PREPARTUM ECLAMPSIA INDUCED UTERINE INERTIA IN A DALMATIAN BITCH

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ABSTRACT

A ten years old Dalmatian bitch presented to Teaching Veterinary Clinical Complex, PGIVAS, Akola with the history of full term pregnancy with no signs of whelping. Clinical examination revealed elevated respiratory rate with protruding tongue and panting with continuous salivation. The bitch was restless with dull and depressed behavior. Muscular rigidity with occasional tremors, hyperthermia was observed. Per vaginal examination revealed closed cervix. The bitch was then subjected to biochemical examinations which revealed lower concentrations of serum calcium (5.1mg/dl) and serum phosphorus (2.5mg/dl). The values confirmed it to be a case of pre-partum eclampsia. The treatment included slow intravenous infusion of 10 ml of 10 per cent calcium gluconate, inj dexamethasone @ 0.04 mg /kg BW IM, inj Oxytocin @15 Units slow IV. As a result of treatment nine pups were delivered out of which three were dead.

Keywords: Eclampsia, bitch, uterine inertia

Introduction

Eclampsia also called as milk fever or puerperal tetany, is an acute and life threatening disease caused by lower blood calcium levels (hypocalcemia) in dogs. There is lesser documentation of hypocalcaemia in dogs and cats as compared to cattle (Rowland, 1972). Low blood calcium is the result of reduction of calcium levels outside the cells of the bitch's body. The disease develops within1-3 weeks after giving birth, although it may develop prior to birth or during lactation. It is more common in small breeds of dogs that have large litters (Drobatz and Casey, 2000). The present paper reports the prepartum eclampsia induced uterine inertia in a Dalmatian bitch.

Case history and observations

A 10 years old pluriparous Dalmatian bitch weighing 25 kg. was presented to Teaching Veterinary Clinical Complex, PGIVAS, Akola with the history of full term pregnancy around 65 days with no signs of whelping. Clinical examination revealed polypnoea (40 breaths/min) with protruded tongue on one side and absent licking movements. However, there was continuous salivation and bitch was restless with dull and depressed behavior. Muscular rigidity with occasional tremors was noticed. There was hyperthermia (105 °F), however temperature upto 107 °F is also not uncommon (Ettinger, 1983). Clinical examination revealed distended abdomen with engorged mammary glands. On pervaginal examination the cervix was found to be closed. After through history of poor calcium input, careful investigation and correlating with the clinical signs of panting, shaking all over and inability to stand, the condition seemed to be the case of eclampsia. The blood serum sample subjected to biochemical analysis revealed lower concentration of serum calcium (5.1 mg/dl) and serum phosphorus (2.5 mg/ dl) level. These values confirmed the case of pre-partum eclampsia in bitch and need for instant supplementation of calcium.

Treatment and Discussion

Low blood calcium levels interfere with muscle function throughout the body, causing general weakness, loss of appetite and eventually heart failure (Somkuwar *et al.,* 2013). On pre whelping time, there is an immediate demand for large amounts of calcium in colostrum. Therefore, calcium must be mobilized from bone to meet calcium needs. Treatment of hypocalcaemia generally involves calcium injection by intravenous, intramuscular or subcutaneous routes (Goff and Horft, 1993). Inntake of calcium from the diet will not meet this sudden demand, hence the first most treatment adopted in present case included 10 per cent calcium gluconate @ 10 ml by slow intravenous route. To prevent myocardial depression or cardiac arrest inj. dexamethasone @ 0.04 mg/kg b.wt. was administered intramuscularly soon after the infusion of calcium gluconate. Within fifteen minutes of the administration the bitch responded well to the therapy by disappearing muscular tremors and limb rigidity, restoring the eyeball reflexes, retracting the protruded tongue and reduced panting. Half an hour after the infusion bitch tried to sit and walk but the gait was ataxic. Keeping in view the promising response to calcium treatment another shot of 5 ml calcium was again given slowly by intravenous route, which lead to almost recovery of the bitch within one and half hour after the second injection. Supportive treatment included administration of inj. ceftriaxone 500 mg intramuscularly.

First pup whelped normally with assisted delivery (Fig. 2). Second pup was found to be dead in vaginal passage causing obstruction of passage. An intravenous injection of 15 units of oxytocin along with 200 ml of 5 per cent dextrose was given following which the second foetus was expelled out. After assisted delivery of three pups, bitch was found to be exhausted leading to secondary uterine inertia. Secondary uterine inertia was treated by giving 250 ml of 5% dextrose

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Fig. 1: Delivery of pup (dead) by manual traction

Fig. 2: Live foetus delivered by traction

Fig. 3: Bitch after whelping with live pups

along with 4 ml of 10 per cent calcium gluconate by slow intravenous route which resulted in whelping of four more pups normally.

An ultrasonographic examination was then performed to re-examine uterus condition and surprisingly, two more pups were still detected in the uterus. These two pups (dead pups) which were present in the uterus were removed manually by lubrication and slight traction (Fig. 1). Altogether nine pups were removed out of which three were dead (Fig. 3). The bitch was then discharged and advised antibiotic therapy of inj ceftriaxone 500 mg IM in order to subside the chances of infection during handling, inj cadistin 2 ml to correct the eclamptic toxaemia for next five days and syp. Provical Pet as oral calcium supplement.

The failure of whelping to progress in this particular case even after the average gestation period (63 days) could be due to low levels of total or ionized serum calcium which leads to ineffective uterine contractions which is in agreement to Johnston, (1986). In mammals, giving birth and milking taxes the calcium stores of the body. Calcium allows the uterine muscles to slide past and shorten, resulting in effective uterine contraction. Low blood calcium leads to ineffective contractions and nervousness, often resulting in puppy loss. The bitch will pull calcium out of the foetal bones to augment her need. In late pregnancy, the pregnant dog's demand for calcium begins to increase with the fetal demand and mammary gland development. The parathyroid gland requests calcium from the bone to supplement calcium levels as is needed. This demand for calcium spikes at whelping and lactation and continues to increase, till the puppies are two weeks of age. Some clinicians prefer using cortico-steroids in addition to calcium and vitamin D. Administration of steroids like Prednisolone (2.5 mg tablet BID for 3 days followed by 1.25 mg tablet BID for 3 days and then 1.0 mg tablet BID for 7 days) has also been advocated for the treatment of Eclampsia (Chakraborty, 2006). Oral administration of calcium or vitamin D supplements may be of benefit after the initial intravenous treatment. In this particular case dexamethsone was administered to induce whelping in conjunction with calcium therapy.

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