CASE REPORT

Removal of Eleven Live Puppies through Caesarean Section due to Complete Primary Uterine Inertia in a Saint Bernard Bitch

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Canine pregnancy, like other polytocous species, undergoes several challenges during gestation and whelping due to multifactorial reasons like hormonal changes, prolonged whelping process, nursing, and subsequent uterine involution. Another factor which drives canine pregnancy as a challenge is the presence of multiple foetuses *in utero* which demands continuous yet consistent contractile forces to expel them (Arlt *et al*., 2023). These multiple foetuses predispose the dam to uterine inertia which denotes the lack of contractile forces in the uterine musculature. The primary uterine inertia is the inherent lack of contractile forces and is referred as the cause of dystocia whereas the secondary uterine inertia, which is due to exhaustion and fatigue of uterus resulting in abnormal and ineffective forces, is the result of dystocia. Between these two the primary uterine inertia accounts 40-70% of maternal factors related dystocia cases (Darvelid and Linde-Forsberg, 1994). The incidence of primary uterine inertia is high in bitches and there are various factors which predispose this condition like hormonal imbalance, age, litter size, genetic predisposition etc (Davidson *et al*., 2011). Primary uterine inertia is further subdivided into two classifications naming partial and complete primary uterine inertia. The partial one results after the initiation of normal labour followed by delivery of one or few puppies but fail to deliver full litter owing to abrupt cessation of myometrial contraction. On the contrary, in the complete primary uterine inertia, the second stage of whelping fails to occur resulting in dystocia (Balamurugan *et. al*., 2024). This paper reports successful removal of eleven live puppies post-exploratory laparotomy due to complete primary uterine inertia in a bitch.

Case History and Observations

A five years old Saint Bernard bitch was presented to the Teaching Veterinary Clinical Complex of Faculty of Veterinary and Animal Sciences, BHU, Barkachha, Mirzapur (India) with the history of difficulty in whelping since last few hours. The animal was slightly dull, depressed and exhausted along with distended abdomen as per the physical examination. Upon clinical examinations, the vital parameters were found to be within normal physiological range. The per-vaginal examination revealed no foetus(s) in the birth canal.

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Blood sample collected after saphenous venepuncture for haemato-biochemical evaluation revealed normal haematology and liver-kidneys function (Table 1). The animal was subjected for X-ray examination to rule out exact number of fetuses which revealed eleven numbers of pups (Fig. 1A). Based on history, physical examination, laboratory findings, the case was diagnosed as complete primary uterine inertia and was immediately referred for Caesarean section.

Treatment and Discussion

The bitch was pre-medicated with inj. Glycopyrrolate @ 0.02 mg/kg b.wt., IM followed by induction and maintenance with 2 to 5% isoflurane. The surgical site was prepared aseptically with betadine followed by 70% ethanol and mid-ventral area approach was taken for laparotomy. In the ensuing stages, the skin, fascia, abdominal muscles and peritoneum were incised in the standard routine manner, following which the uterus was explored. Eleven live puppies were removed from both the uterine horns after incising the body of the uterus (Fig. 1B) followed by irrigation of the uterus with normal saline and metronidazole. The uterus was sutured with Cushing suture pattern followed by the Lembert using absorbable catgut size 1-0. The peritoneum and abdominal muscles and skin were sutured using standard technique and materials. At the culmination, a protective bandage was applied. Post-

operatively, the bitch was treated with Inj. Cefotaxime @ 50 mg/ kg b.wt., slow I/V and inj. Melonex @ 0.25 mg/kg b.wt., IM for 5 days along with supportive therapies. Skin sutures were removed after 12 days. The bitch had an uneventful recovery.

Pregnancy and parturition are two unique yet remarkable physiological phenomena where the dam undergoes severe challenges ranging from physiological, hormonal, environmental and several other factors. These factors largely govern the whole process and lack of synergy among these factors render the animal to dystocia or other life-threatening situations. These factors make the dystocia as an emergency condition in bitches and it can be life-threatening for both the dam as well as the foetuses (Noakes et al., 2019). The most common cause of maternal dystocia in the bitch is primary uterine inertia (Darvelid and Linde-Forsberg, 1994), which could be either complete or partial. In the present case, the animal was suffering from complete primary uterine inertia where the animal had not delivered a single foetus and the physical examination along with X-ray examination revealed distended abdomen with multiple fetuses, suggesting complete primary uterine inertia. As dystocia is a life-threatening condition, immediate attention must be given in order to save the dam along with the fetuses. In general, the canine dystocia should be treated as emergency owing to its life-threatening nature for both the dam and the fetuses. In this a Saint Bernard bitch suffering from complete primary uterine inertia was treated successfully by removing eleven life puppies through C. Section.

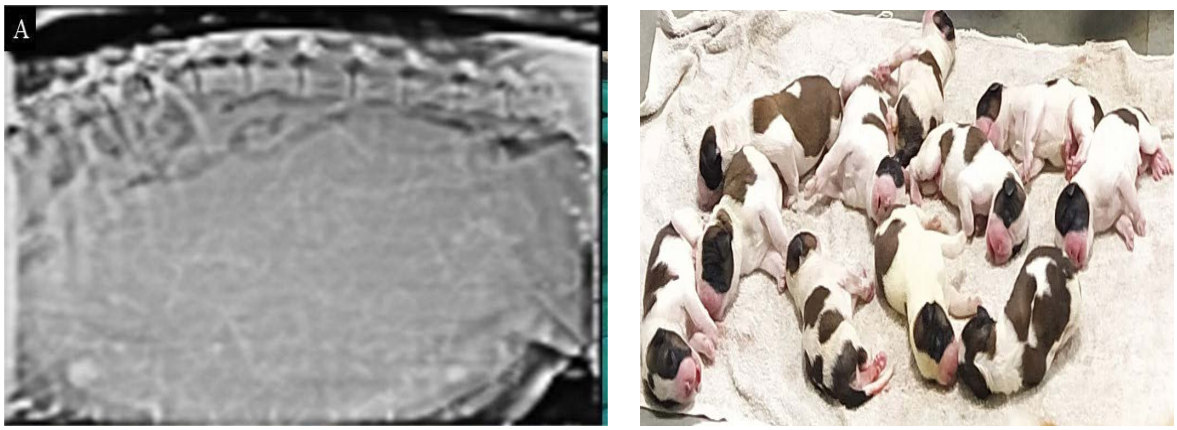

Fig. 1: (A) Radiograph of a 5 years old pregnant Saint Bernard bitch suffering from complete primary uterine inertia, and (B) Removal of the eleven live fetuses by Caesarean section

Table 1: *Haematological and serum biochemical analysis of* the bitch presented

Laboratory Investigation	Parameters	Value
Haematology analysis	Hb	11.4 gm%
	PCV	35.0 %
	TEC	4.86 M/mm3
	TLC	9.5 TH/mm3
	Neutrophils	77.8 %
	Lymphocytes	19.6 %
	Monocytes	2.6 %
	Eosinophils	0.01 %
	Platelets	445 TH/mm3
Liver Function Test	Albumin	1.96 gm %
	Total protein	7.58 gm%
	Direct bilirubin	0.04 mg%
	Indirect bilirubin	0.03 mg%
	Total bilirubin	0.07 mg %
	SGOT/AST	22.2 IU/L
	SGPT/ALT	20.3 IU/L
	LDH	112 U/L
	ALP	95 IU/L
Kidney Function Test	Blood urea	44.2 mg %
	BUN	21.12 mg %
	Serum creatinine	0.70 mg%

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