

## Unusual cases of foetal death in Pitbull bitches: Foetal mummification and maceration

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### Abstract

The present report describes the rare cases of foetal deaths, their influence on dam and successful surgical management in Pitbull bitches. Two bitches were presented to the Teaching Veterinary Clinical Complex with history of mating 45 and 70 days earlier and abnormal vulval discharge. Hematological evaluation of both bitches revealed leukocytosis and neutrophilia. The levels of blood urea nitrogen and creatinine were elevated in one bitch. Ovario-hysterectomy was performed in both the bitches. On surgery the cases were diagnosed as foetal mummification and maceration, respectively. Post-surgery both bitches recovered well. It was concluded that ovario-hysterectomy is a safe option for bitches with foetal mummification or maceration.

**Key words:** Foetal death, Mummification, Maceration, Ovario-hysterectomy, Pitbull

### Highlights :

- Successful management of septicaemia in dam with foetal deaths.
- Significance of laparotomy in cases where radiographs were inconclusive.
- Post-surgery both bitches recovered well.
- Ovario-hysterectomy is safe option for bitches with foetal mummification or maceration.

Foetal mortality seems to be a major problem in canine causing economic and emotional stress to pet owners. Antenatal mortality in early gestation usually goes unnoticed due to tissue resorption (Lorenz *et al.*, 2009). Signs of foetal deaths may be observed in late gestation after development of foetal bones (Bindari and Shrestha, 2012). *In utero* mortality may occur due to poor nutrition of dam, stress, trauma, congenital defects, maternal metabolic or endocrinal imbalances, use of contraindicated drugs like estradiol benzoate, bromocryptine (Romagnoli, 2002) or infectious pathogens like Canine Herpes virus, Canine Parvo virus, *Brucella canis*, Toxoplasmosis etc. causing foetal mummification, maceration, abortion or foetal resorption (Gill, 2001). Foetal mortality varies among different breeds of dogs, observations of one breed may not always be applicable on other breeds. The present study puts on record

two cases of foetal death (mummification and maceration), their influence on demand their successful surgical management in Pitbull bitches.

Two Pitbull bitches (age 2.5 years, 25 kg and 4 years, 32 kg body weight respectively) were presented to the Teaching Veterinary Clinical Complex, Uchani, with history of mating 45 and 70 days earlier respectively. The first bitch had a history of greenish vulval discharge for the last 7-10 days and failure of induction of whelping by another veterinarian. The bitch was active with complaint of inappetence. The rectal temperature recorded was 102<sup>o</sup>F. Vaginal examination revealed dilated birth canal and small amount of mucoid discharge.

The second bitch had abnormal vulval discharge, anorexia, vomiting, fever and polydypsia for 5-6 days. Rectal temperature was 104<sup>o</sup>F. Vaginal examination revealed foul smelling reddish brown purulent discharge.

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Five mL blood was collected from cephalic vein of each bitch. Routine haematological (Hb%, PCV, TEC, TLC, DLC) evaluation by Blood Cell Counter MS4SE and biochemical evaluation (BUN and creatinine) by Fully Automatic Biochemistry Machine, Erba, Mannheim (EM Destiny 180) of both bitches were done. Both bitches revealed leucocytosis (24600/uL, 45000/uL) and neutrophilia (90% and 93%) respectively. In the second bitch the levels of BUN (35 mg/dL) and creatinine (3.2 mg/dL) were found to be higher while in the first bitch these parameters were within normal range. Lateral abdominal radiographs were inconclusive. Taking into account the poor general conditions of bitches due to failure of induction parturition or due to abnormal vulvar discharge, it was decided to perform laparotomy.

In both bitches laparotomy was performed from mid line incision under general anaesthesia as described previously by Islam *et al.*, 2019. Bitches were premedicated with atropine sulphate @0.04 mg/kg body weight I/M and sedated with xylazine @ 0.5 mg/kg BW I/M. General anaesthesia was induced by propofol @4-6 mg/kg BW administered intravenously and maintained by 2-3% isoflurane in oxygen (inhalation) according to the surgical responses of the bitches. During surgery, all physiological parameters were monitored by multiparameter monitoring machine (Vetedge, India). On opening the uterus in the first bitch it was observed to be contracted over foetal parts, it was incised and inspected. Uterus was packed with dehydrated soft foetuses covered with moist dark tissue with no placental fluid (Fig. 1). The case was diagnosed as foetal mummification as described by (Baruti *et al.*, 2018). In bitch two, the uterus was tightly contracted over the foetal bones and on incision foetal bone fragments with purulent malodorous reddish brown fluid were observed (Fig. 2). The case was diagnosed as foetal maceration as defined previously (Bozkurt *et al.*, 2018). In both bitches ovariohysterectomy was performed. Abdominal wall was closed with absorbable Truglyde suture no 2 (Sutures India) in two layers. Skin was

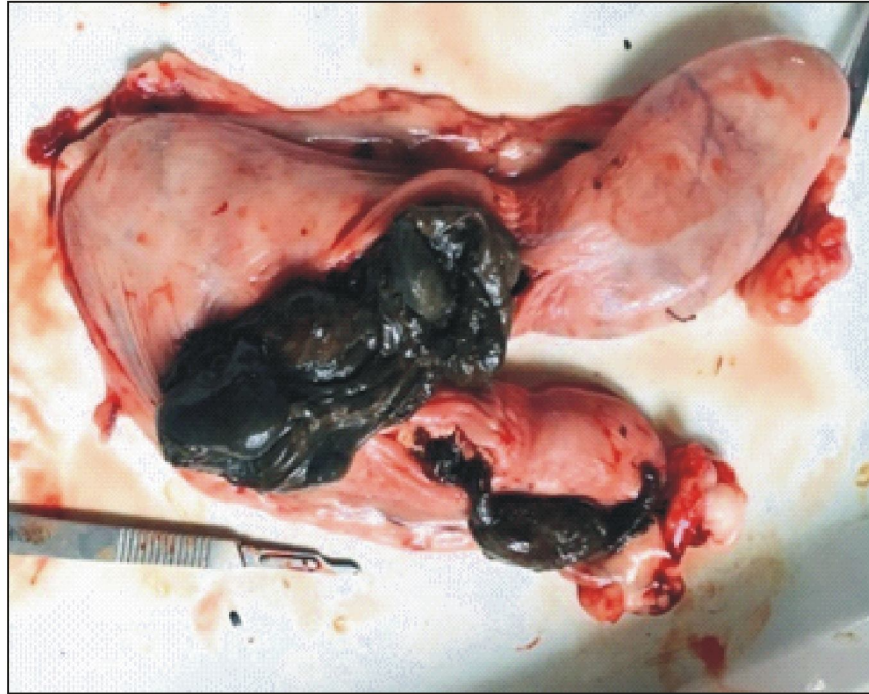
apposed using nylon. Both bitches were provided supportive therapy which included broad spectrum antibiotic: ceftriaxone @ 25 mg/kg BW I/M, meloxicam @ 0.2-0.3 mg/kg I/M, ranitidine @ 0.5 mg/kg I/M, polybion 2mL IM along with fluid therapy @ 20 mL/kg 0.9% normal saline for five days. Daily dressing of surgical wound with liquid betadine was done and the owner was advised to apply Alluspray (NEOGEN Vet) topically. Skin sutures were removed after 15 days of surgery. Both bitches recovered well.

In the present report foetal deaths were noticed in Pitbull bitches of 2.5 year and 4 years of age. It has also been stated previously (Gill, 2001) that maternal age cannot be considered a risk factor for foetal death in bitches.

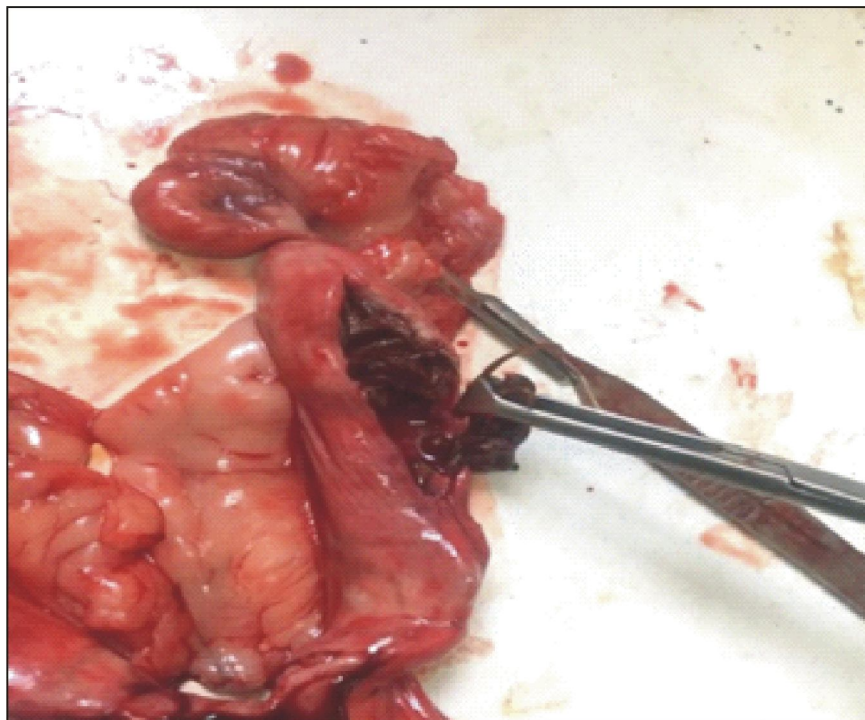
Foetal mummification of some foetuses is common in polytocous species like bitch which doesn't interfere with normal development of other foetuses (Arthur *et al.*, 2001). But mummification of whole litter is rare, as reported in the present study. In the present report, the cervix of the bitch was open predisposing bacterial contamination of uterus from outer environment which may result in metritis or maceration (Mudasir *et al.*, 2012). Sometimes mummified fetus may escape from spontaneous rupture of uterus to the abdominal cavity resulting in secondary ectopic pregnancy (Maksimovic *et al.*, 2020), risking the survivability of dam in future.

The incidence of foetal maceration is low in canine (Bozkurt *et al.*, 2018). Foetal maceration cases if left unattended may lead to endometritis or pyometra (Romagnoli, 2004) depending on the immunocompetence of dam and stage of pregnancy. In both the bitches of the present report the exact reason of the foetal death could not be ascertained. The possible reasons may be some sort of foetal distress or intra uterine infections as described by Gill, 2001. In both cases of foetal mummification as well as maceration, foetuses were retained in the uterus. The suggested causes of retention of foetuses in uterus are primary uterine inertia, *in utero* infection, cervical spasm, poor body

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**Fig. 1. Uterus of a bitch excised to show foetal mummification**



**Fig. 2. Uterus of a bitch excised to show pus and foetal bones suggesting foetal maceration**

condition of dam, dystocia due to faulty presentation, position or posture of foetus (Serin and Parin, 2009).

Haematology of both cases revealed leucocytosis and neutrophilia indicating onset of septicemia in cases of foetal mummification and maceration in accordance with Mudasir *et al.*, 2012). Additionally in case of foetal maceration there were signs of toxemia affecting the renal system and similar findings were also observed by Max *et al.* (2015).

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- It was concluded that ovariohysterectomy is a safe option for bitches with foetal mummification or maceration.
- Authors contribution:** SR, SP: Ovariohysterectomy in foetal mummification case; SR, HS: Ovariohysterectomy in foetal maceration case; RSB: Anaesthesiologist during both surgeries and guided in script writing.
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