

2024 Batch-Lecture No. 25

Date: 24.04.2024

Abortion continued from previous class

VIRAL CAUSES OF ABORTION IN CATTLE:

INFECTIOUS BOVINE RHINOTRACHEITIS AND INFECTIOUS PUSTULAR VULVOVAGINITIS:

1. It is a common cause of abortion in cattle.
2. There are several clinical forms of this disease include:
  - i. The upper respiratory form or red nose,
  - ii. The conjunctival form,
  - iii. Neonatal digestive form,
  - iv. The meningo-encephalitic form,
  - v. The vulvo-vaginal form,
  - vi. The preputial form,
  - vii. The prenatal or abortive form and
  - viii. Intrauterine form of the disease
3. The prenatal or abortive form of the disease is characterized by infection and intrauterine death of the foetus and abortion 2 to 5 or more days later.
4. Abortion may occur in all the three trimesters of gestation but are most common from mid-gestation to term.
5. Abortions are most common following the respiratory and conjunctival forms and rarely occur in cases of infectious pustular vulvo-vaginitis.
6. Retention of placenta occurs in about 50 percent of the abortions.
7. Signs of impending abortion are usually not observed.
8. Aborted foetuses are invariably expelled dead with a degree of autolysis.
9. Premature births or living infected foetuses or calves at term have not been reported.

EPIZOOTIC BOVINE ABORTION:

1. It is caused by an agent of the psittacosis lymphogranuloma, Chlamydia or Migawanella group of organisms.
2. Foetuses were expelled during the 6<sup>th</sup> to 8<sup>th</sup> month of gestation.
3. The incidence of abortion would reach 30 to 40 percent in some herds with occasionally up to 75 percent or more of susceptible females aborting.
4. In a susceptible herd animals of all ages would abort but thereafter abortion was largely limited to heifers.
5. Outbreaks of E.B.A. occur suddenly without pre monitory signs of illness or impending abortion.
6. The disease primarily affects the foetus as there is no clinical evidence of infection in the cow.
7. Abortions occur from the fourth month of gestation to term but most commonly the 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> months.

8. Some foetuses were expelled dead at term or calves were born alive and weak and succumbed later.
9. About 50 percent of aborting cows had retained placentae and the subsequent fertility of the cows was impaired at least for a number of months.
10. Once a cow aborted an immunity was apparently produced and only occasionally did cows abort a second time due to this P. L. Agent.
11. Aborted foetuses were clean, fresh and pale or anemic and death had apparently occurred during delivery or shortly thereafter.

Other miscellaneous viral diseases associated with sporadic bovine abortion have been Foot and Mouth Disease, Rinderpest, Rift Valley Fever, Bovine Infectious Petechial Fever, Tick borne fever, Myxovirus parainfluenza-3, Bovine Viral diarrhoea-mucosal disease, Malignant catarrhal fever and Pseudorabies.

#### MYCOTIC OR FUNGAL CAUSES OF ABORTION:

1. Almost all mycotic bovine abortions are caused by two groups of fungi.
2. About 60 to 80 percent are caused by *Aspergillus* spp. And most of these are *Aspergillus fumigatus*.
3. The Mucorales order of fungi are responsible for most of the remainder of mycotic abortions.
4. The three most common genera of this later order causing abortion are *Aspidium*, *Mucor* and *Rhizopus* in descending order of frequency.
5. The few remaining are due to other types of fungus and rarely yeasts.
6. The incidence of bovine mycotic abortion varied from 0.5 to 16 percent of all bovine abortions.
7. Most mycotic abortions are sporadic.
8. *Aspergillus* and *Mucor* molds are ubiquitous in nature and are usually saprophytic.
9. Occasionally they may localize in the body producing serious systemic diseases.
10. Mycotic abortions have been reported highest incidence when the hay and straw was baled while damp and mold developed.
11. Molds apparently are taken into the body by inhalation into the lungs or by ingestion.
12. The mold spores are taken carried to the placenta in the blood stream from lesions in the respiratory tract or ulcers, mycotic rumenitis or other lesions of the digestive tract. This results in a slowly developing fungal placentitis and interference with the nutrition of the foetus and foetal death and abortion after a period of a number of weeks or months.
13. Most mycotic abortions occur about the 5<sup>th</sup> through 7<sup>th</sup> month of gestation but may occur from the 4<sup>th</sup> month to term.
14. The foetus is usually expelled dead with a degree of autolysis present but in some cases premature or full term calves are alive but weak at birth and die shortly thereafter.
15. Mycotic abortion is usually characterized by marked changes in the foetal membranes resembling, but much more pronounced than, those due to *Brucella abortus*, *Vibrio foetus* and P.L. agent.
16. The chorion is thick, edematous, leathery and necrotic.
17. The primary lesions are in the placentomes.
18. Both the maternal caruncle and foetal cotyledon are very large, swollen, edematous, and necrotic.

19. The enlarged cotyledons may be firmly incarcerated and resist detachment for 8 to 10 days or more after abortion.
20. The placentomes may then become completely detached due to severe necrosis involving the cotyledons, caruncles and the caruncular stalks.
21. In a few instances these necrotic structures remain in the uterus for several months after abortion or normal birth and retained placenta, and resemble a macerating foetus.
22. The cow must often be sold as sterile.
23. The necrotic cotyledons show a dull grey center surrounded by areas of haemorrhage and are firmly attached to the leathery chorion.
24. In the utero chorionic space is usually some reddish fluid with large flakes of pus.
25. The fungus spreads by extension through the foetal membranes to the foetal fluids.
26. The foetus may be normal in appearance or in about 30 percent of the cases,