CASE REPORT
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LAPARO-HYSTEROTOMY AS RADICAL MEASURE FOR CORRECTION OF CANINE FOETAL MACERATION: A CASE REPORT

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ABSTRACT

This communication presents a successful surgical management of canine foetal maceration in a non-descript dog with the history of natural mating 60 to 65 days back but with no sign of whelping. Ultrasonographic examination revealed ill-defined foetal mass in-utero with absence of foetal movement and heartbeat & radiograph showed indistinguishable entangled skeletal mass. Based on anamnesis, clinical & laboratory findings the case was diagnosed as foetal maceration. Aseptic laparo-hysterotomy followed by careful post operative therapeutic measure resulted uneventful recovery without any complication, bringing the animal to normal physiological health.

Keywords: Dog, Foetus, Hysterotomy, Maceration, Ultrasonography

INTRODUCTION

In-utero degeneration of foetus or foetal maceration has been reported in many domesticated species at foetal stages of gestation after skeletal development (Tunc and Celik, 2021; Kumar *et al.*, 2013). Though this condition is frequently reported in bovines but incidence is rare in pet animals (Kumar *et al.*, 2013; Sagar, *et al.*, 2017). Foetal maceration occurs due to entry of pathogenic organism before or after foetal death via partially dilated cervix that occurs due to regression of corpus luteum (Kumar *et al.*, 2013; Mahla *et al.*, 2017; Sagar, *et al.*, 2017; Devi, *et al.*, 2020). Uterine inertia, inadequately opened cervix, disintegrated foetal parts and bones retained in the uterus affect the normal physiology of the animal compelling the vet to opt surgical removal (Dolník *et al.*, 2013; Tunc and Celik, 2021), which is presented in this communication.

CASE HISTORY AND OBSERVATION

A two and half year old female non-descript dog weighing about 14 kg was presented to Veterinary Clinical Complex (VCC), Lakhimpur College of Veterinary Sciences, Assam Agricultural University, Joyhing, North Lakhimpur, Assam with the following history. The animal was anorectic with occasional mild odorous abnormal greenish brown vaginal discharge since few days. On clinical evaluation, vital parameters were found within normal range except little increase in core body temperature (102.9^0 F). Anamnesis also revealed that the dog had a mating history 60-65 days back. Abdominal ballottement gave the indication of mass within uterus but without sign of foetal viability. Trans-abdominal ultrasonographic evaluation (Sonosite M-Turbo, FUJIFILM, USA) by 5 MHz transducer revealed a structure with foetal integrity with head diameter (1.88 cm) indicating 48 days of foetal age but without any foetal fluid, foetal movement and heartbeat (Fig. 2A). Along with this, intrauterine echogenic masses was also seen but with no sign of foetal viability. Plain left lateral radiograph revealed indistinct intertwined skeletal mass (Fig. 2B). Based on all aforementioned findings, the case was diagnosed as foetal maceration and subjected to laparo-hysterotomy.

TREATMENT AND DISCUSSIONS

Ceftriaxone and Sulbactam (Exact 375: Excellar Health Care Pvt. Ltd) @ 10 mg/kg body weight (b.wt.) as antibiotic umbrella, Pantoprazole @ 1 mg/kg body weight along with 140 ml of normal saline were administered intravenously (IV) on the day before surgery. The animal was subjected to aseptic surgery following standard aseptic protocol on the next day. Pre-operative fasting for 12 hours was suggested prior to surgical intervention. Atropine sulphate @ 0.04 mg/kg b.wt. intramuscularly (IM) and Tramadol @ 4 mg/kg b.wt. IM were administered as pre-anaesthetic. Balanced anaesthesia was induced by xylazine @ 1 mg/kg b.wt. and ketamine @ 5 mg/kg b.wt. via IM route taking in a single syringe. Maintenance of anaesthesia was done by IV administration of ketamine and diazepam mixture at 1:1 ratio. Entire ventral abdominal area was prepared for aseptic surgery securing the animal in supine position. Following laparotomy via caudal mid ventral incision the uterus was exteriorized (Fig. 1A); with a stab incision on the uterine dorsal body, hysterectomy was performed and three numbers of the macerated foetuses were removed (Fig. 1D) along with foul smelling dark paste greenish brown uterine materials (Fig. 1B). Thereafter, the empty uterus was rinsed with normal saline. Using absorbable

Fig. 1: Peri-operative procedure; A: Exteriorized uterus, B: Dark paste greenish brown uterine materials, C: Uterine closure with Cushing suture, D: Skin closure with cross mattress suture & three numbers of macerated foetus, E: Surgical site on the day of suture removal D: the Dog on the day of suture removal.

Chromic Catgut no. 2-0 suture material and cushing suture technique, the uterus was closed (Fig. 1C). Simple continuous suture technique (Polyglactin 910 no.1-0) was used to close peritoneum and muscle layers. Skin closure was effected by cross mattress technique using Nylon no. 1-0 (Fig.1E). Post operatively, the animal was maintained in confinement under owner's observation with Elizabethan collar. A course of Ceftriaxone and Sulbactam @ 10 mg/kg b.wt. IV for 7 days, Metronidazole @ 20 mg/kg b.wt. IV for 3 days, Meloxicam @ 0.5 mg/kg b.wt. IM for 5 days IM, Pheniramine maleate @ 0.5 mg/kg b.wt. IM for 7 days, Pantoprazole @ 1 mg/kg b.wt. IV for 5 days along with

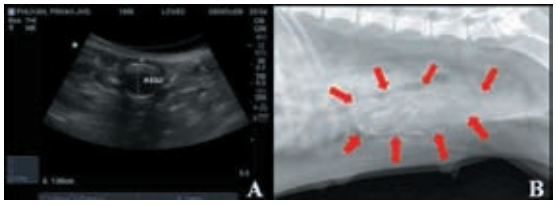

Fig. 2: Diagnostic images; A: USG pic showing head (diameter 1.88 cm) (B). Radiograph revealed indistinct intertwined skeletal mass (red arrowed)

Normal Saline injection @ 10 ml/kg, b.wt. IV for 3 days was also administered. The skin wound was dressed twice daily from 3rd day onward with 5 per cent Povidone Iodine liquid and fly repellent spray till 3 days post suture removal. Sutures were removed on 8th day of surgery (Fig. 1E, F).

Gradual improvement in appetite and return to normal health was observed from 3rd postoperative day and uneventful recovery could be noticed within 10-15th postoperative day.

Infection following foetal death at the late stage of gestation accompanied by inability to expel dead fetuses commonly leads to foetal maceration (Kumar *et al.*, 2013; Mahla *et al.*, 2017; Sagar *et al.*, 2017; Devi *et al.*, 2020). No authentic etiological factor of foetal death could be ascertained from anamnesis in the present case. Death and non-delivery of fetuses might be due to unusual presentation, position, posture, cervical spasms, uterine inertia or dystocia (Mahla *et al.*, 2017; Bozkurt *et al.*, 2018; Devi *et al.*, 2020) as well as due to lack of ACTH and cortisol production by foetuses

to commence the birth process (Bindari and Shrestha, 2012). Entry of autolytic organism into the uterus following death of foetus initiates foetal emphysema, subsequently autolysis, resorption and/or putrefaction (Kumar *et al.*, 2013; Bozkurt *et al.*, 2018). If foetal death occurs after bone formation, autolysis continues till only bone and hairs remains (Bozkurt *et al.*, 2018; Devi *et al.*, 2020, Tunc and Celik, 2021). In this case also death has occurred after bone formation and autolysis and/or degeneration happened after probably in the middle of its process as evidenced by foetal integrity. Based on clinical findings, therapeutic management of maceration includes medicinal or surgical, again surgeons may go for removal of fetuses either by ovariohysterectomy or hysterotomy (Mahla *et al.*, 2017; Devi *et al.*, 2020). In the present case, hysterectomy revealed three macerated fetuses of different size indicating death of foetuses at different stage of pregnancy. Deaths of fetuses were almost 10-15 days ago as evidenced by USG. Absence of clinical severity was probably due to discharge of uterine debris via open cervix and comparatively early presentation of the case. Similar kind of observation was also made by Devi *et al.*, 2020 and Tunc and Celik, 2021. Application of combined antibiotic therapy along with supportive treatments attempted in the present case helped in bringing complete recovery.

SUMMARY

It was concluded that timely presentation of the case with precise diagnostic and radical therapeutic measure following hyterotomy could bring the animal to complete cure.

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