

**MJF COLLEGE OF VETERINARY AND ANIMAL SCIENCE,
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DEPARTMENT OF VETERINARY PATHOLOGY

Female Genital System

Developmental Anomalies

Freemartinism

- Genetic female born co-twin with a male
- Most commonly in cattle.
- Twinning occurs in 1-2% of pregnancies in cattle
- Anastomoses develop between the placental vascular systems of the two fetuses

Pathology of the Ovary

- **Perioophoritis:** Inflammation of the serosal surface of the ovary
- **Oophoritis:** Inflammation of the ovary

Ovarian cysts

Follicular Cysts :

- **G**rafian follicle does not rupture and enlarge
- Common in high producing animals
- Nymphomania (persistent sexual desire) is observed in cows and bitches

Luteinized cyst:

- This type of cyst develops when ovulation fails to occur and the theca undergoes luteinization.

PATHOLOGY OF THE FALLOPIAN TUBES

- **Salpingitis** means inflammation of the oviduct
- **Hydrosalpinx** denotes a cystic dilatation of a part of the oviduct, containing clear fluid.
- **Pyosalpinx** means pus in the salpinx

PATHOLOGY OF UTERUS

Abnormalities of position or location

- 1 Torsion of the uterus:
 - uncommon except in the cow and mare.
- 2 Prolapse of the uterus:
 - commonly in ruminants

INFLAMMATION OF THE UTERUS

Endometritis: Inflammation is restricted to the endometrium of the uterus

Metritis: Inflammation of the uterus and is found in all animals.

Perimetritis : Inflammation of the serosa is known as perimetritis .

Other terms

Pyometra:

- literally means pus in the uterus. But usually this term is applied to chronic suppurative metritis

Hydrometra and mucometra

- The accumulation of thin (hydro) or viscid fluid (muco) in the uterus is concurrent with the development of endometrial hyperplasia or is proximal to an obstruction of the lumen of the uterus, cervix, or vagina.

Other terms

Abortion:

- an abortion is defined as the expulsion of a fetus before term

Stillborn

- A dead fetus delivered within the period of expected parturition

Premature birth

- The birth of a viable fetus before term

Other terms

Mummification:

- In absence of any bacterial infection, the fluids are resorbed and the membranes become closely applied to the desiccated fetus.
- The whole mass becomes brown or black and rather leathery



Other terms

Maceration:

- Maceration is defined by fetal death, regression of corpus luteum but abortion fails to occur. It stays in uterus and starts getting putrefied. This is due to infection present in uterus or may be introduced from outside.

Adenomyosis:

- the presence of endometrial glands and stroma between the muscle bundles of the myometrium

PATHOLOGY OF CERVIX

- **CERVICITIS** : inflammation of the cervix

Etiology

- Mechanical injuries during parturition copulation and
- Diseases of uterus and vagina: Cervicitis, always occurs whenever metritis or vaginitis is present, since cervix is located between these two.
- The cervicitis normally follows abnormal parturition such as abortion, premature birth, dystocia, retained placenta, post partum metritis, pneumovagina and vaginitis.

PATHOLOGY OF VAGINA & VALVA

- **Vaginitis** : inflammation of the vagina
- **Vulvitis** : inflammation of the valva
- **Tumefaction of the vulva** : Vulvar enlargement due to physiological response to estrogens.

PATHOLOGY OF VAGINA & VALVA

- **EPIVEG:** Infectious bovine cervicovaginitis and epididymitis - Bovine herpesvirus 1
- **Infectious pustular vulvovaginitis** of cattle
- **Pneumovagina:**
 - Common in mare
 - Sucking of air through vagina

ABORTION

- Expulsion of a dead fetus prior to the normal full gestation period is called abortion
- Abortion is mostly due to infection of the
 - Fetus
 - Placenta
 - Uterus
 - since these conditions cause death of the fetus.

Etiology - First Trimester

TRICHOMONIASIS: *Trichomonas fetus*

- Bull harbors the flagellate in the mucous membrane of the penis, terminal portion of urethra and prepuce
- Abortion will occur within about 16 weeks of pregnancy

Etiology - Second Trimester

VIBRIOSIS : (*Campylobacter fetus*)

- In the cow abortion occurs between the 5th and 7th months of pregnancy
- In the sheep, abortion occurs at 2nd month of pregnancy.

Etiology - Third Trimester

- **BRUCELLOSIS:** (*Brucella abortus*)
 - 7th month of gestation in the cow
 - Produced Placentitis – Fetal death & Abortion
 - Retention of placenta is most common complication
- **LISTERIOSIS:** (*Listeria monocytogenes*)
 - Fetus die to septicemia
- **LEPTOSPIROSIS:** (*Leptospira interrogans, serovars pomona and hardjo.*)
- abortion after 6th month of pregnancy

Etiology – Other

- Enzootic abortion of ewes
 - *Chlamydophila abortus* (*C. psittaci*)
- Toxoplasmosis
 - *Toxoplasma gondii*
- *Bovine herpesvirus 1*
- Bovine Virus Diarrhea – 1st or 2nd trimester
- Infectious Bovine Rhinotracheitis - 2nd or 3rd trimester
- Equine viral arteritis:- 9th or 10th month.

Pathology of Mammary Gland

- Mastitis : Inflammation of the udder

- *Streptococcus agalactiae*
- *Streptococcus dysagalactiae*
- *Staphylococcus aureus* and *albus*;
- *Corynebacterium pyogenes*
- *E. coli*
- *Pseudomonas aeruginosa*
- *Pasteurella multocida*
- *Brucella abortus*
- *Mycobacterium tuberculosis*
- *Actinomyces bovis*
- *Actinobacillus lignieresii*

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