



Non-surgical treatment of
mismating, pyometra, and prostate
disease

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Mismating



Breeding future?

- None?
- Spay the bitch.



Mismating: Breeding future?

- Yes?
 - Estrogens?
 - Aplastic anemia
 - Pyometra
- Alternate treatments
 - Pregnancy diagnosis

Pregnancy Dx Methods

- Palpation
- Relaxin assay
- Ultrasound
- Radiographs

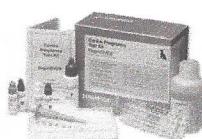
Palpation

- Timing
 - 20-30 days; 45-65 days
- Advantages
 - Cost???
- Disadvantages
 - Fat or giant breed dogs



Relaxin

- Timing
 - 30 days
 - Placentation 18-20 d
- Advantages
 - Easy, available
 - Dog-side test
- Disadvantages
 - Solo lab test
 - Time lag



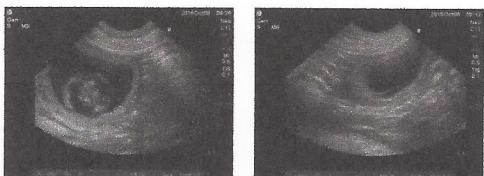
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Ultrasound

- Timing
 - 25 days
- Advantages
 - Immediate answer
 - Follow-up comparison



Advantage: Viability



Breeding future? Yes

- Corticosteroids
 - Typical side effects
(short term)
 - Longer treatment
 - Start early!
 - Late-term
pregnancy
 - abortion



Breeding future? Yes

Decrease progesterone

- Prostaglandins
 - Lyse CL
 - Dopamine agonists
 - Prolactin inhibitors
 - Cabergoline
 - Bromocryptine

Medical regime

- #1. Cloprostenol
 - Subcutaneous injection
 - #2. Cabergoline
 - Orally once daily for 8 days
 - #3. Day 4:
 - Repeat #1
 - Check progesterone
 - Recheck ultrasound

Breeding future? Yes

- Progesterone receptor antagonists
 - Mifepristone (Mifeprex; RU 486, RU 38486)
 - Effective after day 30
 - Expensive & human drug
 - Aglepristone (Alizine)
 - Effective early
 - Veterinary approved
 - Depression, mammary gland congestion

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Pyometra Treatment



- Ovariohysterectomy
 - >80% cure
 - “Never let the sun set on a pyometra...”
 - Broad-spectrum antibiotics
 - Pending Cx and sensitivity
 - IV fluids
 - Serum chemistry
 - Care with friable uterus

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Treatment

- Medical Therapy—not normally recommended
- Must be:
 - 1) Breeding age and vital to breeding program
 - 2) Not (significantly) systemically ill
 - 3) Open-cervix pyometra (preferably)
 - 4) Owner willing to hospitalize pet

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Treatment goals

- Attack progesterone effects
 - Lyse CL
 - Block progesterone receptors
- Relax cervix
- Induce uterine contractions
- Fight bacteria
- Induce uterine regeneration

Prostaglandins

- Dinoprost tromethamine (Lutalyse™)
 - Better luteolysis
 - Better myometrial contractions
 - Instead of cloprostenol (Estrumate™)
- PGF_{2α} 3-5x daily for 3-7 days SQ or IM
 - **Caution in calculations and delivery!**
 - Start low, then increase
 - Intravaginal PGE infusion?

Dopamine Agonists

- Role of prolactin
- Cabergoline
- Bromocryptine
- Combination with prostaglandins
 - Progesterone reduction in 1-2 days
 - (3-4 days with prostaglandins alone)

Progesterone receptor antagonists

- Mifepristone (RU-486)
- Aglepristone
- Combination with prostaglandins
- Availability

Antibiotics

- Amoxicillin (\pm clavulanic acid)
- Cephalosporins
- Potentiated sulfonamides
- Culture and sensitivity!
- 10-14 days post-recovery

Androgen receptor agonists

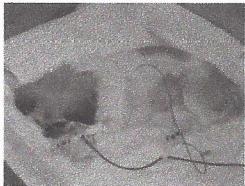
- Prolong anestrus
- Promote uterine regeneration
- Mibolerone

Treatment

- Broad-spectrum antibiotics (pending Cx and sensitivity)
- IV fluids
- Dopamine agonist
 - Anti-Prolactin--> luteolysis
- Progesterone receptor antagonist
 - Aglepristone

- PGF_{2α}
 - Luteolysis
 - Myometrial contractions
 - Cervical relaxation
 - Low doses!
- Prolong anestrus
 - Milberone
 - Androgen receptor agonist

Treatment (medical)



- Complications:
 - Recovery ranges 40-90%
 - PGF_{2α} side effects
 - Decreased fertility
 - Recurrence

Pyometra Treatment

- IV fluids
- Antibiotics
- Watch for DIC
 - ± heparin SQ tx: 50-100 u SQ

Recurrence & Prognosis

- 10-40% recurrence
- 50-75% fertility
- Recommend: breed and spay

Benign Prostatic Hyperplasia (BPH)

- 80% intact dogs > 5 y old
- 100% intact dogs > 10-12 y old
- Sanguinous prostatic fluid
- Hemospermia
- Hematuria
- Constipation
- Dysuria

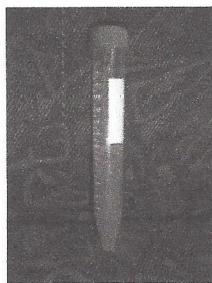


Photo courtesy of Pete Irons

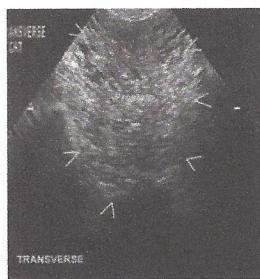
BPH Diagnosis

- Clinical Signs
- Transrectal palpation
 - Bilateral, smooth enlargement
 - Non-painful
- Ultrasound
 - Bilateral enlargement
 - Homogenous echogenicity



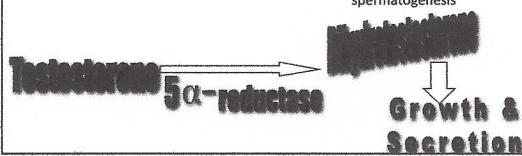
Photo courtesy of Małgorzata Pozór

BPH Ultrasound



BPH Treatment

- Castration
 - Post-castration
 - 50% reduction in 3 weeks
 - 70% reduction in 9 weeks
 - Finasteride (Proscar™)
 - Azasteroid
 - Inhibits 5 α -reductase
 - Testosterone concentrations
 - No effect on libido or spermatogenesis



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Other Treatments

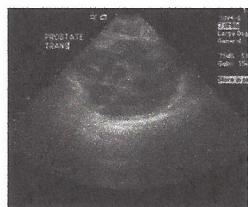
- GnRH agonists
 - Deslorelin
 - (Suprelorin ® Peptec animal health)
 - Progestagens
 - Estrogens
 - Antiandrogens
 - Osaterone acetate
 - Antiestrogens
 - Tamoxifen



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Prostatitis Etiology

- Ascending infection
 - BPH
 - Intact males
 - *E. coli* most common



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Acute Prostatitis Clinical Signs

- Depression
- Pain
- Fever
- Dysuria
- Dyschezia
- Stiff-legged gait
- Pollakiuria
- Lethargy
- Hematuria
- Edema
 - Scrotal
 - Preputial
 - Hind limb
- Acute Abdomen
- Septic Shock

Take home message: Prostate as a DDx for many intact males

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Chronic Prostatitis Clinical Signs

- None
- Poor semen quality
 - Asthenospermia
 - Teratospermia
- Infertility
- Decreased libido
- Stranguria
- Leukocytes
- Hematuria
- Bacteria in urine/semen
- DDx: LUTD

Prostatitis Diagnosis

- Presumptive
 - Intact male
 - Clinical signs
 - Infertility
 - Decreased libido
 - Painful, irregular prostate
- Definitive
 - Inflammatory exudate in prostatic fluid
 - Ejaculation/Massage
 - Cytology
 - Culture
 - Ultrasound
 - Abscess
 - FNA
 - Spread infection?

Prostatic Abscess



Prostate drug characteristics

- Lipophilic
- Not protein bound
- Weak bases
 - Canine prostatic pH 6.1-6.5
 - Canine blood pH 7.3-7.4

Antibiotic choice

Good penetration

- Trimethoprim
- Fluoroquinolones
- Macrolides
- Chloramphenicol

Poor penetration

- Beta-lactams
- Aminoglycosides
- Cephalosporin
- Metronidazole

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Length of treatment

- Acute prostatitis
 - 4-6 weeks
- Chronic prostatitis
 - 6-8 weeks



Prostatitis Treatment



- 6-8 weeks
 - Cx 7 d and 30 d post treatment

- Antibiotics
 - pH
 - acidic
 - Penetration
 - Blood-Prostate Barrier
 - Lipid soluble
 - Non-protein binding
 - TMS
 - Fluoroquinolones
 - Chloramphenicol

Prostatitis Treatment

- Castration OR
 - Finasteride
 - 5 mg/dog SID
 - Until castration
 - Surgery
 - Abscess/Cyst
 - Drain
 - Omentization
 - Marsupialization



Prostatic neoplasia

- NOT positively correlated with BPH
 - Increased w/ castration
 - Adenocarcinoma
 - Transitional cell carcinoma
 - Highly invasive, malignant (80%)



Prostatic Neoplasia: Clinical Signs

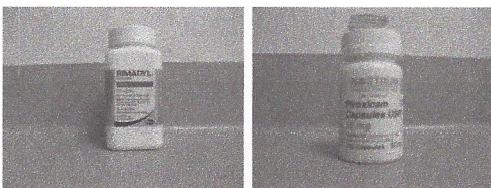
- Stranguria (45%)
- Tenesmus (44%)
- Hematuria (29%)
- Anorexia (23%)
- Weight loss (15%)
- Painful, irregular prostate

Prostatic Neoplasia: Treatment



- Unrewarding
- Castration
 - Involution of normal tissue
 - Neoplastic tissue unaffected
- Surgery
 - Incontinence
 - Omentalization
 - Radiation
 - 5 month survival maximum

NSAIDs



Sorenmo et al 2004

11/23/15

