Signalment

- Domestic chicken
- *Gallus gallus domesticus*
- Red hen
- 1.5 years old
History

• Two week history of not following the flock
• Decreased interest in regular feed
• Eggs with thin or absent shells progressing to no eggs
• Physical exam: Poor body condition and generalized weakness
• Unable to stand or remaining standing even with assistance
History

• Blood chemistry:
  – Significantly elevated uric acid
  – Elevated creatine kinase (CK)
  – Mildly elevated aspartate aminotransferase (AST)
  – Hyponatremia
  – Low-normal protein

• CBC within normal limits
Morphological Diagnoses

- Ovarian carcinoma, left ovary
- Metastasis to coelomic adipose tissue, pancreas and serosal surfaces of coelomic viscera
- Moderate coelomic effusion
• Ovarian carcinoma is rare in most animals

• Domestic hens spontaneously develop the tumors
  – Age-related incidence
  – High degree of morphologic variability

• Many commercial strains of laying hens
  – Ovulatory cycle of 24-26 hours
  – Egg production for 1-2 years
– Follicular development and ovulatory cycles controlled by pituitary gonadotrophins and ovarian steroids
– Following ovulation, the postovulatory follicle functions as an endocrine organ

• Similar to the monthly cycles of most contemporary women

• Good model for ovarian carcinoma in women
• Most animals are normally in some stage of pregnancy, lactation or in seasonal anestrous.

• These physiological states generally not associated with:
  – Frequent repetitive ovulation
  – Development of ovarian cancer

• Ovulation not necessarily a direct link to ovarian carcinoma
  – Usually physiological sequelae due to ovulation
• Ovulation is an inflammatory event
  – Production of cytokines, prostaglandins and other pro-inflammatory molecules
  – Can cause damage to DNA and possible mutagenesis
  – Development and progression of carcinogenesis

• Contraceptives associated with a decreased risk of tumor development in women
  – Hens utilized in field of hormonal studies to reduce incidence of ovarian carcinoma
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References:
Questions?