A Rare Case of Uterine Body Intussusception in A Bitch

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ABSTRACT

The aim of this report was to describe a clinical case of uterine body intussusception in a German Shepherd bitch, which was presented 27 days after whelping of 13 live puppies with a history of 2 days low appetite, period tremors, and vulvar discharge. Vaginal smear revealed presence of trophoblast cells and transabdominal ultrasonographic examination showed a multilayered hypoechoic structure in front of the urinary bladder. Laparotomy was performed and invagination of uterine body into its distal segment and cervix was observed. Full manual repositioning of the intussusception was not possible, and ovariohysterectomy was performed.

Keywords: Bitch, intussusception, uterine body.

I. Introduction

During the postpartum period in the bitch, several uterine complications can occur, most often retained placenta, subinvolution of placental sites (SIPS), metritis, uterine prolapse and rupture [1]. A rarely described canine uterine disorder is intussusception of the uterine horns [2]. In the literature until now only few cases of the condition were reported [2]-[7]. According to our knowledge, the present report describes a very rare case of uterine body intussusception in a bitch, which resulted in delaying involution of the uterus.

II. Case Description

A 4-year-old, nulliparous German Shepherd bitch, weighing 28 kg, was presented to the Small Animal Clinic of the Faculty of Veterinary Medicine, Trakia University in Stara Zagora. The bitch had a history of normal delivery of 13 live puppies 27 days ago and signs of 2 days low appetite, periodic tremors and odorless vulvar discharge. The owner informed that the animal is still nursing her puppies. On physical examination, there were no changes in the general condition of the animal: rectal body temperature 37.9 °C, heart rate 59 min⁻¹, respiratory rate 27 min⁻¹. The colour of visible mucosae was rose-red. The inspection of the vulva showed presence of haemorrhagic discharge.

Vaginal smear was prepared using a cotton swab and a glass microscope slide, which was fixed with methanol and then stained with the two solutions of Haemacolor® stain (Merck KGaA). The evaluation of the vaginal smear was performed with a light microscope at magnifications of 100 to 400×. Ten observation fields were examined and a presence of parabasal vaginal cells, red blood cells and polynucleated heavily vacuolated trophoblast cells was detected (Fig. 1).

Abdominal palpation showed presence of slight pain and transabdominal ultrasonography (Mindray DC-6 Vet, China, 6.5 MHz convex transducer) revealed a presence of multilayered hypoechoic structure in front of the urinary bladder, suspicious for presence of uterine intussusception (Fig. 2).

Fig. 1. Trophoblast polynucleated cell in the vaginal smear from the bitch (blue arrow) (Haemacolor®, ×400).

Fig. 2. Ultrasonographic image of uterine body intussusception (red arrow) in front of the urinary bladder (blue arrow).

To assay the complete blood cell counts and biochemical parameters, blood samples (~2 mL) were collected by venipuncture of the cephalic vein. Complete blood cell counts
were assayed on an automated haematological analyser BC-2800 Vet (Mindray, China), and blood biochemical parameters – on an automated biochemical analyser BS 120 (Mindray, China). Blood laboratory analysis showed no changes in all the parameters. The bitch was also serologically tested for canine herpesvirus and Brucella canis and the results were negative.

A decision for laparotomy was made. After aseptic preparation of the abdominal region, the bitch was premedicated subcutaneously with 0.04 mg/kg atropine sulfate (Atropinum sulfuricum; Sopharma; Bulgaria). Fifteen minutes later anaesthesia was induced by intravenous injection of 5 mg/kg propofol (Profl; Claris LifeSciences UK Limited; United Kingdom). After endotracheal intubation, the anaesthesia was maintained with isoflurane (TerrellTM; Minrad Inc.; USA). The bitch was placed in a dorsal recumbency and a caudal median laparotomy was performed. Intussusception of the uterine body was observed within its distal segment without signs of tissue congestion. Adherence of the invaginated uterine wall to the hyperplastic cervix and high distention of uterine broad ligaments were found (Fig. 3). Full manual repositioning of the intussusception was not possible, so ovariohysterectomy was performed.

The abdominal cavity was closed with cross stitch pattern using USP 1 polyglycolic acid absorbable sutures (Marlin; Catgut GmbH; Markneukirchen) and the skin was sutured with simple interrupted non-absorbable sutures USP 1 (Vitalon; Dr Hammer & Co. GmbH; Hamburg). Postoperative treatment included oral administration of antibiotic – 25 mg/kg amoxicillin-clavulanic acid (Synulox RTU; Zoetis; USA), for 5 days. Skin sutures were removed after 10 days. Follow-up examination showed that the patient was in a good condition.

III. DISCUSSION

Uterine intussusception is a rare condition with unknown incidence in small animals, which has been described in bitch in less than 10 cases in the scientific literature until now [2]-[7]. The animals affected in previously described cases were of different breeds during postpartum period. Normally, puerperium is characterized by uterine involution and completed when the uterus returns to its original non-pregnant size. Physiological changes of the uterus during the postpartum period or more often some pathological conditions, including dystocia, retention of fetal membranes and improper obstetric care could serve as an etiologic factor for uterine intussusception to occur [2], [8], [9]. In the described case the parturition process was normal. According to us, the large litter number resulted in high distention of uterine broad ligaments, found during the laparotomy, which lead uterine body intussusception to occur.

According to [10], the involution process of canine uterus is very slow. When it is delayed, bitches have haemorrhagic uterine discharge, passing from the vulva for several weeks after whelping and the condition is known as subinvolution of placental sites (SIPS) [1]. In the described case, the patient was approximately a month after the parturition and still there was presence of haemorrhagic discharge.

Normally foetal trophoblasts in bitches may be found in the upper loose connective tissue of the lamina propria for the first 2 weeks after whelping [11]. In bitches with SIPS, these trophoblastic cells do not degenerate and continue to invade the endometrium or even the myometrium, which causes vascular damage to blood vessels and failure of normal endometrial blood vessel thrombus formation [12]. These trophoblast cells could be observed in the vaginal smears from bitches with SIPS [13], as it was in our patient, which may be a result of uterine body intussusception.

In previously described cases, the symptoms included weakness, tremors, dyspnea, abdominal discomfort, and vulvar discharge [2]-[7]. In the reported case, most of them were observed from the owner and during the clinical examination. In order to find the reason for prolonged presence of trophoblast cells into the vaginal smear, indicative for SIPS, and because of patient abdominal pain, we have additionally made transabdominal ultrasonography. The presence of multilayered hypoechoic appearance of uterine wall in front of the urinary bladder was detected, which was confirmed during the operation. According to us, ultrasonography could be successfully used as a diagnostic method in cases of abdominal pain and prolonged vaginal discharge in postpartum bitches, which might be caused by uterine intussusception, even it is a very rare condition.

Previously reported canine uterine intussusception cases were found in early puerperal period during laparotomy with a possibility of manual reposition and were treated by ovariohysterectomy. The difference of the present case was the prolonged time of occurrence of visible clinical signs. This might be a result of invagination of only a small part of uterine body into its cavity. The adherence to the outer cervical surface did not allow full reposition, so ovariohysterectomy was also performed. In our opinion, if bitches with uterine intussusception were treated before occurrence of tissue adhesion, there is a possibility of keeping their future reproductive ability using uteropexy to the lateral abdominal wall.

CONFlict of interest

Authors declare that they do not have any conflict of interest.

Fig. 3. Intraoperative appearance of the uterine body intussusception.
REFERENCES