

# Uterine Torsion in a Pregnant Tabby Cat

## Gebe Bir Tekir Kedide Uterus Torsiyonu

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### ABSTRACT

Uterine torsion, which is rarely observed in queens and bitches, is known as one of the causes of dystocia. In the anamnesis, it is noted that the patient was brought due to a general condition disorder rather than abdominal contractions. Lethargy, hypothermia (37°C), stomach pain, and bloody vaginal discharge were noted during the clinical examination. Doppler ultrasonography were used to assess the viability of palpable foetuses from the abdominal wall. Upon the patient's owner request, it was decided to perform ovariohysterectomy (OHE). The diagnosis following midline laparotomy was a unilateral uterine torsion. There was evidence of a 270° longitudinal axis torsion at the left cornu uteri. The right cornu uteri appeared normal, but the left cornu uteri was cyanotic. To relieve the tension on the uterus, a small incision was made in the torsionized cornu uteri to remove the two dead kittens. The incision site was tamponaded with a sponge to prevent leakage of uterine contents into the abdomen. However, no incision was made in the other cornu uteri. At the end of the procedure, ovariohysterectomy was performed and the operation line was closed. In conclusion, this case report summarizes the clinical signs, approaches and intraoperative management of uterine torsion, a rare condition in pregnant queens.

**Keywords:** Dystocia, Ovariohysterectomy, Pregnant, Tabby Cat, Uterine Torsion.

### Öz

Kedi ve köpeklerde nadir görülen uterus torsiyonu, güç doğum nedenlerinden biri olarak bilinmektedir. Anamnezde hastanın abdominal kontraksiyonlardan ziyade genel durum bozukluğu nedeniyle getirildiği belirtilmiştir. Klinik muayene sırasında letarji, hipotermi (37°C), karın ağrısı ve kanlı vajinal akıntı kaydedildi. Karın duvarından palpe edilebilen fetüslerin canlılığını değerlendirmek için doppler ultrasonografi kullanıldı. Hasta sahibinin isteği üzerine ovariohisterektomi (OHE) yapılmasına karar verildi. Median hattan yapılan laparotomi ile torsio uteri teşhisi konuldu. Sol cornu uterinin uzun ekseninde 270°'lik torsiyon belirlendi. Sağ cornu uteri normal görünürken, sol cornu uteri siyanotikti. Uterus üzerindeki gerilimi hafifletmek için, ölen iki yavruyu çıkarmak üzere torsiyona uğramış kornu uteri'ye küçük bir kesi yapıldı. Uterus içeriğinin karın içine sızmasını önlemek için kesi yapılan bölge spançla tamponlandı. Ancak, diğer kornu uteriye herhangi bir ensizyon yapılmadı. İşlem sonunda ovaryohisterektomi yapılarak operasyon hattı kapatıldı. Sonuç olarak, bu vakada gebe kedilerde nadiren karşılaşılan bir durum olan uterus torsiyonu vakalarında, klinik belirtiler, yaklaşımlar ve operasyon sırasında ki tedavi özetlenmiştir.

**Anahtar Kelimeler:** Gebelik, Güç Doğum, Ovariohisterektomi, Tekir kedi, Torsiyo uteri.

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## INTRODUCTION

Dystocia is defined as difficulties in the parturition process caused by abnormalities in the mother cat or the kitty, or both.<sup>1-3</sup> One of the conditions causing dystocia is uterine torsion (UT). Uterine torsion, which is not common except in cows, occurs when the uterus or its cornu rotates around its axis to varying degrees.<sup>4,5</sup> Although the cause is uncertain, laxity of the uterine ligaments, movement of the fetuses and physical activity predispose to UT.<sup>6,7</sup> Since there is no specific symptom, the diagnosis is made by experimental laparotomy.<sup>3</sup> The viability of the kittens should be evaluated by Doppler USG before the operation.<sup>3</sup> If the kittens are alive, C-section can be attempted.<sup>7</sup> However, if the kittens die, ovariohysterectomy (OHE) should be considered due to the risk of possible release of endotoxin or inflammatory mediators.<sup>3,8</sup> Since UT is life-threatening for both the kittens and the mother, fluid therapy or, if possible, blood transfusion should be given throughout the operation.<sup>7,8</sup> In this case report, the diagnosis, surgical procedure and prognosis of UT in a tabby cat are discussed and the clinical approach is summarized.

## CASE PRESENTATION

In the anamnesis taken from the owner of the pregnant cat, we were told that the patient was brought to our clinic due to general condition disorder rather than abdominal contractions. Lethargy, coldness (37°C), stomach pain, and bloody vaginal discharge were noted during the clinical examination. Additionally, the skin turgor and capillary filling time were used to understand the existence of dehydration of up to 5-10%. The conjunctiva and oral cavity mucous membranes were paler, and the capillary refill time was longer. Doppler ultrasonography were used to assess the viability of palpable fetuses from the abdominal wall. Due to the absence of signs of viability in one horn, emergency cesarean section was recommended. Upon the patient's request, it was decided to perform ovariohysterectomy (OHE). Subsequent to the pre-anesthesia phase, an induction procedure was conducted using medetomidine hydrochloride 0.12 mg (0.04 mg/kg, im, Domitor®, Zoetis, Turkey), 0.12 mg butorphanol (0.04 mg/kg, sc, Butomidor®, Richter Pharma®, Austria), and 6 mg (3 mg/kg, iv, Propofol-Lipuro®, Braun, Germany). Once the righting reflex was absent, a 3-mm internal diameter cuffed tube (Sheridan/CF, Teleflex, NC, USA) was used to intubate the trachea. The anesthetic used for inhalation was % 5 isoflurane (Isoflurane; Piramal Critical Care Inc., PA, USA) with 50% oxygen (5L/min) circulating through the system. 30 ml of dextran 70 (10 ml/kg/day, iv, Profileks,

Turkey) and 100 ml of Ringer's lactate (5 ml/kg/hour, iv, S.A.L.F. S.p.A, Italy) were the fluids used in the pre-operative fluid therapy. The diagnosis following midline laparotomy was a unilateral uterine torsion. There was evidence of a 270° longitudinal axis torsion at the left cornu uteri. The right cornu uteri appeared normal, but the left cornu uteri was cyanotic (Figure 1).



**Figure 1.** Cyanotic left cornu uteri with 270° torsion and normal cornu uteri

Hemostatic forceps were applied to the apical and basal part of the torsion horns to avoid excessive tension and to shorten the uterine stump. The torsion horn was cut through a small incision to remove the two dead kittens and a second incision was made outside the surgical line. No further attempt was made to prevent leakage of the uterine contents into the abdomen; however, the other horn was not incised and the ovaries and uterus were removed en bloc technique. None of the kittens survived because they didn't complete their development. As a matter of fact, it was seen that the kittens removed from the cyanotic cornu had a cyanotic color (Figure 2). Although the mother queen woke up at the end of the operation, she was kept under observation for a day. The patient was discharged after making sure that the condition was stable.



**Figure 2.** Kittens removed from cyanotic cornu (two on the left) and normal cornu uterus (three on the right)

## DISCUSSION

Uterine torsion (UT), which is rarely seen in cats, is one of the causes of difficult delivery, which is usually encountered in the last trimester of pregnancy.<sup>9</sup> In the presented case, UT occurred approximately on the 45th day of pregnancy.<sup>4,6</sup> The fact that the anamnesis included information about the habit of constantly climbing and jumping to high places in the house indicates that the presented case overlaps with previous cases.<sup>7</sup> In addition, the clinical symptoms in the case were similar to those in the literature.<sup>6,10</sup> Since the contrast enhanced computed tomography device, which is widely used in human medicine, was not available in our clinic, the diagnosis was made by laparotomy.<sup>7,9,11</sup> The choice of operation was based on the lack of viability in some kittens on Doppler USG examination and the deteriorating general condition of the pregnant queen.<sup>3,9,12</sup> As described in previous cases, UT was diagnosed by laparotomy. Again, considering the warnings in previous cases, the tissue was tried to be removed before the torsion dissolved. Otherwise, endotoxic shock or excessive inflammatory response could have occurred.<sup>13,14</sup> Blood sampling could not be performed due to the urgency of the situation. However, it is known to be necessary to summarize the patient's condition before every operation.<sup>15</sup> Fluid therapy should be performed intraoperatively in such risky cases to maintain general condition stability. Even blood transfusion should be performed if possible.<sup>7</sup> In this case, fluid therapy was administered throughout the operation. In previous cases, it was said that late intervention or side effects of anesthesia could result in death.<sup>7,16</sup> Eventually, the patient's condition was stabilized and the operation was completed. However, since the UT occurred at the beginning of the last trimester and the kittens had not completed their development, none of the kittens survived.

Uterine torsion may be suspected in pregnant cats in the presence of the symptoms presented in the case. Although UT in queens is rare, it should be kept in mind that it is a case that can be encountered. In conclusion, this case summarizes the possible clinical signs, and approaches, for cases of UT in queens.

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