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## An unusual cause of secondary uterine inertia due to fetal anasarca in a Labrador bitch

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#### Abstract

A three years old pluriparous Labrador bitch presented to the Department of Veterinary Gynaecology and Obstetrics, Hebbal, Bengaluru clinics with history of greenish vaginal discharge and whelped two stillborn fetuses 24 hours later. Trans-abdominal ultrasonography and abdominal radiography was utilized to diagnose viability and number of fetus present *in-utero*, respectively. The case was confirmed as dystocia due to secondary uterine inertia because of large size of fetus obstructed in the vaginal passage. Caesarean section performed to deliver the dropsical fetuses. In conclusion, relative oversize of the fetus creates fetomaternal pelvic disproportion and decreases the options for per-vaginal delivery because of large size of fetuses. C-section found to be the best choice to save the life of the dam.

**Keywords:** Bitch, caesarean, fetal anasarca, obstruction, secondary uterine inertia

#### Introduction

Dropsy of the fetus is more common in fetuses of cow, buffalo, goat and sheep, but very rare condition in small pet animals such as canines and felines<sup>[1,2]</sup>. Dropsy of fetuses include, fetal ascites, hydrocephalus, anasarca and hydrothorax. Among the dropsical condition of the fetus, anasarca was rarely encountered in canine<sup>[2]</sup>. Fetal anasarca characterized by an increase in the fetal volume due to generalized subcutaneous edema and fluid accumulation throughout the body and termed as water baby or walrus baby<sup>[3]</sup>. Fetal anasarca may be in one pup or the complete litter. The relative oversize of the affected fetus is prominent compared to normal pups, they often result in fetal dystocia and culminate to high infant mortality<sup>[4,5]</sup>. The present report describes the diagnosis of fetal anasarca in bitch and its surgical management.

#### Case history and clinical observation

A three years old pluriparous Labrador bitch presented to the Department of Veterinary Gynaecology and Obstetrics, Hebbal, Bengaluru clinics with history of crossed 64 days back, showing greenish vaginal discharge and whelped two stillborn fetuses 24 hours later. Continuous straining was exhibited by the dam, but no progression in expulsion of remaining fetuses. All the vital parameters were within the normal physiological range, except mild degree of dehydration. Per vaginal examination revealed that large size of fetus obstructed in the pelvic cavity. Large size three dead fetuses with absence of heart beat was visualized in trans-abdominal ultrasonography. Three fetal skeletons were confirmed with abdominal radiography. The case was confirmed as dystocia due to secondary uterine inertia. Vaginal delivery of fetus was difficult because of large size of fetuses even forceps delivery. Obstruction of pelvic cavity with large size fetus therefore performed C-section to deliver the fetuses.

#### Treatment and Discussion

Dam was stabilized with Inj: Dextrose normal saline (200 ml, i/v) and Ringers lactate (200 ml, i/v). Dog was premeditated with Inj. Atropine sulfate (0.04 mg/kg, s/c) and Inj: Diazepam (0.5 mg/kg, i/v). Caudal-ventral surgical area was prepared aseptically. Induction of anesthesia achieved by administration of Propofol (3.0 mg/kg, i.v) and maintenance of anesthesia with Propofol (0.2 mg/kg/min i.v) until completion of surgical procedure. Gravid horns were exteriorized after laparotomy and three dead fetuses were removed carefully from the uterine horn through the incision on uterine body. Uterine incision was closed by Lambert's followed by Cushing's suture pattern using chromic catgut No 2-0, muscles and peritoneum sutured

with continuous interlock stitch pattern using Vicryl No-0. Subcutaneous suture was performed by continuous suture pattern using Vicryl No-0, and skin was opposed with Trulon No-0 by horizontal mattress suture pattern.

One was small sized dead fetus, with a bodyweight of 110 gm, and the remaining two dead fetuses were with a bodyweight of 310 gm and 325 gm, respectively had generalized soft tissue edema with serous fluid accumulation within subcutaneous space and also in the visceral cavities [Figure 1]. Collectively, the case was concluded that secondary uterine inertia due to fetal anasarca. The dam was administered with Inj. Meloxicam (0.2 mg/ kg, s/c), Inj. pantoprazole (1 mg/kg, p/o) for 2 days, cephalixin [25mg/kg, p/o] and oral mineral and vitamin supplementation for 10 days post-surgery. Surgical wound was completely healed by day 10 and skin sutures were removed. As the pet recovered uneventfully.



**Fig. 1:** Anasarca fetus in a bitch showing increased subcutaneous edema

Fetal anasarca is an inborn fetal monster resulting from failure of fluid and circulatory homeostasis in a developing fetus and moreover failure of expression of genes which are responsible for fluid homeostasis during period of embryo [6]. Similarly, the present case also recorded two large sized fetus due to generalized accumulation of fluid in the fetuses and increased in body weight. Etiological factors responsible for fetal anasarca in each species is debatable, but no specific etiology has been explained for development of fetal anasarca canines. Earlier, Allen *et al.* (1989) [7] diagnosed the fetal anasarca using ultrasonography in late gestation and performed C-section to deliver the anasarca fetuses along with normal fetuses. Recently, Sridevi *et al.* (2016) [2] recorded single large non-viable fetus having increased subcutaneous edema and serous effusions and delivered through mid-ventral laparo-hysterotomy. The causes of fetal anasarca have been hypothesized as cardiac abnormalities (Heng *et al.*, 2011) [8] and genetic makeup of fetus [9]. Robertson *et al.* (1979) [10] reviewed that drug therapy (Aspirin, Depomedrol and Triamcinolone), exposure to viral infections (Adenovirus or Parvovirus) or mechanical (myocarditis, malformation involved in the blood vessels and lymphatics). However it has been reported that breed predisposition (English Bulldogs, Pugs, French Bulldogs, Pekingese and Boston Terriers) is the major factor responsible for development of hydrops fetalis in canine [2, 11]. But, the present case documented hydrops fetalis

in a Labrador bitch. Hopper *et al.* (2004) [5] opined that fetal anasarca was commonly encountered in primiparous bitch but, in the present case documented fetal anasarca in pluriparous bitch.

### Conclusion

In conclusion, hydrops of the fetus (relative oversize) causes fetomaternal pelvic disproportion culminate to dystocia (predisposed for secondary uterine inertia). Per-vaginal delivery of such fetuses was difficult because of large size. C-section was found to be the best choice to save the life of the dam.

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