Clinical case: unilateral en bloc ovario-cornuectomy as a treatment for uterine torsion in a bitch

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SUMMARY

Uterine torsion is an uncommon, but life-threatening condition in the bitch and is routinely treated by ovariohysterectomy that means the end of breeding life. This report describes unilateral en bloc ovario-cornuectomy as a successful treatment for uterine torsion in a heavily pregnant bitch by preserving the fertility including long term follow-up. A torsion-induced unilateral uterine necrosis was observed at laparotomy. At surgery two dead fetuses were retrieved by unilateral en bloc ovario-cornuectomy. One week postoperatively, the bitch had fully recovered without problem. In the following breeding periods the bitch gave birth twice to two and three healthy puppies, respectively. Bitches with dystocia due to torsion of one uterine horn complicated with necrosis may survive if immediate unilateral en bloc ovario-cornuectomy is performed while breeding ability of the bitch is preserved.

Keywords: Unilateral ovario-cornuectomy, uterine torsion, dystocia, bitch.

CASE HISTORY

A five-year-old female German Shepherd Dog was presented in August 2003 with a 10-h history of continuous hemorrhagic vulvar discharge on the 55th day of pregnancy. The first whelping at the age of 3 years had been without complications and six puppies were reared. The owner reported that the bitch had been hyperactive during pregnancy and supposed that the presence of discharge was an indicator of labor. Five IU oxytocin (Oksitosin®; Vetas, Turkey) had been administered intramuscularly 10 hours prior to presentation without effect. On physical examination, the bitch’s general condition was within normal limits, but ultrasonography revealed dead fetuses. During exploratory celiotomy, the torsion was found to have 180 degree torsion of the right uterine horn along the long axis. The torsion was between the proper ligament of
the ovary and cranial aspect of the uterine bifurcation (Figure 1). The rotated horn was cyanotic and necrotic presumptively. The owner requested not to neuter the bitch due to the high line of her pedigree. Unilateral en bloc ovariocornuectomy was performed between the uterine bifurcation and ovarian suspensory ligament. The removed horn revealed two dead fetuses and haematometra (Figure 2). The incidence at the bifurcation was closed with a 2-layer inverting pattern using 2/0 polyglycolic acid suture in cranio-caudal direction. Celiotomy was closed in layers. Absorbable suture material (USP 0 or 2/0 Vicryl®, B. Braun Melsungen AG, Melsungen, Germany) was used. Postoperative broad spectrum antibiotics were continued for 5 days. Recovery was uneventful. In the following breeding periods the bitch gave birth twice to two and three healthy puppies, respectively.

Discussion

Severe torsion can cause obstruction of the blood supply to the uterus, with resulting thrombosis or rupture of uterine vessels, congestion, shock, fetal and/or maternal death [1]. Haemostatic abnormalities, such as disseminated intravascular coagulation where uncontrolled consumption of haemostatic elements, occur in situations of massive tissue necrosis due to alterations of blood flow and tissue destruction, results in haemorrhage [12]. Although the exact aetiology of the continuous hemorrhagic vulvar discharge and haematometra in the case reported herein is not known, disseminated intravascular coagulation following torsion might be responsible for their formation. Alternatively haematometra with the gravid uterus might have triggered uterine torsion.

In a pregnant individual, uterine torsion may develop following the delivery of a healthy or dead puppy [6]. Puppies may be born from the non-rotated, sound horn or from the caudal aspect of the rotation site of the uterine horn in a partial torsion. In the present case, no birth of a live or dead puppy had been observed by the owner. In addition, during ultrasound examination and celiotomy only two dead puppies were detected in the rotated horn, while the other horn was empty but showed evidence of involution. It is likely that other dead puppies might have been born in the first hours of labor and been eaten by their mother unobserved by the owner.

Total ovariohysterectomy is suggested as the treatment of choice in torsion-induced uterine necrosis terminating the animal’s reproductive ability [13, 14]. Unilateral ovariocornuectomy was performed in one case of fetal retention [15]. However, en bloc ovariocornuectomy has not been implemented in the treatment of uterine torsion. In the present case, regarding that the fetuses were dead and in order to reduce the risk of postoperative peritonitis and save operation time unilateral en block ovariocornuectomy was preferred.

It should be pointed out that women who have had a caesarean section are at greater risk for uterine rupture during subsequent labors, especially if their labor is induced [16]. It was particularly feared that uterine rupture or perforation at the cernectomy site at the bifurcation might occur during labor of future pregnancies / parturitions. Another concern was that the lack of an attachment to the operated side of the unicorn uterus might facilitate again uterine torsion during subsequent pregnancies. In our case, however, none of these complications were observed during two pregnancies. Further investigations on pregnancies and parturition of unicorn bitches after uterine torsion / necrosis might determine the incidence of such complications. In unilateral hysterectomy, both ovaries were left in the bitch in order to prevent probable luteal progesterone deficiency for subsequent pregnancies [17, 18]. In this case postoperative mating revealed pregnancy without complications and interference with subsequent gestation and parturition did not occur despite a single ovary.

It has been reported that unilateral cornuectomy causes a reduction in litter size [18, 19]. Follow-up in our case revealed two pregnancies with two and three puppies, respectively, that is lower than the usual mean litter size in large breed dogs (seven puppies/litter) [19, 20].

In conclusion, unilateral cornuectomy seems to provide a practical opportunity to maintain breeding ability of precious bitches with unilateral uterine torsion with necrosis. Thus, owner satisfaction may be achieved despite reduced future litter size. Additional studies involving larger numbers of dogs are required to further establish possible complications and potential risks.

FIGURE 1: Intact empty left horn (a), necrotic gravid right horn (b).

FIGURE 2: Incision of rotated horn revealed two dead fetuses and haematometra.
References


