

**DYSTOCIA DUE TO SINGLE PUP SYNDROME IN A ROTTWEILER SHE DOG: A CASE REPORT**

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**SUMMARY**

This case report deals with the successful handling of uterine inertia due to single puppy in a Rottweiler she dog in her second parity. This case was presented with the history of mating approximately 70 days before and failure to deliver on the expected day of whelping. On per vaginal examination, greenish discharge was observed, however no foetal parts were felt in the passage. Abdominal ultrasonography was performed to assess foetal viability, which showed absence of heartbeats and body movements of foetus. Radiographic examination revealed the presence of single fully-grown foetus *in utero*. This case was successfully treated with oxytocin and other systemic therapy for prompt whelping process.

**Key words:** Female dog, Oxytocin, Single pup syndrome, Uterine inertia

Dogs are polytocous species with an average litter size ranging from three to seven (Suresh, 2018). However, there may be presence of single foetus which is also called as Singleton puppy syndrome. A single puppy can cause several problems at the time of whelping; hence this condition is considered as a high-risk factor. In single pup syndrome, there may be inadequate cortisol release from the foetus to initiate PGF<sub>2α</sub> release by the endometrium, which initiates CL regression and whelping (Jayakumar *et al.*, 2017). Thus, uterine inertia due to single pup syndrome can lead to dystocia in dog. Once the foetus exceeds its due date, it will demand more nutritional support than the actual capacity of placenta, resulting in foetal death in utero (Jayakumar *et al.*, 2017). There are several etiological factors responsible for Singleton puppy syndrome, which include breeding of older animals, death of embryos during early gestation and resorption of embryos before mineralization (Domoslawska, 2011). Recent literature shows that, the failure to initiate delivery of single puppy in canine pregnancy may be due to insufficiency of ACTH and cortisol (Sridevi, 2015; Ganesan *et al.*, 2016)

A 5-year-old Rottweiler she dog in her second parity was presented to Teaching Veterinary Clinical Complex of Krantisinh Nana Patil College of Veterinary Science, Shirwal, Satara with the history of mating 70 days ago and failure to deliver on expected date despite of nesting behaviour. Clinical examination revealed restlessness, inappetence and presence of greenish discharge in vaginal passage. Furthermore, temperature was 100.6°F, with heart rate of 80 beats per minute with tachypnoea. Engorged mammary glands were also observed during course of examination. No foetal parts were felt in the birth canal. For further assessment, trans-abdominal ultrasonography was performed which revealed existence of single foetus in the uterus with absence of heartbeats and body movements (Fig. 1). Colour Doppler ultrasonography indicated absence of fetal heart beat which confirmed the non-viable status of the foetus. Furthermore, head diameter was 3cm which

indicated that the gestation was completed. A lateral abdominal radiography was performed which confirmed the presence of single fully-grown foetus in the uterus (Fig. 2). On the basis of clinical, ultrasonography and radiographic findings the case was diagnosed as uterine inertia due to singleton puppy syndrome in a she dog.

The medical treatment was commenced with slow intravenous drip of Inj. Oxytocin (Pitocin: 10 IU) IV, Inj. Dextrose 10 % (IndiaMart: 100 ml) IV and Inj. Calcium Sandoz 10 % (NOVARTIS;10 ml) IV. The owner was



Fig. 1: Ultrasonographic imaging of dead foetus



Fig. 2: Radiograph of single pup *in utero*

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Fig. 3: Dead fetus delivered after oxytocin therapy

advised to wait for next 24 hours for expulsion of foetus. However, the she dog failed to respond for initial treatment. So, next day same treatment was repeated and after half an hour of treatment, one dead foetus was delivered (Fig. 3). Animal was put on antibiotic therapy after whelping with Inj. Cefotaxime @20mg/kg B.W. IM for 3 consecutive days. Owner was advised to keep animal on E-collar and to drain off the milk from the gland along with application of vinegar to the mammary gland to avoid further licking. After scanning available literature, it revealed that most of these cases related to single pup

syndrome in she dogs were treated with elective surgery (Ganesan *et al.*, 2016; McLean, 2012). However, this case was successfully handled with medical treatment. Thus, from present study, it may be concluded that uterine inertia due to single puppy can be diagnosed through appropriate diagnostic tools like ultrasonography, radiography and medical treatment with oxytocin and fluid therapy.

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