditions, free interaction between male and female cats during the estrus period increases the likelihood of pregnancy, so without population control efforts, the number of cats can increase significantly, even manifold (Rahmiati *et al.*, 2020).

The high frequency of pregnancy and parturition in cats also increases the risk of reproductive disorders, one of which is dystocia. This condition is an obstetric emergency that can lead to serious complications for both the dam and fetuses, including fetal death, infection, and uterine rupture. If dystocia is not promptly managed, prolonged uterine contractions and increased intrauterine pressure can cause disruption of uterine wall integrity, which may potentially result in uterine rupture. Uterine rupture is a life-threatening condition that can cause intra-abdominal hemorrhage, contamination of the abdominal cavity, and septic peritonitis (Davidson, 2010; Davies *et al.*, 2016).

Management of dystocia cases complicated by uterine rupture requires immediate surgical intervention, both as a diagnostic and therapeutic measure. Exploratory laparotomy and ovariohysterectomy are procedures frequently recommended to address this condition, particularly in cases with severe uterine damage. Therefore, this case report aims to describe the clinical findings, diagnostic approach, and surgical management of a cat with dystocia accompanied by uterine rupture, as a contribution to the management of emergency reproductive cases in veterinary practice (Hayes, 2004; González-Domínguez *et al.*, 2010).

In field veterinary practice, particularly in healthcare facilities with limited diagnostic facilities and infrastructure, diagnosis often relies on basic clinical examination. The limited availability of supporting diagnostic tools such as ultrasonography, radiography, or laboratory

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examinations can pose challenges in confirming a definitive diagnosis. This situation requires veterinarians to conduct comprehensive evaluations based on anamnesis, physical examination, and interpretation of clinical signs observed in the patient (Radostits *et al.*, 2007).

In cases of reproductive disorders, abdominal palpation remains a clinically valuable diagnostic method, particularly for detecting uterine enlargement, the presence of fetuses, or intra-abdominal masses. Abdominal palpation combined with clinical findings such as postparturient abdominal enlargement, changes in vital signs, dehydration, and declining patient general condition can provide a strong basis for establishing an initial diagnosis. This approach becomes increasingly relevant in emergency conditions, where delayed management can increase the risk of complications and worsen patient prognosis (Aulia *et al.*, 2022).

Therefore, in this case report, the diagnosis of dystocia complicated by uterine rupture was established clinically based on anamnesis, physical examination, and intraoperative findings, without the support of diagnostic examinations. This approach reflects real-world conditions in the field and emphasizes the importance of the clinician's ability to make rapid and appropriate decisions based on comprehensive clinical evaluation, to save the patient's life and prevent more severe complications.

RESEARCH METHODS

Case Details

A client brought a 7-year-old female Persian peak nose cat weighing 3.4 kg to Cikal Pet Care for clinical examination with the chief complaint of lethargy, pale oral mucous membranes, and an enlarged abdomen three days after giving birth, with a history of having given birth three times previously. Physical examination revealed that Capillary Refill Time (CRT) and skin turgor were greater than 3 seconds, body temperature was 36.5°C, respiratory rate (RR) was 20 breaths/minute, and heart rate (HR) was 98 beats/minute. Medical history indicated that the cat had never been vaccinated but had received deworming medication. The cat was kept caged, not allowed to roam freely, and had not eaten or drunk for three days. Evaluation was performed through physical examination using inspection and palpation methods. Diagnosis was based on clinical findings, considering the limited availability of supporting diagnostic facilities and equipment at the service location.

Exploratory Laparotomy Surgery

Exloratory laparotomy in the cat was performed after patient stabilization and general anesthesia induction. A midline incision was made through the linea alba to aseptically open the abdominal cavity, followed by thorough exploration of the abdominal organs. Examination revealed uterine wall rupture accompanied by intra-abdominal hemorrhage and fluid contamination, a condition commonly resulting from dystocia, trauma, or excessive uterine contractions. The recommended management for uterine rupture cases in cats is total ovariohysterectomy to control hemorrhage, prevent septic peritonitis, and eliminate the source of infection. Following uterine removal, the abdominal cavity was lavaged using warm sterile NaCl solution until clean, then closed in layers. Postoperatively, the patient received fluid therapy, broad-spectrum antibiotics, and analgesics, with intensive monitoring for signs of postoperative complications (Aulia *et al.*, 2022).

Ovariohysterectomy

Ovariohysterectomy is a surgical sterilization method frequently performed by veterinary practitioners in Indonesia. Before surgery, the cat was fasted for 12 hours, then premedicated with atropine sulfate at a dose of 0.2 mg/kg BW subcutaneously. General anesthesia was induced with ketamine HCl at a dose of 10 mg/kg BW intramuscularly. After anesthesia took

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effect, the cat was positioned in dorsal recumbency, and an intravenous line of 0.9% NaCl solution was placed through the radial vein. The ventral abdominal area was aseptically prepared by shaving the fur and disinfecting with 70% alcohol and povidone iodine, then a sterile drape was placed. An incision was made on the linea alba approximately 1-2 cm caudal to the umbilicus, approximately ±5 cm in length, to open the abdominal cavity. Once the abdominal cavity was opened, exploration was performed to identify the uterine horns and ovaries. The uterine horns were exteriorized using a spay hook or manually, then the ovaries were removed by severing the suspensory ligament. The ovarian vascular complex was ligated and cut using the three-forceps technique with absorbable suture, and the same procedure was performed on the contralateral ovary. Subsequently, the broad ligament was separated from the uterine horns, then the uterine body was ligated and cut near the uterine cervix so that the uterus and ovaries could be completely removed. After checking for hemorrhage, the abdominal cavity was closed in layers including the linea alba, subcutaneous tissue, and skin, followed by postoperative care according to the patient's condition (Prayoga *et al.*, 2021).

RESULTS AND DISCUSSION

Results

Based on the examination results, several clinical findings indicated a fairly serious systemic disorder. Generally, the cat appeared very weak, with decreased response to mild stimuli, indicating an overall decline in physiological condition. Rectal temperature measurement showed a value of 36.5°C, which is classified as mild hypothermia in cats and possibly related to systemic condition and decreased metabolic activity. This condition is often found in patients with poor general status or those experiencing systemic circulatory disturbances. Additionally, CRT examination showed capillary refill time exceeding 3 seconds, accompanied by decreased skin turgor, further strengthening the suspicion of dehydration and hemodynamic disturbance.

Examination of the respiratory system showed a respiratory rate of 20 breaths per minute with costal breathing pattern. Although this frequency is still within the physiological range, the breathing pattern needed careful interpretation considering the patient's general condition. Pulse rate examination showed a value of 98 beats per minute, indicating a compensatory body response to the ongoing systemic condition. Abdominal palpation identified abnormal abdominal enlargement, accompanied by palpation of an intra-abdominal mass with consistency resembling fetal structures. This finding raised strong suspicion of reproductive system disorder. Overall, the significant dehydration condition was suspected to be triggered by the absence of nutritional and fluid intake for three days, thus worsening the patient's general condition and causing progressive weakness (Figure 1).

During exploratory surgery, after incision and opening of the abdominal cavity, a significant amount of fluid accumulation was found. The fluid was distributed throughout the abdominal cavity and had an unpleasant odor, indicating that a pathological process had occurred, possibly bacterial contamination or an inflammatory process that had been ongoing for some time. The presence of fluid with such characteristics indicated disruption of intra-abdominal organ integrity before the surgical procedure. During initial visual examination during exploration, fetuses were also found free within the abdominal cavity. Additionally, fetuses still within the uterus were identified as already dead, demonstrating that the pathological process had seriously impacted fetal viability (Figure 2).

Further exploration of the reproductive organs revealed a rupture in the uterine wall of macroscopically visible size. This rupture was suspected to be the pathway through which fetuses exited the uterine lumen into the abdominal cavity. This damage to the uterine wall indicated disruption of the structural integrity of the reproductive organ, so the uterus was no

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longer able to maintain fetuses within it. This condition had the potential to cause further complications in the form of peritonitis due to contamination of uterine contents into the abdominal cavity. The presence of free fetuses in the abdominal cavity accompanied by malodorous fluid strengthened the suspicion that the rupture event had been occurring for some time before the patient received surgical management.

Overall, these intraoperative findings indicated serious complications in the reproductive system, in the form of uterine rupture accompanied by abdominal cavity contamination. This condition falls into the emergency category requiring immediate intervention to prevent further deterioration. Based on the surgical exploration results and their correlation with previous clinical findings, the diagnosis was established clinically with reference to the intraoperative evidence found. This decision was made considering the limitations of available diagnostic supporting examinations, so direct evaluation through surgical intervention became the primary basis for determining the diagnosis and subsequent management steps.

Discussion

Dystocia is one of the reproductive disorders frequently occurring in dogs and cats and significantly increases the risk of mortality for both dam and fetuses. Dystocia can be caused by maternal factors (factors originating from the mother) or fetal factors. In this case, the history of giving birth several days earlier, postparturient abdominal enlargement, and palpation of structures resembling fetuses on abdominal examination indicated the presence of retained intrauterine fetuses that had not been successfully expelled normally. This condition is highly likely related to uterine inertia, either primary or secondary, which is the most common cause of maternal dystocia. Secondary uterine inertia can occur due to uterine muscle fatigue after prolonged contractions, particularly in obstructed labor processes (Davidson, 2010).

Prolonged dystocia can lead to increased intrauterine pressure, disrupted uterine vascularization, and weakening of uterine wall structure. This condition has the potential to progress to uterine rupture, especially if not promptly managed. In this case, the finding of free fetuses within the abdominal cavity indicated that uterine rupture had occurred, allowing fetuses to escape from the uterine lumen. Uterine rupture in small animals is rarely reported in veterinary literature (Davies *et al.*, 2016). Causes of uterine rupture in dogs and cats include various factors, including trauma, uterine horn developmental anomalies, and pathological conditions such as pyometra (González-Domínguez *et al.*, 2010). Although uterine rupture in pregnant cats is a rare finding, it is occasionally observed during the peripartum period, often in patients with dystocia, after cesarean section procedures, or in combination with pyometritis (Hayes, 2004). Additionally, uterine rupture can occur during the postpartum period in animals administered oxytocin or prostaglandins to induce labor or as treatment for metritis or dystocia (Navya *et al.*, 2017). Most cases of uterine rupture involve compromise of the uterine wall secondary to pathological conditions such as endometritis, pyometra, intrauterine fetal death, uterine torsion, or prolapse, leading to structural weakness (Davies *et al.*, 2016). Uterine rupture is highly associated with pregnancy-related factors, and trauma-induced uterine rupture is often observed in pregnant animals.

Clinical findings of slowed RR accompanied by HR were caused by fetal fluid entering the abdominal cavity. This condition resulted in a combination of severe dehydration, prolonged pain, and decreased metabolic status due to absence of nutritional and fluid intake for several days. Furthermore, the presence of malodorous intra-abdominal fluid pointed to an ongoing inflammatory or infectious process, thereby increasing the risk of septic peritonitis. Diagnosis in this case was based on clinical and intraoperative findings, considering the limited diagnostic

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support facilities at the service location. Exploratory laparotomy served not only as a diagnostic procedure but also as a therapeutic one. In cases of uterine rupture, total ovariohysterectomy is the procedure performed to control hemorrhage, eliminate the source of infection, and prevent further complications such as peritonitis and sepsis. Abdominal cavity lavage using warm sterile NaCl solution was performed to reduce intra-abdominal contamination before layered wound closure. Administration of NaCl fluid therapy, broad-spectrum antibiotics, and postoperative analgesics constituted an important part of supporting patient recovery (Aulia *et al.*, 2022).

Infrared therapy was administered postoperatively with the aim of improving local blood circulation, reducing pain and edema, and accelerating the wound healing process. Local heat application through infrared therapy has been reported to enhance blood flow and tissue perfusion through vasodilation mechanisms, thereby supporting the oxygen and nutrient supply required for wound healing (Vatansever & Hamblin, 2012). Furthermore, the thermal and non-thermal effects of infrared therapy play a role in modulating inflammatory responses, stimulating fibroblast activity, and increasing collagen synthesis, contributing to the acceleration of the proliferative phase of wound healing (AlGhamdi *et al.*, 2012; Enwemeka *et al.*, 2004). Several studies have also shown that infrared therapy can provide analgesic effects and tissue relaxation, thereby helping to reduce postoperative pain and support patient recovery following surgical procedures (Ferraresi *et al.*, 2012).

CONCLUSION AND SUGGESTIONS

Conclusion

This case demonstrates that dystocia in cats can develop into serious complications in the form of uterine rupture if not managed promptly and appropriately. Clinical findings including lethargy, severe dehydration, postparturient abdominal enlargement, and palpation of structures resembling fetuses on abdominal examination serve as important indicators of reproductive disorders. Although without the support of diagnostic examinations, the combination of anamnesis, physical examination, and intraoperative findings proved adequate in establishing the diagnosis of dystocia accompanied by uterine rupture. Exploratory laparotomy played a crucial role as both a diagnostic and therapeutic procedure, while total ovariohysterectomy was an effective management choice to control hemorrhage, eliminate the source of infection, and prevent further complications such as septic peritonitis and sepsis. This case emphasizes the importance of clinical vigilance and rapid decision-making in managing reproductive disorders in cats, particularly in healthcare facilities with limited diagnostic capabilities.

Suggestions

Field veterinary practitioners are advised to increase vigilance regarding signs of dystocia and its complications in postpartum cats, especially when accompanied by abdominal enlargement, declining general condition, and changes in vital signs. Abdominal palpation examination retains important diagnostic value and can serve as a basis for clinical decision-making in emergency conditions when supporting examinations are unavailable.

Furthermore, education for animal owners regarding the importance of postpartum monitoring, adequate nutrition provision, and reproductive control through sterilization needs to be enhanced to prevent similar cases. Future research and case reports are expected to be supported by more comprehensive diagnostic examinations to enrich clinical data and improve the quality of reproductive disorder management in cats.

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Figures

Figure 1. Condition of the cat showing weakness and unresponsiveness to mild stimuli

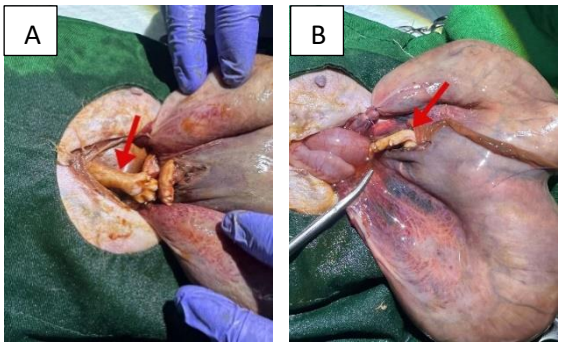

Figure 2. Cat's condition. (A) Arrow shows the presence of fetuses in the abdominal cavity, (B) Arrow shows uterine rupture

Figure 3. Administration of infrared therapy post-surgery as supportive treatment in postoperative care.

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