Water babies

Fetal anasarca, also commonly referred to as “water baby”, or “walrus baby”, is when a fetus has generalized subcutaneous edema and fluid accumulation throughout the body. Often the pup is twice the normal size causing dystocia and necessitating C-section. There are degrees of affliction, mild, moderate and severe. The term “anasarca” can refer to any condition where an animal (or human) has a buildup of subcutaneous (under the skin) fluid and edema (fluid accumulation in other areas of the body). So when researching the topic it is important to be certain that the material is specifically addressing **fetal anasarca**. The condition may only involve one pup in a litter, or may involve two or three. Less commonly it will be seen in a whole litter.

Disturbances of circulation in **adult** animals can result in generalized edema, also called anasarca, and can be caused by right-sided heart failure, liver disease, and chronic kidney disease. One of the mechanisms causing this condition is sodium retention. Because of this, often a low sodium diet is recommended. This application is specific to anasarca in an adult animal, and not applicable to fetal anasarca. On the contrary, it is recognized that diets deficient in sodium can cause reproductive problems ranging from infertility to abortion. Sodium restriction activates the body’s Renin-Angiotensin-Aldosterone system (RASS), which regulates blood pressure, and may contribute to kidney dysfunction. Additionally, restricted sodium makes the diet unpalatable, which is dangerous for pregnant animals, especially in the last 3 weeks before whelping.

There is some chance that the mildest cases of fetal anasarca in a newborn will respond to supportive care. Moderately and severely affected pups will not generally survive. As soon as they must breathe for themselves, fluid begins to fill the lungs and they drown.

There is a strong indication of genetic predisposition, as several breeds have a demonstrably higher prevalence of anasarca puppies. Among these breeds are Bulldogs, English Bulldogs, French Bulldogs, Boston Terriers, and Pugs. Almost all breeds have been noted to have water babies, but at a considerably lower prevalence rate. The specific genetic basis has not been definitively documented as yet.

Besides the potential genetic cause, there are infectious agents and some drugs that have been documented to cause fetal anasarca.

Infectious Canine Hepatitis caused by Adenovirus – 1 has been proven to cause fetal anasarca in dogs. The infection causes hemorrhaging from small blood vessels so that infected dogs bleed easily. In the infection of an adult dog there may be subcutaneous edema of the head, neck and trunk. The virus damages the walls of blood and lymph vessels in the fetus and the placenta, leading to fluid seepage into the subcutaneous spaces. The Adenovirus – 2 virus used in vaccines is cross protective for type 1 as well. A well constructed vaccination protocol will prevent this infection in kennels.

Minute Virus of Canines (MVC, Canine Parvovirus Type -1, CPV-1) is another virus that has been proven to cause fetal anasarca as a result of the dam being exposed to the virus

during mid-pregnancy. CPV-1 has been shown to be genetically closer to the bovine parvovirus than to any other mammalian parvoviruses. Dogs are the only species susceptible to CPV-1. The virus is transmitted transplacentally if the dam is infected between day 20 and day 35 of the pregnancy. Besides fetal anasarca, the virus can also cause abortion and puppy deaths. In the US, serologic tests indicate that the virus is relatively widespread in the general dog population. There is not currently an effective vaccine against CPV-1, and commercial vaccines for Canine Parvovirus 2 are not cross-protective. Preventing the disease is accomplished primarily through a sound bio-security program.

Aspirin has been documented to cause malformations in pups from dams treated with the drug between days 23 to 30 of the pregnancy. Anasarca is one malformation seen, as well as cleft palate, cardiovascular abnormalities and tail anomalies. Aspirin is a commonly a component in Kaopectate, bismuth and Pepto-Bismol.

Another family of drugs, corticosteroids, has resulted in congenital anomalies including deformed forelegs and fetal anasarca if administered to the dam during pregnancy. Depo-medrol and Triamcinolone are two of the drugs in this family known to cause this problem.

Mechanical causes of anasarca are anemia, impaired heart function and myocarditis, malformed blood vessels, low blood protein levels, malfunction of the lymphatic system, and vasculitis (inflammation of blood and lymph vessel walls), which in the case of the fetus can include the placental vessels. In each of this situations fluid seeps from the blood vessels, and settles in the subcutaneous tissues. Inadequate cardiovascular function prevents the body from eliminating the excess fluid.

Pregnant dogs normally develop anemia as their pregnancy progresses. The normal red blood cell count may drop 25% by the last week of gestation. This impacts the blood/fluid balance in the fetuses as well. If a bitch is anemic prior to pregnancy, this will exacerbate the normal anemia occurring in gestation.

Ultrasound can reveal fetal anasarca. In the event it is diagnosed, C-section surgery can be planned to prevent certain dystocia, and improve survivability of litter mates.

When water babies occur, the possible causes may involve genetics, drug therapy, virus exposure, or congenital malformations of the cardiovascular and lymph systems. Owners should review their use of medications, breed history, vaccination protocol, and potential exposure to the Minute Virus. Diagnosis of the Minute Virus can be difficult and should involve a veterinary medical laboratory for serology and histology.

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