CASE REPORT

Fetal Anasarca in Himalayan Sheepdog

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Ind J Vet Sci and Biotech (2022): 10.21887/ijvsbt.18.1.29

Fetal anasarca (dropsy of fetus) is a congenital anomaly, grossly characterized by an increase in the fetal volume due to excessive fluid build-up under the cutaneous layer (subcutaneous tissue). Particularly the head and hind limbs are involved, with concurrent accumulation within the peritoneal and pleural cavities (Noakes *et al.*;, 2001). "Congenital edema," "hydrops fetalis" or "walrus syndrome" are other terms used for fetal anasarca. These pups anatomically resemble hippos and walrus and thus are called water puppies and walrus puppies. As they are more prominent compared to normal pups, they often result in dystocia due to fetal oversize and lead to high infant mortality (Hopper *et al.*, 2004; Monteagudo *et al.*, 2002). Pups affected with fetal anasarca may be one or the complete litter. Anasarca is common in large and small ruminants, but rare cases in small pet animals such as canines and felines (Prabaharan *et al.*, 2016) are reported. Canine breeds predisposition to fetal anasarca is reported in English bulldog, French bulldog, and Pugs. Studies have suggested the use of diuretics such as thiazide as the primary treatment for congenital edema like anasarca in the fetus (Hopper *et al.*, 2004; Hoskins, 2008) with only limited success**.**

Case History and Observations

An 18 months old primiparous Himalayan sheepdog bitch who had completed its gestation was presented to the Department of Veterinary Gynaecology and Obstetrics at teaching veterinary clinical complex (TVCC), Pantnagar, with a history of whelping two stillborn pups two days ago and straining that had arrested 24 hours later. Per-vaginal examination revealed an open cervix with no fetal structure palpable. Four fetal skeletons were confirmed with abdominal radiography. The haematological and serum biochemical parameters were within the normal range.

Treatment and Discussion

Dystocia was conclusive, and a cesarean section was performed under general anesthesia with a midline approach along the alba line. Atropine sulfate was administered at the dose rate of 0.022 mg per kg body weight intramuscularly, and Xylazine (1 mg/Kg body weight) was given intramuscularly as pre-anesthetic medication. Induction with injection Ketamine (5 mg/kg body weight) intravenous. Anesthesia was maintained by injecting Ketamine (5 mg/kg body weight)

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How to cite this article: Mahajan, M., Prasad, S., Singh, V., Arya, D. (2022). Fetal Anasarca in Himalayan Sheepdog. Ind J Vet Sci and Biotech. 18(1), 127-128.

Source of support: Nil

Conflict of interest: None.

Submitted: 30/03/2021 **Accepted:** 12/12/2021 **Published:** 10/01/2022

Figure 1: Photograph showing normal (top three) and anasarca fetus (bottom/red arrow)

and Diazepam (0.5 mg/kg body weight) by intravenous route. Four fetuses (Figure 1) were delivered by cesarean section from the uterus. One was live, with a bodyweight of 124 gm, and the remaining three were stillborn with body weight 134 gm, 130 gm and 304 gm respectively. The fetus with a body weight of 304 gm had generalized soft tissue edema with serous fluid accumulation within visceral cavities and was placed posteriorly in the uterine body. This oversized fetus with subcutaneous edema was diagnosed as fetal anasarca/ hydrops fetalis. The dam was administered with Inj. Ceftriaxone@ 20 mg/kg (Intacef®), Inj. Meloxicam @ 0.5 mg/kg (Melonex®), Inj. pantoprazole @ 1 mg/kg(Pantop®) twice daily for 3 days and oral mineral and vitamin supplementation (Health up Pro®) for 7 days as post-operative care.

Fetal anasarca is an inborn fetal anomaly resulting from failure of fluid homeostasis in a developing fetus (Lumbers *et al.,* 2001). The current case presented a fetus with anasarca characterizing enlarged body size and weight. Fetal anasarca in each species is described to be caused by various factors, but no specific etiology has been explained for canines. The most frequently the cause in inborn puppies for fetal anasarca is reported to be cardiac abnormalities (Heng *et al.,* 2011). Simultaneously, genetic predisposition (Monsef *et al.,* 2020), infectious and traumatic etiology plays a crucial role in cases diagnosed with canine hydrops fetalis. Breed predisposition is recorded in English Bulldogs, Pugs, French Bulldogs, Pekingese, and Boston Terriers (Sridevi *et al.,* 2016). As fetal anasarca is commonly reported in primiparous bitches (Hopper *et al.,* 2004), parity of dam is a determinant factor for fetal anasarca leading to dystocia in the current case. The use of furosemide is effective in managing live anasarca pups (Hoskins, 2008).

Fetal anasarca is an inborn defect, leading to dystocia in a dam. It was recorded that out of the six fetuses, a fetus with anasarca resulted in dystocia due to obstruction in the normal passage to the other fetuses in the queue during whelping. Timely diagnosis and Cesarean section could save the life of dam along with the fetuses.

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