Foetal Anasarca

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OPEN ACCESS

Keywords

Foetal anasarca, Cattle, Autosomal recessive gene, Sodium retention

How to cite this article:

Devi, N. B., Devi, G. T., Devi, K. M. and Singh, C. V. 2023. Foetal Anasarca. *Vigyan Varta* 4(5): 23-26.

ABSTRACT

Foetal anasarca was also known as Hydrops foetalis, Walrus baby, or water baby. Although it can happen in sheep, severe foetal oedema, also known as foetal anasarca, is more common in cattle. It can happen to either a twin or a single foetus. It is also unusual in one or two pigs or carnivores from a litter. An autosomal recessive gene is the reason. Foetal anasarca was brought on by infectious agents that affect dogs, such as canine parvovirus type 1 (CPV type 1) and infectious canine hepatitis (Adenovirus - 1). Circulatory abnormalities in mature animals can lead to anasarca, a widespread oedema. Chronic kidney disease, liver disease, and right-sided heart failure are all potential causes. It may be brought on by sodium retention in terms of ions.

INTRODUCTION

A foetus with foetal anasarca has subcutaneous fluid and oedema in various parts of the body. The animals are frequently twice their usual size, resulting in dystocia (second stage labour) and necessitating a C-section. There are various levels. Mild, moderate, and severe are the three levels of severity. There is often an excess of fluid in the peritoneal cavity and pleural cavity, as well as dilatation of the umbilical and inguinal rings. During delivery, numerous incisions are performed over the foetus's body to drain the fluids if traction fails.

Etiology

1. There is a clear indication of genetic susceptibility (autosomal recessive gene).

2. Infectious Agents in dogs (CPV type 1), Infectious Canine Hepatitis (Adenovirus – 1)

3. Mechanical factors include anaemia, decreased heart function and myocarditis, distorted blood vessels, low blood protein levels, lymphatic system malfunction (embryonic lymph node formation), and vasculitis.

4. Foetal anasarca may be accompanied by mild amnion and/or allantois hydrops and placental oedema.

Pathogenesis

1. Disturbances of circulation in adult animals can result in generalized oedema, also called as anasarca. It can be caused by right-sided heart failure, liver disease, and chronic kidney disease.

2. Ions

It can cause due to Sodium retention. Because of this, often a low sodium diet is recommended.

i. This application is limited to adult anasarca and does not apply to foetal anasarca.

ii. On the contrary, it is well known that low-sodium diets can induce reproductive issues ranging from infertility to abortion.

iii. Sodium restriction stimulates the body's Renin-Angiotensin-Aldosterone (RASS) pathway, which regulates blood pressure and may contribute to kidney dysfunction.

3. Infectious

- Canine Hepatitis caused by Adenovirus – 1 has been proven to cause fetal anasarca in dogs.

i. Because the illness produces haemorrhage from small blood vessels, affected dogs bleed quickly. Subcutaneous oedema of the head, neck, and trunk may occur in an adult dog infected with a bacterial illness.

ii. The virus destroys the foetal and placental blood and lymph vessel walls, causing fluid seepage into the subcutaneous area.

- Canine Parvovirus Type -1, CPV-1is another virus that has been proven to cause fetal anasarca as a result of the dam being exposed to the virus during mid-pregnancy.

i. The virus spreads transplacentally.

ii. If the dam becomes contaminated between days 20 and 35 of pregnancy. In addition to foetal anasarca, the virus can cause abortion and puppy fatalities.

iii. There is currently no effective CPV-1 vaccination, and commercial Canine Parvovirus 2 vaccines are not cross protective.

iv. The disease is mostly prevented through a strong bio-security programme.

4 Drugs

Corticosteroids, when supplied to the dam during pregnancy, have resulted in congenital abnormalities such as malformed forelegs and foetal anasarca. Depomedrol and Triamcinolone are two medicines in this class that have been linked to this issue.

5 Mechanical causes

- Each of this situation's fluid seeps from the blood vessels, and settles in the subcutaneous tissues and inadequate cardiovascular function prevents the body from eliminating the excess fluid.

Fig: Fetal anasarca in goat (Prabaharan V. et. al)

Diagnosis

Ultrasonography

Treatment

1) Per vaginal examination is done to reveal the Presentation, position and posture therefore necessity intervention is done

2) Forced extraction is usually successful after taking out the fluid and simplyusing eye hook for extraction

3) If the fetus is too large, fetotomy (Depending on severity it can goes to partial or complete fetotomy)

4) Lastly, Cesarean section

- Local anaesthesia (2% lignocaine hydrochloride) was gave in the form of inverted "L" blocks at left lower oblique site.
- Uterine incisionwas done as such normal anatomical position of the uterus with in the abdomen cavity and the foetus was removed by using 3-waytraction after apply the snare on both fore limbs
- The incision site was close as per standard procedures,

i. Uterus was closed by no 2 catguts by Cushing followedlambert

ii. Muscle layer was closed with no 2 catguts by ford interlocking suture pattern

iii. Skin was closed by cross matters suture pattern by using cotton thread.

5 Supportive therapy

Fluid Therapy

a) Normal or hypertonic Dextrose Normal saline

b) Ringer's lactate infusion

Calium Replacement

a) Calcium borogluconateinfusion

Hormonal

a) Oxytocin injection

Antibioics

a) Enrofloxacin or Broad-spectrum antibiotic injection

NSAID

a) Meloxicam Injection.

Antihistamin

a) Chlorphenaraminemealeate injection

Intrauterine

a) BolusUromet (Nitrofurazone, Metronidazole, Urea) or Ofloxacin Intrauterine

Ointment

a) Lorexane ointment TID/day

Tetanus toxoid (i/m) was injected

CONCLUSION

Foetal anasarca is caused by a disruption in fluid exchange and may be of placental origin.Traction may be used to deliver the foetus in mild situations. When traction fails, multiple incisions into the oedematous areas of the foetus to drain the liquid or limb removal is indicated.Caesarean section was performed by the obstetrician since the condition was severe.The probable causes of foetal anasarca are hereditary predisposition due to autosomal recessive genes especially affecting normal embryonic lymph node development.

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