

Case of Fetal Maceration in a Dog

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ABSTRACT

Fetal maceration is a process which is characterized by enzymatic autolysis of cells and degeneration of connective tissue. In this case, fetal maceration was described in a female dog. A 22 months old, 32 kg female Golden Retriever dog was brought to the Animal Hospital of Afyon Kocatepe University with the complaints of whitish and foul-smelling vaginal discharge, anorexia and weakness nearly two months. The body temperature, respiratory and pulse rates were at normal values. In the ultrasound examination, hyperechogenic areas were detected in the uterus. Before the ovariohysterectomy operation, an adhesion was determined between left uterine horn and the omentum. Furthermore, a huge solid and vascularized structure was detected in the left horn. After removal of the ovaries and the uterus, a foul-smelling mucous structure of brown-reddish fluid and fetal bone residues were found after incision and inspection to the uterus. Considering all findings, the patient was diagnosed with fetal maceration. In the postoperative period, the process was supported with systemic antibiotics and periodic wound care for the first seven days, recovery was achieved and no complications were encountered in the next six months. Since the case is rarely seen, veterinarians should not overlook this problem in bitches and they are recommended to use ultrasound in examinations.

Keywords: Dog, Fetus, Maceration, Ovariohysterectomy, Ultrasonography.

Bir Köpekte Fetal Maserasyon Olgusu

ÖZ

Fetal maserasyon hücrelerin enzimatik otolizi ve bağ dokusunun dejenerasyonu ile karakterize edilen bir süreçtir. Sunulan olguda dişi bir köpekte fetal maserasyon aktarıldı. 22 aylık ve 32 kg olan Golden Retriever ırkı bir köpek yaklaşık 2 aydır vulvadan gelen akıntı, iştahsızlık ve halsizlik şikâyetiyle Afyon Kocatepe Üniversitesi Hayvan Hastanesi'ne getirildi. Köpeğin vücut ısısının, solunum ve nabız sayılarının normal değerlerde olduğu ancak vajinal akıntının kötü kokulu ve beyazımtırak renkte olduğu görüldü. Ultrason muayenesinde uterusu hiperekojenik alanların olduğu gözlemlendi. Hastaya yapılan ovariohisterektomi operasyonu öncesinde uterusun sol kornusunda sert büyük bir kitlesel yapının yoğun damarlaşma ile birlikte şekillendiği, ayrıca bu kornunun omentuma adezyon oluşturduğu tespit edildi. Ovaryumlar ve uterus uzaklaştırıldıktan sonra uterusu yapılan enzisyon ve inspeksiyonda kötü kokulu muköz yapıda kahverengi-kırmızımsı renkte sıvı ile fetal kemik kalıntıları bulundu. Tüm bulgular değerlendirildiğinde hastaya fetal maserasyon teşhisi konuldu. Dişi köpeklerde nadir görülen bir vaka olduğu için veteriner hekimlerin muayenelerde ultrason kullanmaları ve bu problemi göz önünde bulundurmalarının önemi üzerinde duruldu. Postoperatif dönemde, ilk yedi gün sistemik antibiyotikler ve periyodik yara bakımı ile süreç desteklendi ve sorunsuz bir şekilde iyileşme sağlandı ve sonraki ilk altı aylık dönemde herhangi bir komplikasyona rastlanmadı.

Anahtar Kelimeler: Köpek, Fetus, Maserasyon, Ovariohisterektomi, Ultrasonografi.

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INTRODUCTION

Prenatal development consists of three stages in dogs. When the ovulation is accepted to take place on the day of 0; the first period (2-17 days) is pre-implantation stage, the second period (19-35 days) is the embryonic stage and the third period (35th day to birth) is the fetal stage. The embryo or fetus may lose its life function due to many reasons that can be hardly detected in every period of pregnancy (Alaçam 2010). In the prenatal development period, the damage of the embryo or fetus is resulted with the embryonic or fetal losses (Bozkurt et al. 2018). The resorption of embryo occurs after embryonic death process, but emphysema, mummification or maceration of the fetus is seen in subsequent fetal period (Alaçam 2010). In some circumstances where abortion cannot occur due to uterine inertia or intrauterine infections, soft tissues of the fetus are autolysed and separated from bone tissues as a result of bacterial contamination of the dilated cervix (Serin and Parin 2009, Bhattacharyya et al. 2015). The incidence of fetal maceration is high in cattle and very low in dogs (Bozkurt et al. 2018). The studies on fetal maceration are limited and some case reports have been provided (Erdoğan et al. 2019).

CASE HISTORY

A 22 months old, 32 kg female, Golden Retriever breed dog was brought to Afyon Kocatepe University Animal Hospital with complaints of vaginal discharge which had been seen for almost two months, non-severe anorexia and weakness. In the preoperative clinical examination; it was determined that the body temperature was 38.7 °C, the respiratory rate was 22/min, the pulse rate was 74/min, the mobility level and the appearance of its mucous membranes were normal. Preoperative blood parameters were seen as among the reference values. It was seen that the vaginal discharge was foul-smelling and whitish in color. The imaging of hyperechogenic areas consistent with fetal bones in the uterus were detected as mixed and intertwined in the transabdominal ultrasound examination. No fluid was seen in the uterus. The existence of a fetus was not understood from this image. These areas were considered as unusual structures that should not be in the uterus (Figure 1).

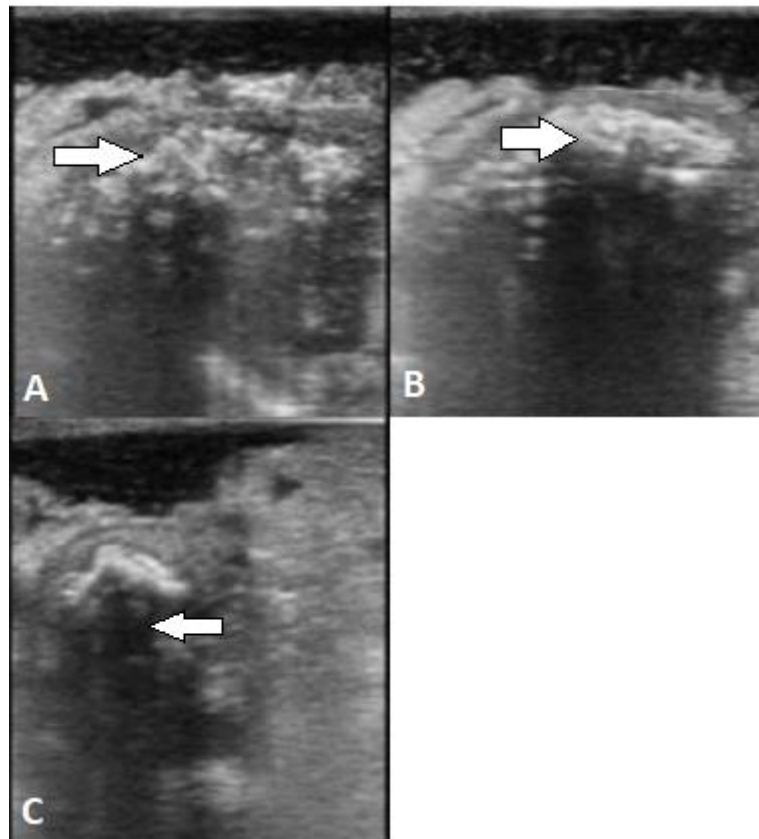


Figure 1: Hyperechogenic area in the uterus (A), Hyperechogenic area in the uterus (B), Mucous fluid in the uterus (C).

After observations and examinations, it was decided to perform ovariectomy. After premedication with butorfanol (Butamidol®; İnterhas, Türkiye) [0,1mg/kg; Intramuscular (IM)] and medetomidine (Domitor®;Vetequinol, UK), anesthesia was started with propofol (Propofol®; Fresenius Kabi, Türkiye) (2.5 mg/kg; Intravenous (IV)). Inhalation anesthesia was continued with the support of isoflurane (Forane Likit®; Abbott, US) (1-1.5%) and oxygen (1 l/min). The venous catheterization was performed before the surgery and the risk of hypovolemia was brought under control with the support of 0.9% NaCl (Polifarma®; Türkiye) solution during the surgery. The patient was fixed to the surgery table on dorsal recumbency and prepared for aseptic surgery. The umbilical scar was detected and the incision region was adjusted as the line corresponding to two-thirds

middle of the line. The uterus was reached after the incision. It was observed that there was intense vascularization throughout the uterus, solid structure formation in the left uterine horn and a part of the omentum was attached. Uterine tissue and ovaries were removed by under control of bleeding under control and ligaturing with 1 and 0 polyglycolic acid (PGA) (Pi Surgical sutures®; Pi sutures, England). The inspection of the uterus, brown-reddish, foul-smelling, content of mucous fluid and fetal bone were observed (Figure 2). The pathological and anatomical features of the hard structure formed in the uterine horn have brought the idea of the diagnosis maceration of the fetus. Based on macroscopic findings, it was suggested that there were three or more macerated fetuses in the uterus (Figure 3).

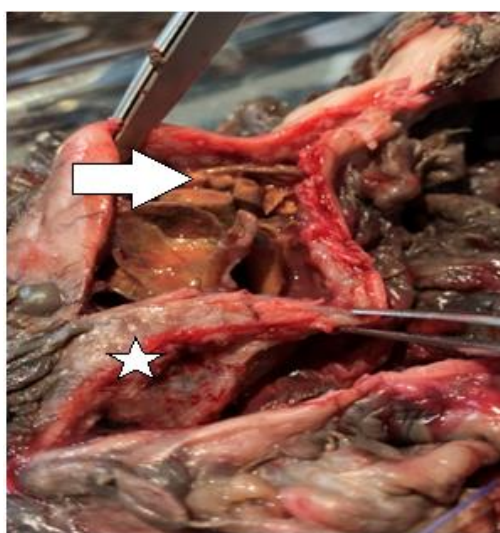


Figure 2: The appearance of uterine contents.
Fetal bones in uterine left horn (arrow).
Left Uterine horn (star).



Figure 3: The appearance of fetal bones.

Peritoneum, muscles and the skin closure were completed by 1 and 0 PGA using simple interrupted stitches. Postoperative care was maintained and defecation and urination were observed approximately 15 hours after the surgery. Body temperature was measured as 38.9° C, respiratory rate 20/min, pulse rate 69/min. For postoperative treatment, the patient underwent IM ceftriaxone sodium (Novosef 0.5g®; Sanofi, Türkiye) (5mg/kg) injection for 7 days, and operation site wound care were performed. No complication was observed in the patient throughout six months.

DISCUSSION AND CONCLUSION

The use of ultrasonography in dogs is very important for the diagnosing early pregnancy, the determination of the viability of the fetus, the interpretation of the physiology or pathology of the genital organs, the prediction of the number, age and sex of fetus, the time of delivery and the imaging of postpartum uterus (Şendağ et al. 2003, Yılmaz et al. 2006, Erdoğan et al. 2019).

While it has been stated in two different case reports that the swelling and tension in the mammary glands in the abdominal region were remarkable (Begum et al. 2019, Erdoğan et al. 2019), no swelling and tension in the mammary glands was evident in the presented case. Although no foul-smelling vaginal discharge has been reported due to the closed cervix in other cases (Begum et al. 2019, Erdoğan et al. 2019), mucous-smelling whitish secretion was observed in the presented case. This suggests that the cervix was open in the presented case.

The character of vaginal discharge which was seen in this case was mucous, malodorous, whitish color. However, it was reported that the hemorrhagic, malodorous or dark brown vaginal discharge might be evident in some cases (England 1998, Johnston et al. 2001, Bodh et al. 2014). Bodh et al. (2014) reported the adhesions that formed with uterine rupture and they suggested that it may be seen depending on the use of oxytocin, although adhesive areas in the uterus and omentum were detected without uterine rupture in our case as reported by Sagar et al. (2017). While the body temperature was within the reference values in the presented case, the pyrexia was observed in the cases Begum et al. (2019) and Erdoğan et al. (2019). In the presented case, the fact that its body temperature did not increase was associated with the blood parameters were in the range of normal reference values and its general condition was not yet impaired. Fetal maceration may occur due to prolonged pregnancies caused by progestin injections (Gonzalez Dominguez and Maldonado-Estrada. 2006). However, in the presented case progesterone administration was not in question. Similarly, Bodh et al. (2014) reported that

fetal maceration was encountered without the use of progestins.

In conclusion, veterinarians should perform regular gynaecological examinations on pregnant dogs even if they do not show any clinical signs rather than vaginal discharge. It was suggested that by using ultrasonography, early diagnosis and accurate treatment can be performed in related cases.

Conflict of Interest

The authors declared that there is no conflict of interest.

Ethical Statement

This study is not subject to the permission of HADYEK in accordance with Article 8 (k) of the "Regulation on Working Procedures and Principles of Animal Experiments Ethics Committees".

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