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Surgical management of foetal mummification in canine: A case study

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Abstract

The present paper records a unique case of mummification of foetus in a female German shepherd dog. An 8 year old German shepherd dog was presented to Veterinary Clinical Complex of Nagpur Veterinary College Nagpur with a complaint of anorexia, frequent vomiting and lethargy. Abdominal palpation revealed presence of a mass in the abdomen. Ultrasonographic examination was performed which revealed hyperechoic areas within the uterus surrounded by hypoechoic areas. Radiography was performed which indicated the remnants of foetal skeleton within the uterus. Exploratory laparotomy was performed. A single mummified foetus was found within the uterus. Ovariohysterectomy was performed to reduce septicaemia. Post surgically, the patient made an uneventful recovery.

Keywords: Foetal mummification, ovariohysterectomy, laparotomy

Introduction

Foetal mummification is an uncommon condition in most domestic species. However, it is often encountered in multiparous and polytocous species. The exact outcome of early foetal mortality cannot be predicted, and is influenced by several factors, including the cause of fetal mortality, differences in pregnancy between species, stage of gestation at foetal death, and number of foetuses (Réjean C Lefebvre, 2015) [1]. Foetal mummification does not occur during first half of the pregnancy but rather during late gestation. This is because embryonic or foetal death prior to the development of the foetal bones is usually followed by resorption (Johnston *et al.*, 2001 and Lorenz *et al.*, 2009) [2, 3]. Ossification of foetal bones leads to foetal mummification after foetal death, if there is no bacterial infection concurrent with or causing death of the foetus (Robinson *et al.*, 2003) [4]. In canines, foetal mummification is a characteristic to canine herpes virus infection (Bindari, Y. R. and Shrestha, 2012) [5].

Case history and clinical signs

A 8 year old German Shepherd dog weighing 30 kgs was presented to the Teaching Veterinary Clinical Complex of Nagpur Veterinary College, Nagpur exhibiting a history of anorexia for the past four days, along with occasional episodes of vomiting. Upon clinical examination, the rectal temperature was found to be slightly elevated. Upon physical examination, the abdomen was found to be distended. The owner reported two stillbirths that occurred 6 months prior; and no ultrasound examination was conducted to assess for any remaining foetal material. The dog had been in good health until its subsequent heat cycle, during which the aforementioned clinical signs manifested.

Routine blood tests were conducted to aid in diagnosis along with liver and kidney function tests. Haematological parameters were generally found to be in the normal range with the exception of elevated total leukocyte count. The patient exhibited elevated BUN and Creatinine. ALT and AST were found to be within the normal range.

Material and Methods

Upon abdominal palpation, a foetal mass was detected. Transabdominal ultrasonography revealed hyperechoic foetal bones and vertebrae, devoid of any surrounding soft tissue structures, along with the absence of foetal fluids and heartbeat.

Abdominal radiography further confirmed the presence of distinct radiopaque masses, comprising the foetal skeleton. Haematological evaluation showed an elevation in lymphocytes, while biochemical analysis indicated an increase in blood urea nitrogen (BUN), suggesting uremia, and high levels of creatinine, indicative of impaired kidney function.

Based on the physical examinations and imaging findings, the conclusion was drawn that the animal was pregnant but the foetuses that had undergone autolysis within the uterus without being aborted. The diagnosis was established as foetal mummification. Consequently, it was decided to perform an ovariohysterectomy to minimise septicaemia.

Pre-anesthetic medication was administered, consisting of atropine sulfate (0.04 mg/kg BWt) and meloxicam (0.02 mg/kg BWt). Anaesthesia was induced by intravenous administration of diazepam (0.5 mg/kg BWt), followed by ketamine HCl (5.0mg/kgBWt) and maintained on isoflurane. Ovariohysterectomy was performed by standard procedure through a ventral midline approach. Foley's catheter was placed intra abdominally as a drain for any discharge which might occur.



Fig 1: Lateral radiograph of abdomen showing foetal skeletal remains



Fig 2: Vento dorsal radiograph of abdomen showing foetal skeletal remains



Fig 3: Ventral midline incision



Fig 4: Mummified foetus within the uterus

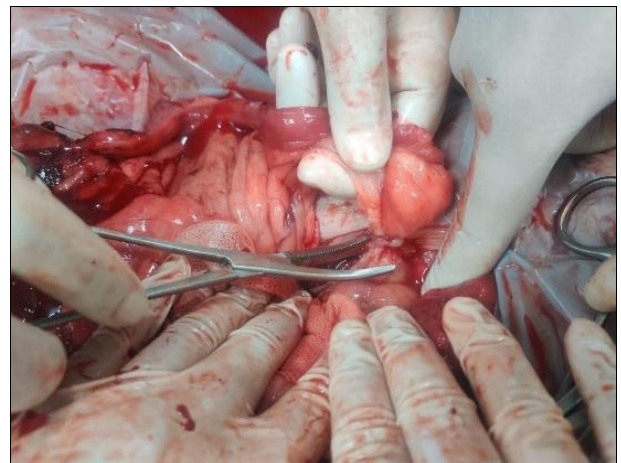


Fig 5: Ovariohysterectomy following standard procedure



Fig 6: Placement of Foley's catheter

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Post-operative care

Post operatively, the patient was kept on intravenous fluids (Dextrose Normal Saline, Ringer's Lactate) and antibiotics (Ceftriaxone and tazobactam @ 25mg /kg BWt) for 5 days along with Metronidazole for 3 days. Painkillers were administered (Meloxicam at 0.2 mg/kg BWt for three days). Daily aseptic dressing of the suture line was done using 10% Betadine solution. The patient made an uneventful recovery. However, the dog passed away 30 days after the operation, succumbing to uremia and chronic kidney failure.

Conclusion

The main reason for the lack of expulsion of dead mummified fetus in present case may be primary uterine inertia which is common in canine species (Bindari, Y. R. and Shrestha, S 2021)^[5]. In comparison to other species, prevalence of canine neonatal mortality is considerably higher and is related to many factors including prolonged labour, maternal neglect or carelessness, lack of milk, congenital abnormalities and acquired disorders of neonates (Ganzabe Kusse, 2018)^[6].

It is necessary to perform regular ultrasonographic scan of gestating and post-partum females even in the absence of any pathological signs. By using ultrasonography and other necessary interventions during fetomaternal monitoring, early and accurate treatment can be performed in related cases.

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