

## Reproductive disorder disease

In simple language this can be defined as a disease affecting that leads to infertility or sterility

**fertility** : ability of an animal to reproduce

**Infertility** : temporary inability of the animal to reproduce

**Sterility** : permanent inability of the animal to produce

Causes :

1-anatomical (hereditary disease) or structural defect

2-functional defect(hormonal disease)

3-infection causes

4-management causes

**Anatomical or structural defect could be congenital or acquired**

**Congenital(newborn) anomaly**

1- aplasia /absent of ovary

2- hypoplasia of ovary

3- white heifer disease

4- double cervix and external os

5- agenesis or aplasia of fallopian tube

6- atresia of vulva

7- hermaphrodite

8- freemartins

**Acquired anomaly**

1- Overo-bursal adhesion

2- adhesion of uterus

3-prolapse of annular rings

4- fracture of pelvis

5- ovarian tumor

6- vulval tumor

## **Acquired defect**

**Ovaro-bursal adhesion:** may be due to following:

- 1- infection causes eg. extension of peritonitis due to traumatic reticulitis into the ovaro-bursal area
- 2- peritoneal tuberculosis
- 3- defective manipulation of ovaries like removal of corpus luteum leading bleeding and adhesion

## **Acquired defect**

**Adhesion of uterus** :adhesion of uterus to omentum, intestine or to abdominal wall may occur following caesarean operation .

**Stenosis of cervix** :may as a result of severe cervicitis or due to traumatic injuries . Forceful introduction of AI gun also leads to this.

**Fracture of pelvis** :this leads to stenosis of the pelvis . This increases the chances of dystocia

**Tumors** :of the vagina , cervix and uterus causing obstruction

## Definition

**Teratology:** The division of embryology and pathology dealing with abnormal development and malformation of the antenatal(fetal) individual is called teratology .

**Anomaly:** If the malformation involves only an organ or part of the body, it is called an anomaly.

**Monster:** If the deformity or malformation is extensive, the animal is called monster.

**Intersex:** An individual having some of the characteristics of both the sexes and therefore showing abnormalities of sexual development, is called intersex

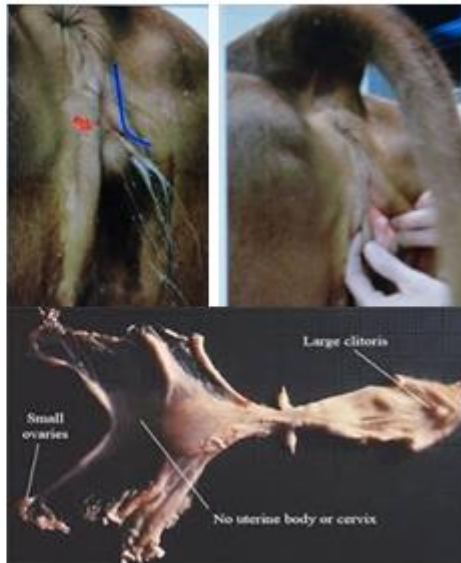
**Bovine freemartin** : a sterile female calf , born co-twin with a male fetus that shows underdevelopment or misdevelopment genital tract as a result of early development of vascular anastomoses between fetuses of different gender. In cattle this condition is observed in 95% of twin pregnancies



**Causes** :Placental anastomoses that occur in the early embryonic life are responsible for freemartinism; their presence in females results in masculinisation

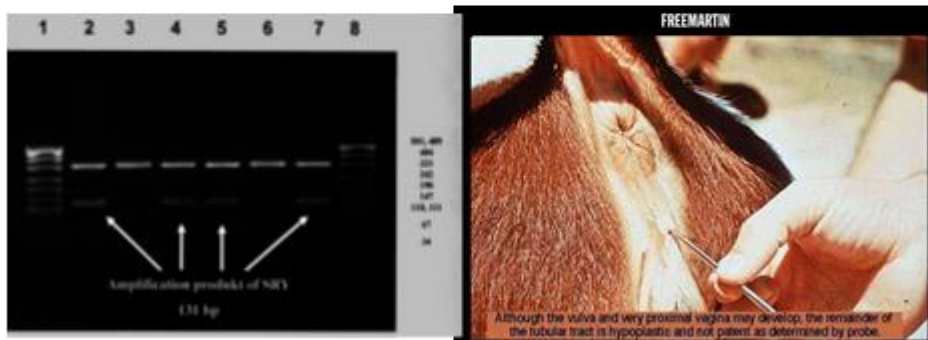
**Clinical signs :**

- 1-the vulva is smaller and present **tuft of hair**
- 2- **enlarged clitoris** is a common finding and complete hymen
- 3- **vagina is shorter** than in normal development
- 4-the uterus rudimentary or **cord like and small ovary**
- 5- presence of **seminal vesicle**



**Diagnosis freemartin**

- 1- vagina is shorter(5-7cm) than in normal development(12-15cm)
- 2- molecular and cytogenetic analysis



## hermaphrodite

**True hermaphrodite:** An individual having both testis and ovary or ovotestes, is called true hermaphrodite.

**Pseudohermaphrodite:** An individual having gonads of only one sex (either ovary or testis) but external genitalia and secondary characters of opposite sex

**Male pseudohermaphrodite:** An individual having testes but phenotypically resembles to female, is called male pseudohermaphrodite

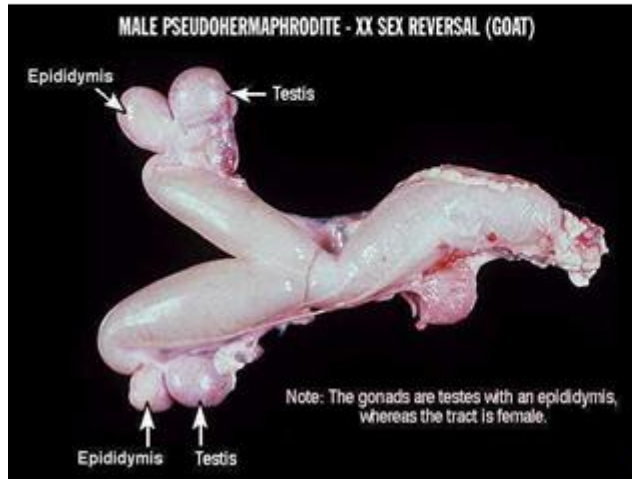
**Female pseudohermaphrodite:** An individual having ovaries but phenotypically resembles to male, is called female pseudohermaphrodite.

## True hermaphrodite



True hermaphrodite horse

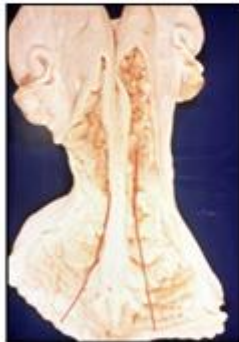
## Male pseudohermaphrodite



Male pseudohermaphrodite goat

## Segmental aplasia of the mullerian duct

**Uterus didelphys and double cervix in cow**



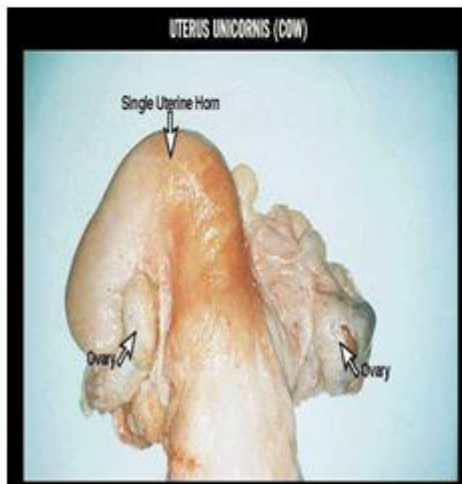
Uterus didelphys and double cervix, cows

**Double cervix in cow**



## Segmental aplasia of the mullerian duct

**Uterus uncornis in cow**

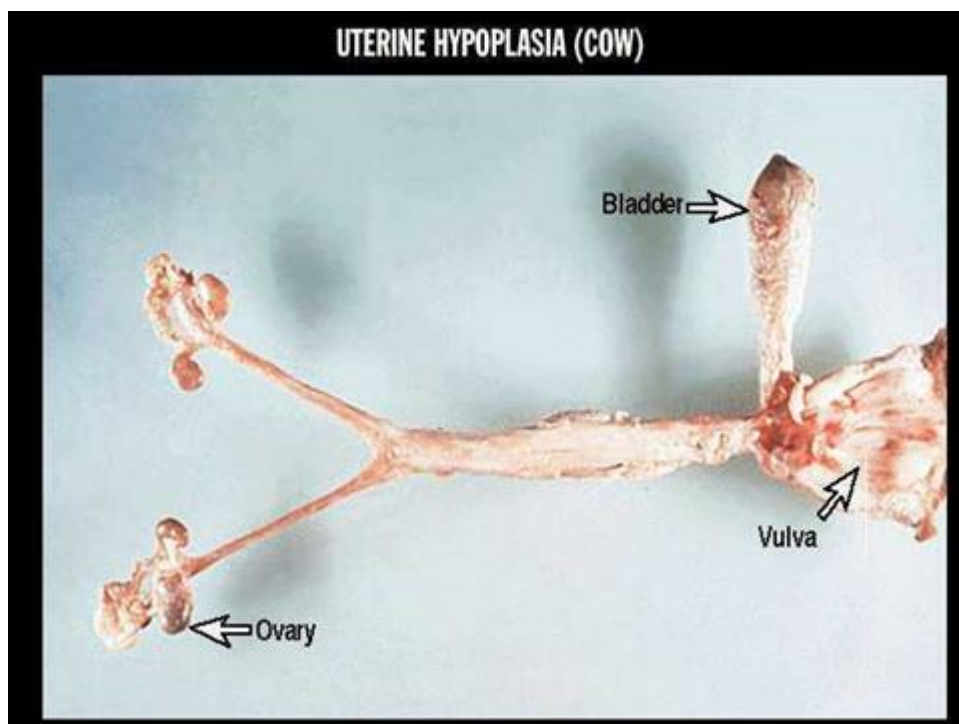


**Uterus uncornis in sow**

Segmental aplasia of a uterine horn, pig



**UTERINE HYPOPLASIA (COW)**



## Segmental aplasia of the mullerian duct

**White heifer disease:** Due to arrested development of the Mullerian duct system, the uterus and the vagina are incompletely developed and development of hymen membrane but the ovaries and vulva are always normal. This abnormality in heifer is called white heifer disease. Because found in white shorthorn breed

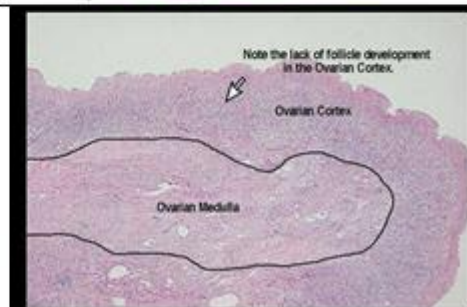
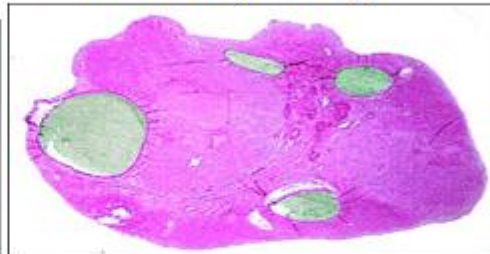


## Ovarian hypoplasia

Ovarian hypoplasia in cow



Different between normal and abnormal ovary histology





## Ovarian hypoplasia

- 1- hereditary causes
- 2- the case either heifer or cow
- 3- either bilateral or unilateral ovary effect
- 4- the surface of ovary groove
- 5- the reproductive system infantile
- 6- clinical signs of case anestrus
- 7- no respond to treatment with folligon

## inactive ovaries

- 1- decrease FSH hormone
- 2 – the case mostly cow
- 3- always bilateral ovary effected
- 4- the surface of ovary smooth
- 5- the reproductive system normal
- 6- clinical signs of case anestrus
- 7 – respond to treatment by folligon

## Atresia of vulva

The vulva of heifer is small so causes dystocia so must treatment by episiotomy

