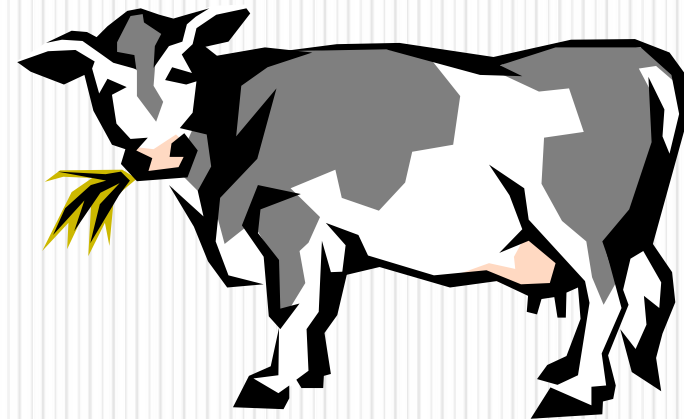


# Female Reproductive System DISORDER

PROF. PRATIWI



# Hormonal Changes

- As the fetus approaches full term:
  - Progesterone levels decline.
  - Estrogen levels increase, preparing uterus for delivery.
  - Fetus releases hormone (cortisone) stimulating the beginning of the birth process.
- Parturition or delivery of the newborn occurs normally at a point when the fetus is capable of surviving on its own.

### Primary Sex organs:

1. Gonads (ovaries, testicles)
2. Tubular organs (fallopian tube/ oviduct, uterus, spermatic cord)
3. Copulatory organs (vagina, vestibule, vulva, penis)

### Primary Regulatory centers:

1. Pituitary gland
2. Hypothalamus

### Pregnancy Maintenance & Termination

1. Fetoplacental unit

## Sequences of Events (Female)

CNS → Hypothalamus → Ovaries → Antr.Pit.Gld  
(rel.Gn-RH) (release FSH) (rel. estrogen) (rel.LH)

Luteinizing Hormone (starts at puberty)

- resp. for ovulation & development of corpus luteum

**Uterus – rel. prostaglandin F<sub>2</sub> $\alpha$**   
- interrupt pregnancy  
- for estrous cycle continuation

**Fallopian Tube – rel. progesterone**  
- survival of zygote in uterus

## Sequences of Events (Female)

### \*estrogen & progesterone:

- affect tubular organs
- responsible for feedback mechanism of FSH in hypothalamus & anterior pituitary
- resp. for sex chars., behavior and lactation

## Problems:

Interruption of estrous cycle could be due to:

1. Pregnancy
2. pathologic conditions – results to infertility

Vulva- reduced elasticity of sphincter due to trauma & relaxation promotes ascending infection to vestibulovaginal tube

## Problems:

Vestibulovagina- urovagina and pneumovagina leads to chronic infection but with **normal uterus**

Uterus – puerperal infection like closed-cervix pyometra (cows & bitches) but with **normal vestibulovaginal tube**

# Problems:

Infertility due to:

- a) ovaries: nutritional, stress atrophy, cystic disease
- b) uterus: infections contracted at mating, during parturition or puerperium



# Problems:

Infertility due to:

- d) pyometra, severe endometritis leading to persistent corpus luteum
- e) Interference of motility and secretion of Fallopian tube

# Diagnosis

1. Rectal and abdominal palpation
2. Vaginoscopy
3. Fiberoptic hysteroscopy
4. Radiography
5. Transrectal ultrasonography
6. Lab. Exam:
  - a) bacterial & cytologic exam of exudate & secretions
  - b) biopsy and endometrial cytology
  - c) hormone assay

# Uterine Disorders

1. Uterine prolapse – common in dairy cows, ewes and less in sows, rare in mares, bitches, queens; occurs right after or within several hours of parturition when the cervix is open & the uterus lacks muscle tone

Causes:

- Uterine atony, hypocalcemia, lack of exercise, excessive traction to relieve dystocia or retained fetal membranes

2. Metritis – postpartum disorder associated with abortion, fetal infection, retained placentas, obstetrical manipulation or ascending infection after normal parturition

- Streptococcal infection
- common in mares, occurs in sows
- spread by coitus
- accompanied by abortion, sterility & neonatal infection in foals

3. Dystocia – difficult birth due to:

- myometrial defects, hypocalcemia, inadequate pelvic diameter, insufficient dilation of the birth canal, fetal oversize, fetal death, or abnormal fetal presentation

4. Pseudocyesis – false pregnancy, common in bitches; occurs at the end of diestrus that is associated with the fall of progesterone and increase in prolactin; resolves after 1-3 weeks

Clinical signs:

- Hyperplasia of the mammary glands
- Lactation
- Behavioral changes “mothering” – nesting inanimate objects and refusing to eat

5. Pyometra – progesterone mediated diestrual disorder; results in:

- abnormal uterine endometrium with secondary bacterial infection

### Causes of pyometra:

- ✓ Long lasting administration of progesterone to delay estrus
- ✓ Administration of estrogens to mismated bitches during diestrus (estrogen increases stimulatory effects of progesterone on the uterus) which increases risk of pyometra
- ✓ postcopulation infections
- ✓ Secondary to postpartum metritis

## Effects of **PROGESTERONE**:

1. promotes endometrial growth
2. promotes glandular secretion
3. decreases myometrial activity
4. inhibits WBC response to bacterial infection



excellent bacterial culture medium to  
bacteria coming from normal vaginal flora  
or subclinical urinary tract infection

## Other Disorders of Female Reproductive Organs

1. Follicular cysts and nymphomania – **due to estrogen secreting ovarian tumor;**

results in:

- prolonged secretion of estrogen, continued signs of proestrus or estrus, attractiveness to males



## 2. Vaginal hyperplasia

- originates from the floor of the vagina anterior to the urethral orifice; seen as mass protruding from the vulva
- occurs during **proestrus** and **estrus** as a result of **estrogenic** stimulation

## 3. Vaginitis

- inflammation of the vagina occurring in prepubertal or mature bitches, due to bacterial infection from:
  - herpes infection, **vaginal foreign bodies, neoplasia, hyperplasia of the vagina, androgenic steroids**

# Metabolic Diseases of the Mammary Gland

1. Agalactia – hereditary condition due to hormonal imbalance that affects udder growth & development or a result of chronic mastitis
2. Failure of milk letdown – in young dairy cattle, due to fear & stress during initial milking procedure or due to pain & discomfort of large edematous udder

3. Mammary tumors – dog is the most affected species; 50% of all tumors in dogs are mammary tumors while 45% of mammary tumors in dogs are **malignant** (spread to axial skeleton & long bones)

Causes:

- hormones that influence hyperplasia and neoplasia of mammary tissues (estrogen & progesterone)

# Spread of Infection

1. Infection via the teat canal\* through:
    - a) infected udder
    - b) environment- contamination of milker's hands, wash cloths, milking machine cups by milk from infected quarters of other animals, bedding grounds from gland discharges, vigorous sucking by big offsprings
- \*except for TB – via the blood (hematogenous)

## 2. Susceptibility of lactating animal

- a) early stage being most susceptible
- b) the older the more susceptible
- c) inherited resistance
  - ex. teat shape and anatomy of teat canal
- d) lesions on teat orifice/skin
- e) immune status



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