

Uterine perforation secondary to metritis and placenta percreta in a Labradoodle bitch

Lacey Rosenberg,^a Jacqueline Marinoff,^b Esther Crouch,^b Dominick Valenzano,^a

Jeanine Peters-Kennedy,^b Soon Cheong,^a Mariana Amorim^a

^aDepartment of Clinical Sciences and ^bDepartment of Biomedical sciences
Cornell University, Ithaca, NY

Placenta accreta is a spectrum of conditions characterized by abnormal trophoblast invasion into the myometrium. Depending on the level of trophoblast invasion, it is subcategorized into 3 types: accreta, increta, and percreta (the latter being the highest degree of trophoblast invasion, with cells penetrating through myometrium into serosa). This is a rare condition in humans and has apparently not been reported in dogs. A 3 year old female intact primiparous Labradoodle presented as an emergency due to fever, lethargy, and increased serosanguinous vaginal discharge 4 days postpartum. History included a natural whelping of 7 puppies without veterinary intervention, but closely monitored by the breeder, who reported a long, protracted labor in which at least 1 neonate had to be extracted manually. The breeder was unsure if any or all fetal membranes were delivered. On initial evaluation, the patient was dull but responsive, dehydrated, and in poor body condition (BCS of 2/9). There was foul-smelling brownish vaginal discharge and pain on abdominal palpation. Mammary glands were subjectively milk-depleted but were expressible, and puppies were briefly evaluated and were in good health and body condition. Bloodwork revealed a moderate normocytic, normochromic, regenerative anemia (PCV of 28%), leukocytosis with neutrophilia characterized by a left shift (WBC $24.3 \times 10^3/\mu\text{l}$, RI 5.7 - 14.2; segmented neutrophils $17.5 \times 10^3/\mu\text{l}$, RI 2.7 - 9.4; band neutrophils $3.9 \times 10^3/\mu\text{l}$, RI 0.0 - 0.1), and hypoalbuminemia (2.3 g/dl, RI 3.2 - 4.1). Abdominal ultrasonography and radiography indicated an enlarged, fluid-filled uterus with a small amount of gas. A presumptive diagnosis of metritis was made; due to clinical condition, dog was stabilized overnight, with an ovariohysterectomy performed the following morning. Abdominal exploration revealed mild peritoneal effusion and moderate uterine distension. On the ventral surface of the right uterine horn, 3 discrete, 5 mm diameter uterine perforations with exuding purulent material, were noted. Submitted cultures identified *Staphylococcus pseudintermedius*, *Enterococcus faecalis*, and *Fusobacterium necrophorum*, which were sensitive to a combination of enrofloxacin and amoxicillin/clavulanate. Histological examination revealed trophoblastic cells penetrating deep into myometrium to serosa, and severe necrosuppurative inflammation of the uterus with intralesional bacteria. Findings were consistent with placenta percreta, necrosuppurative metritis with focal rupture, and locally extensive mesovaritis with vasculitis. The patient recovered well from surgery and was discharged 48 hours after surgery with oral antibiotics and pain medications; she and her puppies were reported to be doing well 3 months later. Trophoblastic invasion through the myometrium predisposed to uterine friability and likely caused weakened contractions, leading to prolonged and difficult labor. These uterine conditions, in combination with the patient's poor body condition as well as fetal manipulation at parturition, could have led to impaired uterine clearance, bacterial invasion and eventual postpartum metritis with subsequent perforation. To the authors' knowledge, this is a first report of a case of placenta percreta in a dog.

Keywords: Canine, dystocia, metritis, placenta percreta, uterine perforation

