A rare case of single pup syndrome and its management in a Labrador bitch


Department of Veterinary Gynaecology and Obstetrics, Veterinary College and Research Institute, Tirunelveli-627 358, India.

Received: 10-06-2015 Accepted: 05-01-2016 DOI:10.18805/ijar.v0iOF.6817

ABSTRACT

The intricate way of parturition in bitches is initiated by luteolysis in response to cortisol released by the fetuses in utero. Failure of luteolysis always associated with small litters and often leads to dystocia. The present case report documents an unusual case of single pup syndrome in a two year old Labrador bitch carrying single fetus. This syndrome has occurred at its first whelping wherein the dog made futile attempts to deliver the fetus, which has eventually become unproductive. Hence, cesarean section was indicated to save the life of the fetus and to preserve the welfare of the dam.

Key words: Bitch, Dystocia, Single pup syndrome.

Single pup syndrome is the rare cause of primary uterine inertia in polytocous species (Jackson, 2004). It can occur in any breeds of dog. However; higher incidence is said to occur in Scottish terrier; the present case report explicates about the atypical syndrome in a Labrador bitch carrying fetus beyond the gestation length and failed to deliver the fetus. Scrutiny of few published reports revealed single pup fails to produce adequate levels of cortisol to initiate the whelping process.

Case history and observation: A 2 year old Labrador bitch was presented with the anamnesis of failure to whelp on the expected day and carrying beyond the gestation length (63 days +/-1). The bitch had undergone series of ultrasound examination on day 20 and 45 which evidenced the presence of viable single fetus. The bitch was presented on day 64 with no evidence that whelping was imminent; however, there was a brownish mucus discharge hanging out of vulva. The animal went anorectic and was showing signs of futile abdominal straining.

Clinical examination: At presentation the bitch was bright, body condition was 4/5 with abdominal enlargement consistent with pregnancy. The physiological parameters were within the normal limits. The fetal viability was corroborated using pulse wave color doppler. Digital vaginal examination failed to identify any pups or fetal membranes in the birth canal.

Treatment and discussion: Medical management was attempted to relieve the fetus with intravenous infusion of Inj Oxytocin 5 units, Dextrose (25%) 100 ml, Inj. Calcium gluconate @ 0.5 ml/kg body weight (10%) and Inj. Ceftriaxone 500mg followed by cervical feathering (Linde-Forsberg and Eneroth, 2000; Pretzer, 2008); however, animal failed to respond for the composite therapy, hence caesarean section (C.S) was opted to save the life of the fetus (Fig 1-5). Single live fetus at the ovarian end was delivered through ventral midline celiotomy as per the standard procedure (Trass, 2008). As a post-operative management animal was administered with Tab. Ceftriaxone 500 mg twice daily and parenteral fluid therapy.

Fig 1: Pre-operative preparation

*Corresponding author’s e-mail: ganvet43@gmail.com

1Department of Veterinary Gynaecology and Obstetrics, Veterinary College and Research Institute, Tirunelveli.

2Teaching Veterinary Clinical Complex, Veterinary College and Research Institute, Tirunelveli.

3Department of Veterinary Surgery and Radiology, Veterinary College and Research Institute, Tirunelveli.

4Department of Veterinary Medicine, Veterinary College and Research Institute, Tirunelveli.
Fig 2 (a) & (b): Gravid horn evidencing single fetus

Fig 3: Single pup delivered from exteriorized gravid horn

Fig 4: Surgical closure of gravid horn

Fig 5: Surgical closure of laparotomy site

CONCLUSION
Initiation of parturition in the bitches is as a result of rapid decline in progesterone, the decline in progesterone occurs due to luteolysis in response to increasing prostaglandin levels released from placental tissue owing to the glucocorticoid release from the fetus. This release of cortisol from the fetus is facilitated by maturation of the fetal hypothalamic-Pituitary-Adrenal axis and is stimulated by increasing ‘stress’ of the fetus possibly due to reduction in nutritional support through the placenta. The failure of a single fetus to induce parturition mechanism after or before the expected date of gestation owing to its reduced concentration of cortisol secreted. It has been hypothesized that it is insufficient to initiate luteolysis via prostaglandin-glucocorticoid pathway (Verstegen-Onclin and Vertegen, 2008). Insensitivity of the myometrium to medical management in the present report was inability to initiate segmental contractility owing to the presence of foetus at ovarian end. It can be concluded that for small litters often in the presence of single fetus, caesarean section must be the prime priority to avoid fetal death and to preserve the welfare of the dam (Ryan and Wagner, 2006).

ACKNOWLEDGEMENT
The authors thank The Director of Clinics, TANUVAS and The Dean, VCRI, Tirunelveli TANUVAS for the facilities provided to conduct the present study.
REFERENCES