



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2023; 12(3): 5356-5358
© 2023 TPI

www.thepharmajournal.com

Received: 08-01-2023

Accepted: 19-02-2023

A Thangamani

Assistant Professor, Department of Veterinary Gynaecology and Obstetrics Veterinary, College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Tirunelveli, Tamil Nadu, India

Chhavi Gupta

Assistant Professor, Department of Veterinary Gynaecology and Obstetrics Veterinary, College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Tirunelveli, Tamil Nadu, India

N Krishnaveni

Assistant Professor, Department of Veterinary Surgery and Radiology Veterinary, College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Tirunelveli, Tamil Nadu, India

A Ganesan

Assistant Professor, Department of Veterinary Gynaecology and Obstetrics Veterinary, College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Tirunelveli, Tamil Nadu, India

A Sabarinathan

Assistant Professor, Teaching Veterinary Clinical Complex Veterinary College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Tirunelveli, Tamil Nadu, India

V Prabhakaran

Associate Professor and Head Department of Veterinary Gynaecology and Obstetrics Veterinary, College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Tirunelveli, Tamil Nadu, India

Corresponding Author:

A Thangamani

Assistant Professor, Department of Veterinary Gynaecology and Obstetrics Veterinary, College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Tirunelveli, Tamil Nadu, India

An unusual case of primary uterine inertia due to fetal mummification along with single live pup in a Rajapalayam bitch

A Thangamani, Chhavi Gupta, N Krishnaveni, A Ganesan, A Sabarinathan and V Prabhakaran

Abstract

A 5 year old Rajapalayam bitch was brought to Teaching Veterinary Clinical Complex, VCRI, Tirunelveli with history of prolonged gestation (mated 68 days back). Breeding history of dog was obtained from the owner. General clinical examination revealed all the vital signs were within the physiological limits. On trans-abdominal ultrasonographic examination revealed hypoechoic small sized fetal structure and loss of fetal fluids has been noticed, one viable fetus with clear fetal fluids also observed and heart beat of the live fetus was 165 beats/min. Plasma progesterone concentration was estimated which was around 2.4 ng/ml. Based on above clinical and diagnostic findings the case was diagnosed as primary uterine inertia due to prolonged gestation coupled with fetal mummification. C-section was performed to relieve the one live pup and three mummified fetus. Post-operatively the bitch was recovered uneventfully without any complications.

Keywords: Mummification, C-section, rajapalayam dog, Primary uterine inertia and Prolonged gestation

Introduction

Foetal mummification is not common in most domestic species of animals. Most commonly addressed in polytocous species like swine and dogs. It is also reported in monotocous animals like cow, mare when the fetus is retained for prolonged time. Based on the fetus development and viability, the failure of pregnancy is divided into 2 categories such as: Embryonic mortality and Foetal death. Thangamani (2018) [1] reviewed that unpredictable causes behind the foetal mortality followed by stage of pregnancy at which foetal death occurs and total number of fetuses involved. The various findings revealed the possible outcome of foetal death is mummification. The foetal mummification was highly encountered in porcine species (Kennedy and Miller, 2007) [2] followed by small ruminants like sheep and goat, cow, dog, cat and horse [3, 4, 5]. Canine fetal mummification is apparently similar to swine where one to three mummified fetuses are expelled with normal pups at the time of whelping [6]. An unusual case report of canine fetal mummification associated with prolonged gestation and its successful surgical management has been reported in this paper.

Case history and clinical observations

A 5 year old Rajapalayam bitch (weight 35 kg) was brought to Teaching Veterinary Clinical Complex, VCRI, Tirunelveli with history of prolonged gestation. As per the owner history, bitch had mated 68 days back. On physical examination animal appeared active, alert and response to the stimuli was observed. Enlarged mammary gland and milk secretion noticed (Figure 1). General clinical examination revealed all the vital signs were within the physiological limits. On pervaginal examination showed no appreciable relaxation of vaginal passage, on trans-abdominal ultrasonographic examination revealed hypoechoic small sized fetal structure and loss of fetal fluids has been noticed, one viable fetus with clear fetal fluids also observed and Heart Beat of the live fetus was 165 beats/min (Figure 2). Plasma progesterone concentration was estimated which was around 2.4 ng/ml. Based on above clinical and diagnostic findings the case was diagnosed as primary uterine inertia due to prolonged gestation coupled with fetal mummification. To save the life of the dam and one live fetus, planned for C-section to deliver the fetuses.

Treatment and Discussion

The dog was prepared aseptically for C-section under mid-ventral approach. Dog was induced with Propofol anesthetic @ 6mg/kg body weight through intravenous route and maintained with Isoflurane gaseous anaesthesia. A linear incision was made on the uterine body to expose the fetus (Figure 3 and 4). Each fetus was removed gently by milking the uterus with gloved hand with due care to minimize spilling of uterine contents. A total of 3 mummified fetuses were removed along with one live fetus (Figure 5 and 6). The placental remnants were also removed. The uterus was thoroughly cleaned using warm saline solution. The uterus was sutured using No.1 PGA in inverted pattern (Cushing's followed by Lambert's) from the cervical end to ovarian end. Metronidazole solution was instilled in the abdominal cavity to check the infection. The muscles were apposed in two layers by simple interrupted fashion using No.1 PGA. The skin incision was closed with silk. Post-surgical care was given with antimicrobial (Cefotaxim @ 5mg/kg, SID, 7 days) and analgesics (Meloxicam @ 0.2 mg/kg, SID, 3 days). Antiseptic dressing of the suture line was done with Drez solution. Skin sutures were removed on 14th post-operative day. Post-operatively the bitch was recovered uneventfully without any complications.

In the present case, a total of 3 mummified fetus were removed from both the horns along with one fully developed live fetus. Mummified fetuses were soft in consistency without any odour and with little placental fluids and membranes [2, 7]. Presence of one or more mummified fetus along with normal live fetus is observed occasionally in dogs, similarly Vikram *et al.*, (2015) [7] also found 5 mummified fetuses along with two live fetus. Ultrasonography revealed only presence of bony structures in the uterus which were most likely the fully developed live fetus with heart beat.

Thangamani (2018) [1] recently reviewed that canine herpes virus isolation is commonly practiced from kennel with report of mummification in previous batch of bitches and characteristic pathological changes observed in affected new born puppies, include mummified fetus. However, in the present case dog showed no illness at the time of presentation as well as post-operatively, this might suggestive of non-infectious causes predisposed the mummification in this case. Interestingly, Carrig *et al.* (1972) and Johnston *et al.* (2001) [8, 9] observed that in dog and cat extra-uterine foetal mummies have been accidentally found in the abdominal cavity covered with omentum or mesentery, but in the present case both live fetus and mummified fetus were diagnosed by USG and they are found in the healthy uterus.

Researchers also believed that sometimes fetus fail to produce sufficient adrenocortical trophic hormone (ACTH) and cortisol which were the first signal given to mother for initiating the process of parturition [10]. On the other hand reports of Romagnoly (2002) [11] suggested that uterine inertia as main cause of dystocia and retention of mummified fetus in bitches. In the present study concentration of progesterone reached 2.4 ng/ml on the 68 day of post mating, in addition one live fetus and remaining were three mummies failed to develop initiation of whelping. Conclusively, the present case was recorded as an unusual case of primary uterine inertia due to prolonged gestation coupled with fetal mummification along with single live pup in a Rajapalayam bitch.



Fig 1: Mammary gland enlargement and milk secretion



Fig 2: Monitoring of heart beat of one live fetus



Fig 3: Mid-ventral incision



Fig 4: Exposure of uterine horn with fetus



Fig 5: One live fetus



Fig 6: Three mummified fetuses

11. Romagnoli S. Complications in canine pregnancy and their clinical approach. Proceedings of the Veterinary Sciences Congress, SPCV, Oeiras; c2002. p. 159-162.

Conclusion

Mummified fetus were diagnosed using ultrasonography and successfully removed through C-section in a bitch with standard anesthetic and surgical procedure. Post-operatively the bitch was recovered uneventfully without any complications.

Acknowledgement

The authors are thankful to Department of Veterinary Gynaecology and Obstetrics, Teaching Veterinary Clinical Complex and Dean for providing facilities to conduct and conclude the case.

References

1. Thangamani A. static foetal cadaver in domestic animals- a review. *Veterinary Practitioner*. 2018;19(2):313-316.
2. Kennedy PC, Miller RB. The female genital system In: Jubb KV, Kennedy PC, Palmer N, (Eds.). *Pathology of Domestic Animals*. 4th ed. New York: Academic. 1993;3:387-470.
3. Mane PM, Chaudhary RJ, Lokhande AT, Sakhare PS. Foetal mummification in goat. *Asian J Anim. Sci*. 2010;5(1):124-125.
4. Barth AD. Induced abortion in cattle In: Morrow DA, *Current therapy in Theriogenology*, 2nd ed. Philadelphia, USA: WB Saunders; c1986. p. 205-208.
5. Johnston SD, Raksil S. Foetal loss in the dog and cat. *Vet. Clin. N. Am. Small Anim*. 1987;17:535-554.
6. Roberts SJ. *Veterinary Obstetrics and Genital Diseases*. 2nd ed. New Delhi, India: CBS Publication and Distributions; c2004. p. 170-174.
7. Vikram R, Chaudhary GR, Sivanarayanan TB, Amit, Sushobhit S, Narayanan K. Successful treatment of fetal mummification in a bitch by caesarean section: a case report. *Theriogenology Insight*. 2015;5(2):147-151.
8. Carrig CB, Gourley IM, Philbrick AL. Primary abdominal pregnancy in a cat subsequent to ovariectomy. *J Am Vet Med Assoc*. 1972;160:308-310.
9. Johnston SD, Kustritz MVR, Olson PNS. Canine parturition-eutocia and dystocia, in: Johnston SD (editor). *Canine and Feline Theriogenology*, WB Saunders, Philadelphia; c2001. p. 105-128.
10. Ahuja AK, Singh AK, Narinder Kumar, Muddrangiah. Mummified Fetus and Two Live Fetuses in Labrador Bitch: A Special Case. *Int. J Curr. Microbiol. App. Sci*. 2017;6(7):1642-1644.