

PYOMETRA

Extended Version

Presentation(s):

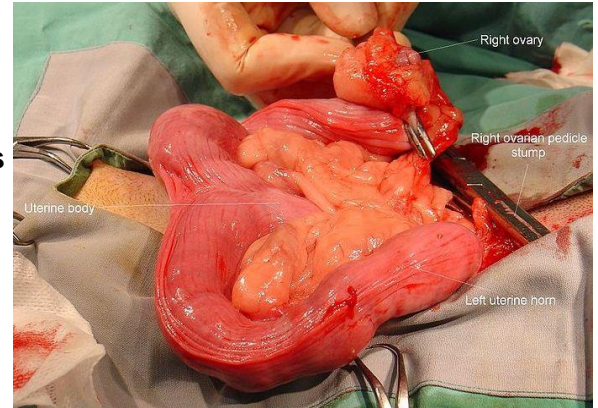
- 1.) Sick intact older bitch (> 4 y) in **DIESTRUS** (influence of progesterone)
- 2.) Sick intact younger bitch, **hx of injection** with
 - **Estrogens** (mis-mate shot, estradiol cypionate) or
 - **Progestins** (estrus delay, megestrol acetate)
- 3.) Sick intact bitch or queen, **Hx of estrus in last 2 months**
- 4.) **Consider pyometra in ANY intact bitch or queen with nonspecific illness**

Pyometra can present two ways:

- **OPEN:** purulent vulvar discharge
 - +/-normal size uterus
 - Owner may think dog is in heat
- **CLOSED:** NO discharge (common); large uterus, abdominal distension
LIFE THREATENING, surgical emergency

Other signs

- Lethargy, depression, dehydration, anorexia
- Polyuria / polydypsia (PU/PD), vomiting, +/- fever
- Can progress rapidly to shock, death



Differential Dx:

Pregnancy, mucometra, cystic endometrial hyperplasia (CES), vaginitis, urinary tract infection (UTI), uterine torsion, postpartum metritis, reproductive tract neoplasia

Other causes of acute abdomen

Other causes of PU/PD: diabetes mellitus, 1° renal dz

Test of choice:

- **Abdominal US** (DDx large fluid-filled uterus vs pregnancy)
 - +/- Abdominal radiographs (but rads can't Dx pregnancy if < 45 days)
- Typical database
 - **CBC:** leukocytosis w/ neutrophilia, left shift +/- toxicity (common),
-if there is sepsis, may see leukopenia instead
-or normal
 - **Blood chem:** ↑ hepatic & renal values, hyperproteinemia via hyperglobulinemia
 - **Vaginal swab cytology w/ C+S:** degenerate neutrophils; *E. coli* (most common),
can also see *Staph*, *Strep*, *Pseud*, *Proteus*
 - **Urinalysis w/ C+S:** isothermia via endotoxin-induced renal tubular impairment & insensitivity to ADH

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Rx of choice:

Supportive Rx

- **IV fluids** (correct fluid, electrolyte, acid-base imbalances)
- **Antibiotics** (broad spectrum, bactericidal)
 - ie: Amoxicillin/clavulanic acid, enrofloxacin, cephalexin
 - With medical treatment, continue for 2 weeks post-Rx
- Pain management as needed (ie: Buprenorphine)

Surgical Rx

OVARIOHYSTERECTOMY (OVH) - Rx of choice for Closed and Open pyometra

Medical Rx (somewhat complicated-here are basic elements of one protocol)

Prostaglandin F-2α (PGF-2α) + dopamine agonist or progesterone antagonist ie:

- **PGF-2α**: low, increasing doses 7-10 days or until complete uterine evacuation
 - Dino-prost (Lutalyse®) Dogs, dinoprostum (Dynolytic®) Cats

AND

- **A dopamine agonist** (inhibits prolactin hastening luteolysis - Dog, Cat)
 - Cabergoline (Dostinex®) or bromocriptine (Parlodel®)

OR

- **A progesterone antagonist** (mimics luteolysis - Dog)
 - Mifepristone (Mifeprex®) or aglepristone (Alizine®)

Transcervical endoscopic catheterization technique (**TECT**) **hastens uterine evacuation** (Dog)

- Monitor w/ US-should see 50% decrease uterine luminal diameter in 5-7 days
- Should be normal in 5-10 days

Prognosis:

Good with OVH or successful medical Rx

Guarded if sepsis, liver or renal failure

After successful medical treatment for open pyometra

- 90% of bitches, 70% of queens are fertile
- **MUST ADVISE OWNER: 70% recurrence in bitches within 2 yrs**

Prevention:

OVARIOHYSTERECTOMY

Post- medical Rx, breed next cycle to prevent recurrence



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Pearls:

- **NEVER DELAY TREATMENT of CLOSED PYOMETRA** even if dog appears healthy ("Don't let the sun set on a pyo" life-threatening)
- Always **palpate carefully** to prevent uterine rupture
- Pathophysiology
 - Progesterone, 1° hormone of diestrus promotes ideal environment for bacteria
 - Increased endometrial growth, glandular secretion
 - Decreased myometrial activity and WBC response against bacteria
 - So, cystic endometrial hyperplasia (CEH) + 2° bacterial infection = pyometra
- Pyometra **less common in queens**: Induced ovulators = less progesterone exposure

Refs: Cote, Clin Vet Advisor, Dog and Cat, 2nd ed. pp. 954-6, Pasquini, Guide Sm An Clinics, 3rd ed. pp 408-9. Merck Vet Manual online, Pyometra-small animal and Pyometra-large animal. Image courtesy, Dr. Joel Mills

My Notes: