

ECLAMPSIA WITH METRITIS-MASTITIS-AGALACTIA COMPLEX IN A BOXER BITCH

N.A. Tufani, Abrar Ul Haq, K.A. Sofi, S.H. Dar, M.I. Yattoo and M.R. Fazili

Division of Veterinary Clinical Complex, Faculty of Veterinary Sciences and Animal Husbandry, Shuhama, SKUAST-Kashmir, Srinagar, India

[Received: 16.4.2019; Accepted: 07.10.2019]

{DOI 10.29005/IJCP.2019.11.2.111-113}

A case of 3 years old Boxer bitch was presented to Veterinary Clinical Complex with the history of inappetance and whelping of 8 pups out of which 2 were dead. Clinical observation and revealed typical signs of eclampsia (serum Calcium level 5 mg/dl) and metritis associated with mastitis and agalactia. Radiographic evaluation of uterus revealed no more foetuses and thickening of uterine wall. As per the above findings, the case was diagnosed as eclampsia with metritis-mastitis-agalactia complex. For the therapeutic management, bitch was treated with parenteral Calcium Sandoz mixed with dextrose normal saline, Vitamin D₃ as a single dose, Melonex (meloxicam) and injection ceftriaxone. The bitch was also treated symptomatically with Aciloc (ranitidine) and Perinorm (metoclopramide). Furthermore, the bitch was put on oral calcium therapy for a month and syrup Heptoglobin for 15 days. After a period of 5 days treatment, the bitch showed uneventful recovery.

Keywords: Agalactia, Bitch, Eclampsia, Hypocalcaemia, Mastitis, Metritis.

Eclampsia (puerperal tetany or postpartum hypocalcaemia) is a metabolic disorder of small to medium-sized bitches that are nursing large litters. It is an acute, life-threatening malady usually at peak lactation due hypocalcaemia in a lactating bitch (Hall, 2018). Occasionally also seen during gestation (Pathan *et al.*, 2011) and parturition and may precipitate dystocia (Hall, 2018). It can be precipitated by poor nutrition, hypoalbuminemia, high milk yield, and diseases of parathyroid glands (Pathan *et al.*, 2011). Bull dogs are predisposed to dystocia and sensitive to feeding during the pregnancy (Ivanova and Georgiev, 2018). Poor body condition can cause metabolic disturbances during pregnancy, impaired endocrine equilibrium, impaired placentation, uterine protein synthesis, increased neonatal deaths, eclampsia and low milk production after parturition (Kelley, 2002; Johnson, 2008).

Metritis in bitch, clinically characterised by lethargy, anorexia, decreased lactation, fever and malodorous vaginal discharge, is usually preceded by dystocia, contaminated obstetrical manipulations and retained foetuses and placenta (Davidson, 2016). Mastitis is septic inflammation of one or multiple mammary glands can be associated with metritis with agalactia. Some dogs exhibit pain, reluctance to nurse or lie down, anorexia,

lethargy and fever (Davidson, 2016). The present case report deals with the successful clinico-therapeutic management of eclampsia associated with mastitis-metritis-agalactia complex in a Boxer bitch.

Case History and Observations

Three years old Boxer bitch (25 kg) was presented to Veterinary Clinical Complex, Faculty of Veterinary Sciences and Animal Husbandry, Shuhama, Alusteng, SKUAST-K for treatment. Anamnesis revealed inappetance, vomiting and whelping of 8 pups in 3 consecutive days. Out of 8 pups, last two were born dead. The clinical signs observed were muscle tremors and cramping, disorientation, excessive panting, disinclined to move, pyrexia (106°F), tachycardia (160 beats/min) and tachypnea (62 breath/min). Radiographic examination revealed no more foetuses within the womb and thickening of uterine wall. Simultaneously the bitch showed clinical signs of metritis associated with mastitis and agalactia. There was hard, hot and painful swelling of one mammary gland (Fig.1) and putrid blood tinged discharge from uterus (Fig.2). Other mammary glands appeared normal, but revealed only few drops of milk letdown on stripping. The serum calcium level was recorded below normal (5 mg/dl). On the basis of clinical manifestation and low level of serum calcium the case was

diagnosed as eclampsia associated with metritis-mastitis-agalactia complex.

To manage hypocalcaemia the bitch was treated with Inj. Calcium Sandoz (calcium gluconate 50 mg + Elemental calcium 9 mg /ml) 20 ml mixed with 300 ml DNS through slow I/V route for 3 consecutive days and a single I/M Inj. of Arachitol (vitamin D₃) @ 20000 I.U/kg body weight. Inj. Melonex (meloxicam) 2 ml was given I/V for 3 days to manage pain and inflammation of mammary gland and uterus. Inj. Monocef (ceftriaxone) @ 25 mg/kg/day was administered I/V for a period of 5 days to

treat both metritis and mastitis. The bitch was also treated symptomatically with Inj. Aciloc (ranitidine) 1 ml I/M twice a day for 3 days and Inj. Perinorm (metoclopramide) 1.5 ml I/V twice a day for 3 days to manage gastritis and vomiting, respectively. Furthermore, the bitch was put on oral calcium therapy, syrup Ostocalcium pet 10 ml daily for a month and syrup Heptoglobin 10 ml orally twice daily for 15 days to maintain blood calcium level and to improve appetite and general health, respectively. The litter was removed from the mother for a period of 24 hours and fed by bottle.



Fig.1. Hard painful inflammation of udder (Mastitis)



Fig.2. Putrid blood tinged discharge from vagina (Metritis)

Results and Discussion

As treatment started, bitch showed dramatic clinical improvement by alleviating the clinical signs of hypocalcaemia. The clinical signs of metritis-mastitis-agalactia complex gradually subsided and almost became normal within 5 days. Thorough clinical check up revealed normal mammary gland, cessation of putrid discharge and normal basic clinical parameters. And animal started to eat normally and the milk production became normal.

Pre-treatment total serum calcium concentration <7 mg/dl confirms the diagnosis of eclampsia also reported by Hall (2018). Hypocalcaemia (serum calcium, 5 mg/dl) might contribute to ineffective myometrial contractions and slowed the progression of labour and therefore whelping process continued for last three days in agreement with Hall (2018). In the present study, poor nutrition and large litter size (8) was predisposing factors for hypocalcaemia.

Clinical manifestations observed were similar to those recorded by Hall (2018), where hyperthermia indicated severe form of the disease. Bitches affected with eclampsia tended to weigh loss, had a smaller body weight-to-litter size ratio, and higher rectal temperature, heart rate and respiratory rate as also recorded by Drobatz *et al.* (2017).

Most cases of hypocalcaemia do not require long-term therapy. Many cases require acute treatment, especially those with tetany, seizures, or muscle fasciculations as observed in the present case. For acute therapy, calcium should be administered intravenously over a period of 10-20 minutes. Unlike calcium chloride, calcium gluconate was preferred being not irritating if injected perivascularly. Calcium gluconate (10% solution, calcium 9.3 mg/ml) can be given at dosages of 0.5 to 1.5 ml/kg intravenously. About 5-10 ml of 10 percent calcium gluconate is sufficient for a bitch weighing between 5-10 kg to correct hypocalcaemia.

The effect of hypoglycaemia was managed with intravenous administration of 5% dextrose (DNS).

Conclusions

Eclampsia is common in small to medium-sized breed of bitch particularly with large litter size. Metritis-mastitis-agalactia may occur simultaneously associated with eclampsia. Therapeutic management of hypocalcaemia responded quickly with intravenous calcium. Metritis-mastitis-agalactia complex can also be managed with broad spectrum antibiotic and NSAID.

References

- Davidson, A.P.(2016). Pregnancy, parturition and periparturient problems in dogs and cats. In: S.J. Ettinger, E.C. Feldman and E. Cote (Eds). *Textbook of Veterinary Internal Medicine*. 8th edn. YN, Elsevier, New York, USA.
- Drobatz, Kenneth, J., and Kim, K., Casey. (2017). "Eclampsia in dogs: 31 Cases (1995-1998)." *J. American Vet. Med. Assoc.*, **217**: 216-219.
- Hall, J.A. (2018). Puerperal hypocalcaemia in small animals. MSD Veterinary Manual. Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc., Kenilworth, NJ, USA.
- Ivanova, G. and Georgiev, P. (2018). Pregnancy in the bitch– a physiological condition requiring specific care– review. *TMVM*, **3**(1)(4): 77–82.
- Johnson, C.A. (2008). Pregnancy management in the bitch. *Theriogenology*, **70**(9): 1412–1417.
- Kelley, R. (2002). Canine reproductive management: factors affecting litter size. *In: Proceedings of the Annual Conference of the Society for Theriogenology and American College of Theriogenology*, Pp. 291–301.
- Pathan, M.M., Siddiquee, G.M., Latif, A., Das, H., Khan, M.J.Z. and Shukla, M.K. (2011). Eclampsia in a dog: An overview. *Vet World*, **4**(1): 45-47.