



A Unilateral Uterine Horn Torsion in a Pregnant Angora Cat

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Abstract: Uterine torsion, which causes dystocia is a rare problem in domestic animals except cattle. Uterine torsion is defined as the rotation of the uterine horns around the longitudinal axis of one or both of the uterine horns more than 45°. An Angora cat suffered from dystocia was brought to Atatürk University Animal Hospital Emergency Clinic. According to anamnesis, anorexia and abdominal contractions had begun 48 hours ago in this primiparous cat. In clinical examination, abdominal contractions, lethargy, hypothermia, and vaginal discharge with blood was observed. Because foetuses were dead according to trans-abdominal B-Mode ultrasonography and colour Doppler ultrasonography findings, the operation was performed by caesarean section (C-section). In C-section, 360° left horn uterine torsion along the longitudinal axis around itself was diagnosed. After the diagnosis, ovariectomy was decided because of the risk of unraveling the rotation. However, the mother cat died before the operation was completed. Uterine torsion, which is a rare and fatal abnormality, should be considered in dystocia cases and should be intervened as early as possible. Additionally, owners should be informed about the abnormalities in parturition process by clinicians.

Keywords: Angora cat, Dystocia, Pregnant, Uterine torsion.

INTRODUCTION

Dystocia is defined as difficulty for delivery arise in parturition time (1), which occurs due to fetal abnormalities (e.g. oversized foetuses, abnormal fetal presentation, position and posture, fetal death, maternal abnormalities (e.g. abnormality of birth canal, uterine inertia, prolonged parturition period, and poor physiological state) or both (2,3).

Uterine torsion is a cause of dystocia, and it is defined as various degrees of rotation of the uterus or a uterine horn around its long axis (4). It is a rare pathology for domestic animals except cattle (5). Uterine torsion is life threatening both for the pregnant cat and foetuses, and its aetiology is unclear. Loosened uterine ligaments, uterine

contractions, fetal movements, maternal physical activity during pregnancy were the possible predispositions for the torsion (6,7).

Although clinical signs of uterine torsion are not characteristic, abdominal pain, anorexia, lethargy, abdominal tension and vaginal discharge were defined by previous researchers (8). Due to clinical symptoms are not specific for uterine torsion, experimental laparotomy (celiotomy) is needed for definitive diagnosis (9).

Determination of foetal viability is important for choosing the most suitable intervention method for the treatment. Thus, both B-mode and Doppler ultrasonography can be performed for evaluation of

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the pregnancy status and viability (10). As the foetuses are alive, C-section can be performed (11). Otherwise, ovariohysterectomy (OHE) rather than reposition of the uterus, should be applied due to risk of release endotoxins and inflammatory mediators (12). Due to surgical approach is inevitable both status (death or alive foetuses), urgent fluid therapy and blood transfusion (if provided) should be the first step for the supportive treatment before surgery (7). The present case report describes diagnosis, surgical intervention and prognosis of uterine torsion in an Angora cat.

CASE PRESENTATION

An Angora cat with dystocia was brought to Atatürk University Animal Hospital Emergency Clinic. In anamnesis, abdominal contractions, which started 48 hours ago after jumping from height. In clinical examination, lethargy, hypothermia (36.0°C), abdominal pain and bloody vaginal discharge was observed. In addition, the presence of dehydration of up to 10% was understood by looking at the capillary filling time and skin turgor. Mucous membranes in oral cavity and conjunctiva were pale, and capillary refill time was prolonged. Informed consent form was obtained. The viability of palpable foetuses from abdominal wall were evaluated by B-mode ultrasonography and Doppler ultrasonography. Due to all foetuses were dead, urgent OHE was decided. Following to pre-anesthesia by medetomidine hydrochloride 0.12 mg (0.04 mg/kg, im, Domitor®, Zoetis, Turkey), 0.12 mg butorfanol (0.04 mg/kg, sc, Butomidor®, Richter Pharma®, Austria), propofol 6 mg (3 mg/kg, iv, Propofol-Lipuro®, Braun, Germany) was administrated for induction process. Inhalation anesthesia was provided by sevoflurane (1% Sevoflurane, Piramal Critical Care Inc., USA) with airflow consisted of 50 % O₂. Pre-operative fluid therapy consisted of 100 ml Ringer's lactate (5 ml/kg/hour, iv, Profileks, Turkey) and 30 ml dextran 70 (10 ml/kg/day, Profileks, Turkey).

A unilateral uterine torsion was diagnosed after midline laparotomy. The torsion with 360° along the longitudinal axis at the left uterine horn was observed. As the left uterine horn was cyanotic, the right horn was normal appearance (Figure 1). Since the uterus was tense, a small section was made into the non-torsion horn and the two dead puppies were removed. After reduction of the tense, OHE (removing both ovaries and uterus with resection in bloc technique) was completed. However, the cat died before the operation was completed.

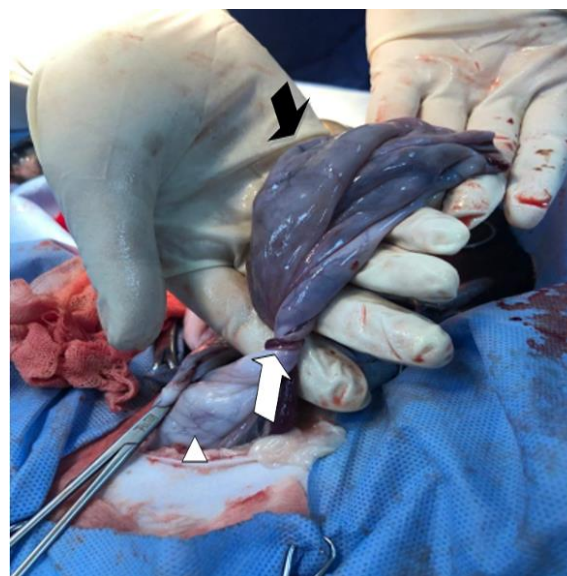


Figure 1. Imagine left of uterine torsion intraoperative. The left uterine horn (black arrow) is dark red in colour and view 360° rotation in the clockwise direction (white arrow) around its base (black arrowhead).

DISCUSSION and CONCLUSION

Uterine torsion, which usually occurs in the last trimester of pregnancy, is a rare predisposing cause of dystocia in cats. (4). In the current report, a unilateral uterine torsion case was defined. In compatible with the previous researchers, this case was seen in the late term of pregnancy (about 60 days) (6). Jumping is commonly defined as predisposing factor for uterine torsion as described in the current report (7). Additionally, clinical signs such as anorexia, lethargy, abdominal pain, vaginal discharge and hypothermia were observed in the presented case in compatible with previous studies

(8,13). In veterinary medicine, experimental laparotomy is a unique method to definitive diagnosis (9). Contrast enhanced computed tomography (CECT) method, which is another diagnosis method in human medicine is not used commonly in animal health (7).

The main clinical sign for dystocia is the onset of labor without delivery of fetus or fetal membranes the absence of parturition following to abdominal contraction related to parturition and later regression of parturition signs. In case of dystocia, vital findings such as hearth beat, foetal movements, presence of placental fluid should be evaluated by trans-abdominal B-Mode ultrasonography and colour Doppler method in cats (3,10,13). An emergence surgical operation should be planned, if the foetuses are not alive or in stress (14). Following to laparotomy, 360-degree rotation was observed as described by De La Puerta et al. (12). As described by De La Puerta et al. (12), uterus was completely removed without correction of rotated tissue to prevent endotoxic shock, which occurred due to endotoxins and other inflammatory products (9).

Blood tests are important because of the marker of anemia and if necessary, the life of the animals can be saved by blood transfusion. In a case report by Kuroda et al. (7), mother that is suffered anemia and kittens survived by blood transfusion. However, in the presented case report blood transfusion was not administrated in addition to fluid therapy. In addition, due to the urgency of the case, the blood test could not be performed. However, lack of blood transfusion alone could not be suggested as a reason of death in this case. Late intervention could be the major reason for this result (7). The side effect of anaesthesia such as respiratory depression, might be another possible reason for death during operation (15).

In conclusion, time interval between occurrence of clinical symptoms and application to clinic can be definitive for diagnosis of uterine torsion. Additionally, deciding experimental

laparotomy is needed expertise and experience for clinician. Thus, anamnesis and clinical findings presences before parturition, lethargy, apatheia and depression following to jumping from height at the late stage of gestation could be suspected from uterine torsion. Additionally, owners should be informed for possible problems at the last term of pregnancy and parturition by clinicians. As a result, although it is rarely seen in queen, the possibility of uterine torsion should be evaluated, especially when evaluating dystocia cases.

Conflict of Interest

The authors declare that they have no conflict of interest.

REFERENCES

1. Dar KH., Ansari MM., Qadri SA., Baba MA., Kumar M., 2015. Dystocia and its surgical management in Siamese queen. *The Blue Cross Book*, 31, 40-41.
2. Pretzer SD., 2008. Medical management of canine and feline dystocia. *Theriogenology* 70, 332-336.
3. Stedile R., Olivira ST., Muccillo MDS., Contesini EA., Beck CAD., 2011. Dystocia in cat due to an ectopic artery. *Veterinary Record.*, 169, 556.
4. Thilagar S., Yew YC.; Dhaliwal GK., Toh I., Tong LL., 2011. Uterine horn torsion in a pregnant cat. *Veterinary Record*, 157, 558-560.
5. Misumi K., Fujiki M., Miura N., Sakamoto H., 2000. Uterine horn torsion in two non-gravid bitches. *Journal of Small Animal Practice*, 41, 468-471.
6. Biller D., Haible G., 1987. Torsion of the uterus in a cat. *Journal of the American Veterinary Medical Association*, 191, 1128-1129.
7. Kuroda K., Osaki T., Harada K., Yamashita M., Murahata Y., Azuma K., Tsuka T., Ito N., Imagawa T., Okamoto Y., 2017. Uterine torsion in a full-term pregnant cat. *Journal of Feline Medicine and Surgery Open Reports*, 3, 1-4.
8. Stanley SW., Pacchiana PD., 2008. Uterine

- torsion and metabolic abnormalities in a cat with a piometra. *Canadian Veterinary Journal*, 49, 398-400.
9. Ridyard AE., Welsh EA., Gunn-Moore DA. 2000. Successful treatment of uterine torsion in a cat with severe metabolic and haemostatic complications. *Journal of Feline Medicine and Surgery*, 2, 115–119.
 10. Lee SH., Park EJ., Jo YK., Hahn SE., Lee BC., Jang G., 2019. Spalding's sign in a domestic cat with dystocia and its medical management. *Journal of Veterinary Clinics*, 36, 116-118.
 11. Silva SB., 2008. Emergências do trato reprodutor feminino. In: "Emergências e terapia intensiva veterinária em pequenos animais – bases para o atendimento hospitalar". Ed., MM Santos., FS Fragata., 1st edn., 330-342, Roca, São Paulo.
 12. De La Puerta B., McMahon L., Moores A., 2008. Uterine horn torsion in a non-gravid cat. *Journal of Feline Medicine and Surgery*, 10, 395–397.
 13. Dal-Bó ÍS., Corrêa TO., Ferreira MP., 2013. Uterine torsion in domestic feline—case report. *Ars Veterinaria Jaboticabal*, 29, 88-92.
 14. Aslan S., Güngör Ö., 2015. Köpek ve Kedilerde Doğum ve Jinekoloji. In: "Güç doğum", Ed., M Kaymaz., M Fındık., A Rışvanlı., A Köker., 2 nd edn., 178, Medipres, Malatya.
 15. Brodbelt DC., Flaherty D., Pettifer GR., 2015. Veterinary Anesthesia and Analgesia. In: "Anesthetic risk and informed consent", Ed., KA Grim., 5th edn., 11-22, Wiley Blackwell, New Jersey.