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Conquering uterine inertia and uterine rupture in a pregnant Rottweiler canine: Successful caesarean section approach

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Abstract

This case study describes the successful management of a one-year-seven-month-old Rottweiler she-dog experiencing dead foetus form adhesion with mesentery after uterine rupture during her first parity. The she-dog was presented with a history of 60 days of pregnancy and exhibited a slight greenish-black vaginal discharge for the last two days. Diagnostic examinations, including abdominal radiography and ultrasonography, revealed the presence of four dead foetuses within the uterus. The she-dog's vital signs, including temperature and pulsation, were abnormal, and hematologic parameters were not within normal range. Initially, medical treatment involving the administration of Calcium Sandoz 10%, Oxytocin 5 IU, and Dextrose 25% was employed to induce parturition, but no response was observed after 24 hours. Consequently, a caesarean section was performed, revealing multiple sites of uterine rupture and bleeding, along with necrosis of the mesentery. Adhesions between three foetuses and the mesentery were noted, while one foetus remained in the uterus. The she-dog underwent an ovariohysterectomy and removal of the necrotic mesentery. Postoperative care was provided for five days, and the she-dog recovered without complications.

Keywords: Caesarean section, ovariohysterectomy, mesenteric necrosis, uterine rupture

Introduction

Uterine rupture is a relatively rare and life-threatening complication that can occur during parturition in she-dogs (Park *et al.*, 2014) ^[1]. It is most commonly associated with dystocia, which can compromise the integrity of the uterine wall (Hajurka *et al.*, 2005; Hayes, 2004; Humm *et al.*, 2010) ^[2, 3, 4]. Other contributing factors to uterine rupture include infections, the presence of a dead foetus, uterine torsion, and improper obstetrical techniques (Jackson, 2004; Noakes *et al.*, 2001) ^[5, 6]. In addition to dystocia, uterine ruptures in she-doges have also been reported as complications following conditions such as pyometra, obstruction, and trauma (Bomzon, 1977) ^[7]. Humm *et al.* (2010) ^[4] documented a case of a Great Dane that developed a perforated uterus and septic peritonitis after receiving high doses of oxytocin and manual assistance during parturition. Uterine rupture can lead to fetal maceration, especially when the atonic uterus fails to expel the aborted foetus (Johnston *et al.*, 2001) ^[8]. In cases where the uterine rupture allows the foetuses to enter the abdominal cavity, they may die and become resorbed or remain retained. Overall, uterine rupture in she-dogs is a serious condition that requires immediate veterinary intervention to ensure the health and survival of both the she-dog and her offspring.

Clinical manifestations of uterine rupture in she-dogs include several notable signs such as abdominal distention, discomfort, vaginal haemorrhagic discharge, dehydration, hypothermia, shock, decreased uterine activity, and a sudden decrease in fetal heart rate (Hayes, 2004; Hajurka *et al.*, 2005; Payan-Carreira *et al.*, 2012; Voorwald *et al.*, 2012) ^[3, 2, 9, 10]. Timely identification and prompt management of obstetrical-related complications play a crucial role in achieving a favourable outcome for the she-dog (Bodh *et al.*, 2014) ^[11]. To diagnose uterine rupture, various diagnostic approaches can be employed, including obtaining the patient's medical history, assessing clinical signs, performing laboratory tests, conducting abdominal radiography and ultrasound examinations, and carrying out exploratory laparotomy (González-Domínguez *et al.*, 2010; Voorwald *et al.*, 2012) ^[12, 10].

These diagnostic modalities aid in confirming the presence of uterine rupture and guide subsequent treatment decisions.

Case history and observation

A one-year-seven-month-old Rottweiler she-dog in her first parity was referred to the Veterinary Gynaecology and Obstetrics section of Veterinary Clinical Complex, P.G.I.V.E.R. Jaipur. The she-dog had a history of 60 days of pregnancy and had been exhibiting a slight greenish-black vaginal discharge for the past two days. During the physical examination, the rectal body temperature was recorded as 104°F, the heart rate was 86 beats per minute, and the respiratory rate was 22 breaths per minute. The she-dog had been experiencing anorexia for the past two days, and her mucous membranes appeared whitish and her capillary refill time was more than one second. On performing a per-vaginal examination, it was observed that the cervix was fully dilated, but the foetus was not reachable through manual palpation. Additionally, an external examination of the genitals revealed a slight greenish-black vaginal discharge with a distinct odour. Reduced haemoglobin, increased packed cell volume, and a significantly higher total leukocyte and neutrophil count were all observed by complete blood count. Grossly swollen and painful to the touch, the abdomen. There are two foetal skeletons in the pelvic cavity and a third in the abdominal cavity in the X-ray imaging. Because of the abdominal cavity's gas content and the presence of uterine horns, pneumoperitoneum consistent with uterine wall rupture was indicated.

Treatment and Discussion

The she-dog underwent treatment to induce whelping and stabilize her general body condition. The following drugs were administered intravenously: Inj. Amoxicillin-sulbactam 600 mg, Inj. Analgin 1.5 gm, Inj. Pantoprazole 40 mg, and Inj. Erythropoietin 4000 IU subcutaneously. Once the she-dog's body temperature stabilized within the normal range, additional treatment was provided. This included Inj. Dextrose 25% 100 ml and Calcium Sandoz 10% (Novartis; 10 ml) 8 ml administered slowly intravenously. After 15 minutes, Inj. Oxytocin 3 IU was given slowly intravenously and a 30-minute observation period followed. However, the she-dog did not respond to the treatment. Subsequently, Inj. Oxytocin 4 IU was administered slowly intravenously, and the she-dog was monitored for 24 hours to assess the response to treatment.

As the she-dog did not show any response to the medical intervention, a caesarean section was performed. Anaesthesia was induced using intravenous fentanyl (5 µg/kg) and intravenous midazolam (0.4 mg/kg). The dog was then maintained on inhalant isoflurane in oxygen and a constant-rate infusion (CRI) of fentanyl (0.15 µg/kg per minute).

During the caesarean section, a ventral midline laparotomy revealed multiple sites of rupture and bleeding in the uterus, along with necrosis of the mesentery. Three foetuses were found to have adhesions with the mesentery (Fig 1), while one foetus remained within the uterus (Fig 2). Based on these findings, an ovariohysterectomy was performed, and the necrotic portion of the mesentery was removed (Fig 3). The abdominal cavity was lavaged with normal saline and metronidazole. Finally, the muscle layers, subcutaneous tissue, and skin were sutured in the usual manner.



Fig 1: Gravid uterus having two fetuses



Fig 2: Gravid uterus after one fetus removal

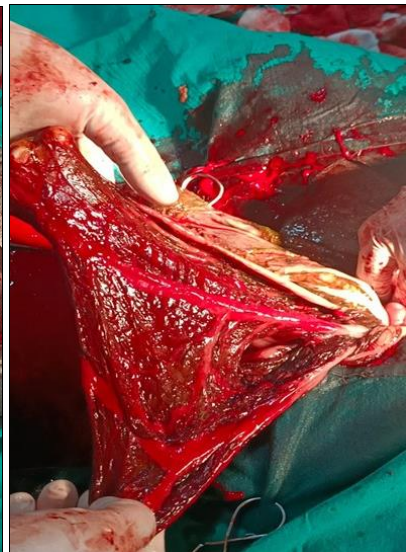


Fig 3: Necrosed mesentery

Post-operative treatment for the she-dog included a 5-day course of antibiotics, with Amoxicillin-sulbactam 600 mg administered twice a day, and Metronidazole at a dose of 10 mg/kg given twice a day intravenously. Additionally, a 5-day regimen of a non-steroidal anti-inflammatory drug was prescribed, but the specific drug name is not provided in the given information. To prevent self-trauma and promote healing, an Elizabethan collar was placed on the she-dog to serve as a protective measure. After ten days, the skin sutures were removed following a routine evaluation. Continuous clinical monitoring was conducted until the she-dog demonstrated signs of restored health and overall well-being.

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