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Clinical Article

FOETAL MUMMIFICATION WITH UTERINE RUPTURE IN A LABRADOR

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SUMMARY

A five year old Labrador bitch was brought with the history of prolonged pregnancy and exhibited clinical signs of greenish brown discharge for the past 12 hrs. Per-vaginal examination showed no foetus in the birth canal. Radiographic examination of abdomen revealed foetal skeleton. On trans-abdominal ultrasonographic examination, two dead fetus and one mummified foetus was identified. Based on the history and diagnostic imaging modalities the case was tentatively diagnosed as foetal mummification. Under general anaesthesia using Ketamine (5 mg/kg) induction and maintenance with Isoflurane, a midventral laparotomy was performed. Two dead foetus in the abdominal cavity and one mummified foetus in the ruptured uterine horn were removed. Ovariohysterectomy(OH) was also performed. Post-operatively, the animal was administered intravenous fluids, antibiotics and analgesics for 5 days and animal made an uneventful recovery.

Keywords: Dog, Mummification, Uterine rupture

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Dogs are thought to be the ideal companions for human being and hence dog breeding has gained popularity all over the world (Singh *et al.*, 2019). Various obstetrical problems occur in bitches during the gestation period. Mummification of the fetus is a common issue in polytocous animals and rare in monotocous mammals (Roberts, 2004). Abnormalities in development or chromosomes, infectious agents (*Herpes virus, Parvovirus*), maternal endocrine disorders (hypothyroidism), contraceptive medications, uterine torsion and dystocia can result in embryonic and foetal death in dogs (Lefebvre, 2015). These conditions may change the uterine environment, resulting in foetal death and subsequent mummification. Foetal mummification occurs in second half of the gestation after ossification of the bones (Planellas *et al.*, 2012). Uterine rupture is one of the rarely diagnosed clinical entities in canines (Niwas *et al.*, 2017). This case study describes a rare case of uterine rupture in a she dog with a single mummified foetus and two normal dead foetus.

A five year old Labrador bitch weighing 38 kg was presented with the history of prolonged pregnancy and exhibited signs of greenish brown discharge for the past 12 hours. Per-vaginal examination showed no foetus in the birth canal. Radiographic examination revealed presence of foetal skeleton. On trans-abdominal ultrasonography examination, in a single window at the caudal end one fetus and one irregular hypoechoic small sized undefined skeletal structure With the absence of foetal fluids observed followed by in ovarian end other foetal skeleton was observed with absence of heart beat. Hemato-biochemical analysis revealed slight increase in white blood corpuscles (WBC) count and hypoglycemia. Based on anamnesis and imaging modalities the case was tentatively diagnosed as foetal mummification.

Preoperative antibiotic (Ceftriaxone 750 mg I/V) and opioid analgesic (Tramadol 50 mg S/C) were administered to the bitch. Preanaesthetics, Dexmeditomidine @ 0.5 µg/kg I/V and Diazepam 0.5 mg/kg I/V were given. Induction with Inj.Ketamine 5 mg/kg I/V and maintenance with Isoflurane under variable vapour pressure settings was followed. The dog was positioned in dorsal recumbency and a ventral midline incision was made from umbilicus to pubis to gain access into the abdominal cavity. Greenish fluid was noticed on opening the abdominal cavity with two fully developed dead foetus (Fig. 1). Upon abdominal cavity exploration, the involuted uterus was identified with multiple uterine ruptured spots on right horn (Fig. 2). On palpation of the right horn a small structure was felt near the caudal end of the horn. Upon exploring through the ruptured region a mummified foetus was retrieved (Fig. 3). OH was done and the abdominal cavity was lavaged with warm normal saline and metronidazole was infused into the abdominal cavity. The abdominal incision was then closed routinely. Postoperative fluid therapy, antibiotics, analgesic and alternate day dressing of the suture site was followed. After 48 hours, the bitch was eating and urinating normally and had recovered from the surgery without any major complications. Sutures were removed on tenth post-operative day.

According to Jackson (2004) uterine rupture during whelping is most likely to occur in cases in which the

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Fig. 1. Foetus in the abdominal cavity

Fig. 2. Multiple spots of ruptured uterus

Fig. 3. One mummified fetus, two dead foetus and uterus with ovary

uterine wall is compromised by the presence of infection, a dead foetus, uterine torsion, or futile obstetrics procedures or excessively large doses of oxytocin. The reason for rupture of uterus in our case may be due to the presence of mummified foetus at the caudal end of the right horn. In dogs, presence of one or more mummified fetuses along with normally developing live fetuses in the same litter was observed by (Roberts, 2004). Present case also coincides as one mummified and two fully developed dead fetus were present. Radiographic examination revealed only two clear foetal skeletal structure. The mummified foetus could not be visualized in the present case. This is in coincidence with the findings of Sharma *et al.* (2022) who reported foetal mummification in an American Bull dog in which three foetal skeletal structures were visible on plain radiograph and upon C-section one live, two fully developed dead foetus and three mummified foetus were taken out. This indicates that mummified foetus may or may not be visible in plain radiographs. Haemato biochemical analysis revealed very slight increase in WBC count and hypoglycemia. This indicates uterine rupture might have occurred recently and since the animal was anorectic glucose level was slightly reduced. Johnston *et al.* (2001) observed extra-uterine foetal mummies accidentally found in the abdominal cavity covered with omentum or mesentery in dogs and cats. But contrary to this mummified foetus was present in the uterus and dead foetus was seen in the abdominal cavity covered with omentum. In this case the attempt was not made to suture the ruptured uterus because there were multiple ruptured sites in the horn of the uterus and opted OH. The suitable approach for the uterine rupture is OH combined with post-operative fluids and antibiotic therapy (Singhal *et al.*, 2017; Niwas *et al.*, 2023).

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