

Recurrent vaginal discharge causing by retained foetal bones in a bitch: a case report

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ABSTRACT: An 18-month-year old mixed breed bitch was referred to the Animal Hospital of Adnan Menderes University suffering from recurrent serous vaginal discharge for two months. Her temperature, pulsation, appetite and also hematologic parameters were normal. Transabdominal ultrasound scan revealed fullness in bifurcation uteri and bright echoes suggestive of bone caudally. During hysterotomy, retained foetal bones were observed in corpus uteri but not removed as they had become embedded in the uterine wall. Therapy of this case was completed with ovariectomy operation. No aerobic bacteria were isolated from both samples taken from the vaginal discharge and retained foetal bones in the uterine cavity. Although rare, veterinary clinicians should be aware of this problem also in young bitches with no general symptoms and are well advised to use genital ultrasonography in examinations.

Keywords: foetal death; bitch; ultrasonography

Pregnancy loss may occur at any stage of gestation in domestic animals. If a foetal death occurs during the second half of pregnancy, the result is an abortion or the birth of a stillborn. If there is a failure of an aborting foetus to be expelled, due perhaps to uterine inertia and intrauterine infections, foetal emphysema and maceration occurs (Johnston et al., 2001). Although maceration of the foetus can occur in any species, it is described most frequently in cattle. Bacteria enter the uterus through the dilated cervix, and by a combination of putrefaction and autolysis the soft tissues are digested, leaving a mass of foetal bones within the uterus (Jones et al., 1997). Sometimes these become embedded in the uterine wall and are difficult to remove other than by hysterotomy. Under these circumstances a chronic endometritis ensues and there is severe damage to the endometrium (Noakes et al., 2001). The condition of retained foetal bones *in utero* is recognized in canine practice, but rare. Bitches that retain macerated foetuses frequently are usually systemically ill (England, 1998). The presented study describes an unusual case of retained foetal bones in a bitch.

Case report

An 18-month-old, nulliparous, mixed breed bitch was presented to the Animal Hospital of Adnan Menderes University with a two-month history of pale-pink colour serous vaginal discharge. Two months previously, antibacterial treatment 24 mg/kg Trimetoprim 40 mg – sulphametoksazol 400 mg (Co-Trimoxazole, Egevet[®]) had been applied for only three days causing a hemorrhagic vaginal discharge lasting three weeks.

In physical examination, her temperature and pulsation values, and also hematologic parameters (WBC: 11.94×10^9 ; RBC: 7.03×10^{12} ; HGB: 13.3 g/dl; RBC: 7.03×10^{12} ; PLT: 605×10^9) were normal. There was no loss of appetite or weight. Only pale-pink-colour non-malodorous serous vaginal discharge was observed. Her last oestrus time was unknown. For cyclic determination, vaginal cytology was performed according to the Papanicolaou staining procedure (Papanicolaou, 1942). Parabasal, small intermediate cells and a few neutrophils were observed most frequently and confirmed that the bitch was in anoestrus.



Figure 1. Ultrasonographic image of the uterus, the hypoechoic area (white arrows) in bifurcation uteri and (black arrows) bright echoes

In a transabdominal ultrasonography of the genital tract, the hypoechoic area in bifurcation uteri (Figure 1) and bright echoes suggestive of bone caudally (Figure 2) were observed. Although there was no information in the history, an uncompleted abortion without owner's knowledge was suspected.

After the clinical and ultrasonographic examinations, it was decided to perform ventral midline laparotomy as treatment. Dissociative anaesthesia was applied with 1.1 mg/kg xylazine hydrochloride (Alfazine-Alfasan) and 10 mg/kg ketamine hydrochloride (Alfamine-Alfasan) intramuscularly after premedication with 0.04 mg/kg atropine sulphate (Atropan-Vetas) subcutaneously. The patient was

placed in dorsal recumbency, and the ventral abdomen was aseptically prepared in standard fashion. During ventral midline laparotomy, a firm swelling in the corpus uteri was detected. After incision on the uterine wall, it was observed that the retained foetal bones (cranial and pelvic bones) were adhering to muscles of the uterine wall (Figure 3). Bilateral ovariohysterectomy was performed to remove what remained of the foetal bones. Postoperatively, antibacterial therapy was applied with 400 000 IU penicillin (Iecilline®; IE Ulagay) daily for five days. There was no complication during the four weeks after surgery.

For bacterial investigation in this case, samples from the vaginal discharge and foetal bones re-



Figure 2. Ultrasonographic image of the uterus, bright echoes suggestive of bone in the area of corpus uteri



Figure 3. Macroscopic appearance of the uterus after ovariectomy and retained foetal bones in corpus uteri

tained in the uterine cavity were taken. The samples were plated out on blood agar, Nutrient Agar, MacConkey Agar, Eosin Methylene Blue Agar; Salmonella Shigella Agar's plates (Oxoid) with 5–7% defibrinate ovine blood and incubated at 37°C for 24–48 h (Holt et al., 1994; Koneman et al., 1997). No aerobic bacteria were isolated from either sample.

DISCUSSION

In canine pregnancy, expulsion is the commonest sequel to foetal death. Although foetal retention in utero has been described in the bitch, the actual incidence is unknown, but presumed to be low (Feldman and Nelson, 1996; England, 1998; Johnston et al., 2001). Retention of foetal bones *in utero* or in the vagina has been reported in cows (Drost, 2007), mares (Burns and Card, 2000), cats (Nicastro and Walshaw, 2007), and women (Graham et al., 2000; Samraj et al., 2008). Foetal maceration resulting from prolonged pregnancy caused by pro-

gestin injections was reported in a bitch (Gonzalez-Dominguez and Maldonado-Estrada, 2006). In this case, a young bitch was presented with a retained foetal bone condition, but with no systemic symptoms apart from serous vaginal discharge for two months.

In foetal maceration and retention cases, bitches exhibit a foul and fetid uterine discharge and may become systemically ill, showing signs of toxemia or septicemia (England, 1998; Johnston et al., 2001; Drost, 2007). In this case, no septicemia was observed during clinical and laboratory examinations. Haematological parameters were normal and a few neutrophils were detected in the vaginal smear samples. The bitch's vaginal discharge was serous, not inflammatory. It has been reported that foetal maceration occurs when the cervix is open and miscellaneous bacteria invade the uterus from the vagina (Drost, 2007). Reports list non-specific bacteria, including *Escherichia coli*, streptococci, *Proteus* and *Pseudomonas* as being identified in many cases (England, 1998). But in this case, no aerobic bacteria were isolated from samples. Because of the history, clinical, and laboratory findings, it is not considered that infectious agents were involved in this abortion. But interestingly, in contrast to a dilated cervical canal, no inflammation occurred during two months without antibacterial application.

Diagnosis of this case was made using abdominal ultrasonography. Transabdominal scan findings are associated with literature data (Kahn, 1994; Graham et al., 2000). During the ultrasonographic examination, hyperechoes related to foetal cranial and pelvic bones were detected from corpus uteri cavity and hypoechoic area in bifurcation related to fullness.

Therapy of maceration cases involves ovariectomy or hysterotomy and removal of foetuses. Reports indicate that prostaglandin therapy may be successful only if foetal skeletal material is not present in the uterus (Feldman and Nelson, 1996). After the detection of embedded foetal bones *in utero*, it was decided to perform the ovariectomy operation. Therapy of this case was successfully completed with ovariectomy operation.

In conclusion, veterinary clinicians should be aware that this rare problem can also occur in young and healthy bitches and are advised to examine the genital tract with transabdominal ultrasonography carefully.

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