CVE – AGMOOCS - TANUVAS

LESSON III- SEGMENTAL APLASIA OF THE MULLERIAN DUCT OR PARAMESONEPHRIC DUCT

Name of the content developer:

Dr. Sarath Thulasiraman,

Assistant Professor,

Department of Clinics,

Madras Veterinary College,

Chennai-600 007.

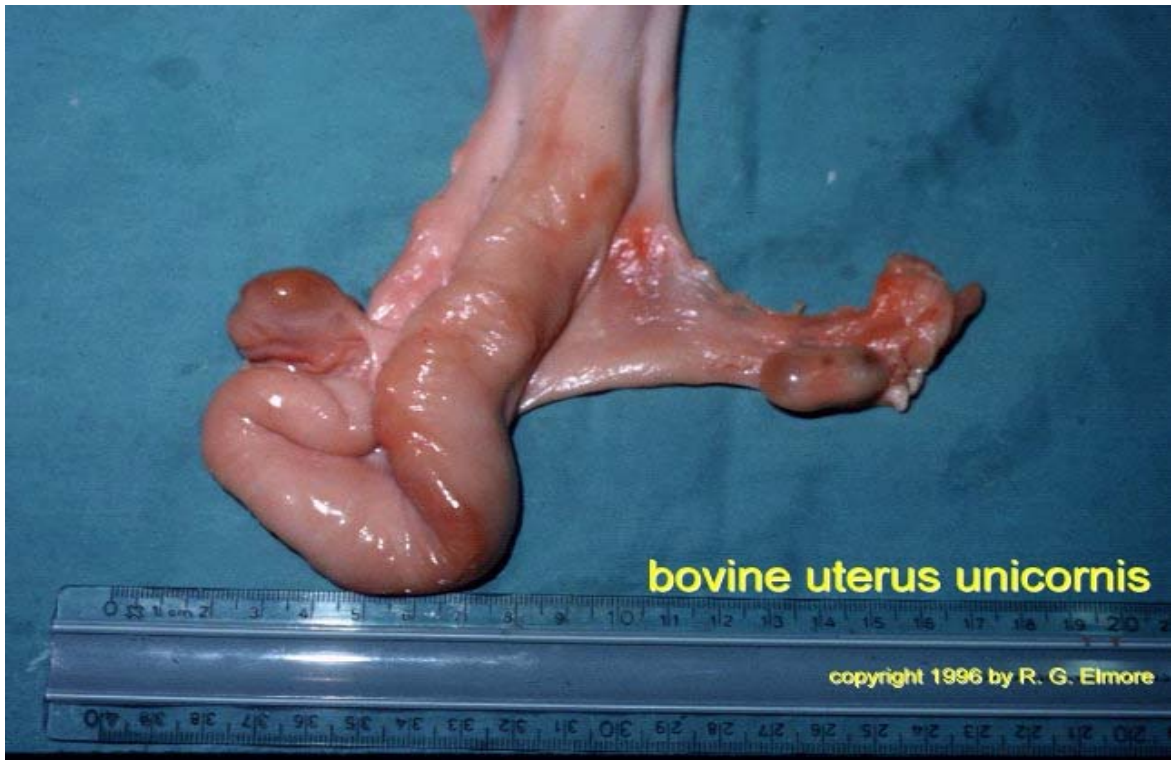
Mobile: +91 8098852349

Email: drsarathvet@gmail.com

SEGMENTAL APLASIA OR HYPOPLASIA OF UTERUS

- These defects are mostly hereditary in origin and some may be congenital
- Segmental aplasia of uterine tubes is **very rare**
- The most severely affected cattle with segmental aplasia of the paramesonephric ducts are sterile due to the bilateral nature of the defects.
- These may be characterized by a **hymenal constriction; absence of either the cranial part of the vagina, the cervix, or the uterine body, including part of the horns; and a cystic dilation of the uterine horns due to a narrow band of aplasia or a defect near the uterine body.**
- More commonly just the apices of the uterine horns containing yellow, tan to dark-reddish-brown mucus are present.
- This cystic apical dilation may vary from the size of a horn to the approximate size of a 4-month pregnant uterus, containing a few ml to a gallon or more of watery, thick, gummy or inspissated mucus.

SEGMENTAL APLASIA OR HYPOPLASIA OF UTERUS



SEGMENTAL APLASIA OF CERVIX WITH SECONDARY HYDROMETRA

- **Genetic or congenital anomalies of the cervix** of cattle is not uncommon.
- Segmental aplasia may rarely occur resulting in **mucometra or a cystic enlargement of the cervix.**
- A high incidence of developmental defects of the paramesonephric duct system is associated with **infertility and sterility in Jersey and Shorthorn heifers**.
- Besides segmental uterine aplasia, infertile heifers had sacculations 1 to 4 cm in diameter, diverticulums 1 to 2 cm deep, and dilations of the cervix due to defects at the third or fourth cervical rings.
- These defects are invariably filled with thick mucus and most affected heifers fail to conceive.
- These may often be diagnosed by rectal palpation of the cervix aided by a small metal probe such as a uterine catheter.

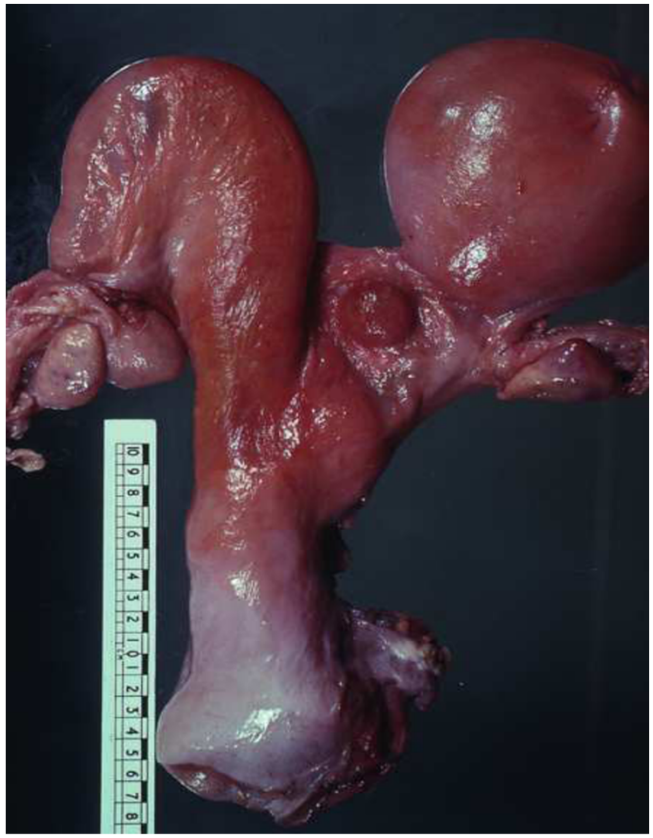
SEGMENTAL APLASIA OR HYPOPLASIA OF THE VAGINA

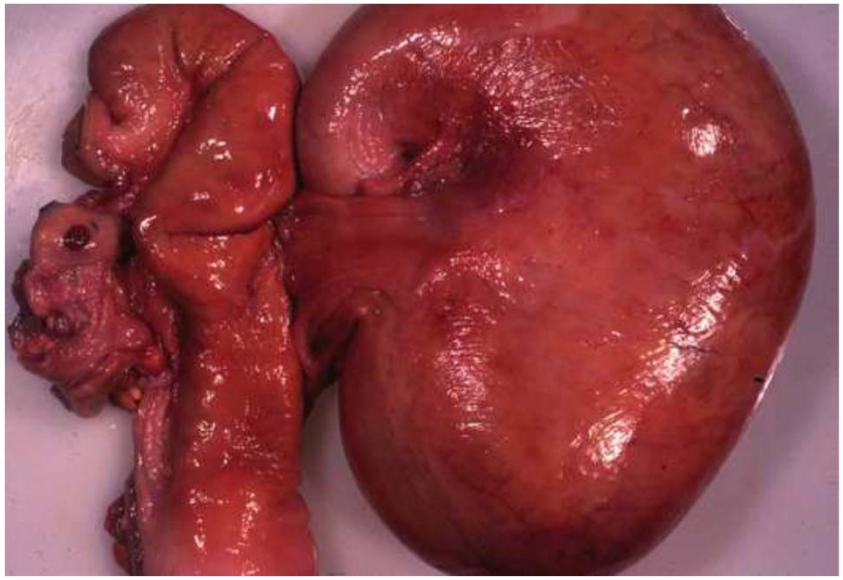
- The **vagina is usually short and narrow**, or may have an enlarged or dilated caudal portion containing mucus or occasionally pus, and submucous vaginal channels may be present.
- These cordlike structures are considered to be primitive vestiges of arrested development of the Mullerian ducts.
- They might be vestiges of the primitive Wolffian ducts.
- In rare instances there is a marked arrest in development, aplasia, or hypoplasia of the vagina and Mullerian duct system, characterized by a lack of a normal vagina, cervix, or uterus

WHITE HEIFER DISEASE WITH AN IMPERFORATE HYMEN

- **Segmental aplasia of the Mullerian or paramesonephric ducts** and especially an **imperforate hymen** have been called **"white heifer disease"** because of the association of these genetic defects with white coat color.
- Mullerian ducts fuse and develop in the bovine embryo when it is 5 to 15 cm. long or is 35 to 120 days of age.
- “White heifer disease" was so named because it occurs most commonly in white heifers of **the Shorthorn breed**.
- This condition is considered to be caused by **a single, recessive, sex-limited gene with linkage to the gene for white color.**
- The condition called arrested development of the Mullerian ducts occurred in a Holstein herd due to **inbreeding** a valuable sire upon his own daughters.

WHITE HEIFER DISEASE WITH AN IMPERFORATE HYMEN





IMPERFORATE HYMEN

- A hymenal constriction may be but usually is not present.
- These animals **may be fertile or infertile**, usually the latter, with prolonged intervals between estrous periods and repeated services per conception because conception cannot occur if ovulation takes place on the side of the abnormal horn and normal involution of the CL may not occur due a prostaglandin deficiency caused by the missing uterine horn.
- The hereditary nature of these defects of the tubular portion of the bovine genital tract and the danger of their spread by AI bulls was noted.

Imperforate Hymen and Mucometra
Imperforate hymen results in accumulation of uterine and cervical secretions and results in the formation of mucometra, mucocervix and mucovagina.
(Source: Drost Project)

SUMMARY OF DAY 3 LECTURE

- Segmental Aplasia or Hypoplasia of Uterus
- Segmental Aplasia of Cervix with Secondary Hydrometra
- Segmental Aplasia or Hypoplasia of the Vagina
- White Heifer Disease with an Imperforate Hymen