



# Vaginal Discharge in Dogs

## Basics

### OVERVIEW

- “Vaginal” refers to the vagina; the “vagina” is the tubular passageway leading from the opening of the vulva to the cervix of the uterus; “vulvar” refers to the vulva; the “vulva” is the external genitalia of females
- “Vaginal discharge” is any substance (such as blood, mucus, pus) coming from the vagina, through the vulvar opening
- “Bitch” is a female dog

### SIGNALMENT/DESCRIPTION OF PET

#### Species

- Dogs

#### Mean Age and Range

- Bitches (less than 6–12 months of age) prior to going through puberty (known as “prepubertal bitches”)—anatomic abnormalities and prepubertal inflammation of the vagina (known as “prepubertal vaginitis” or “puppy vaginitis”) more common
- Bitches in “heat” or “estrus”—normal proestrus/estrus discharge, or persistent estrus discharge (as in cystic ovarian disease or granulosa cell tumor)
- Following delivery of puppies (recent whelping)—normal vaginal discharges (lochia) unless they are discolored or are malodorous (as in postpartum metritis); subinvolution of placenta attachment sites
- Bitches that have been spayed—narrowing (stricture) of the vagina, cancer, estrogen-responsive urinary incontinence
- Bitches that recently have completed their “heat” or “estrous cycle” and bred in the last 30-70 days—normal birth discharge or abortion
- Pyometra (pus in the uterus)—open pyometra drainage seen, increasing risk after each estrus cycle
- Cancer, more in older females

#### Predominant Sex

- Females

### SIGNS/OBSERVED CHANGES IN THE PET

- Discharge from the vulva (the external genitalia); discharge may be blood; blood, mucus, and tissue debris (known as “lochia”) following delivery of puppies; pus; urine; or feces
- Licking the vulva (external female genitalia)
- Spotting



- Scooting
- Attracting male dogs
- Delivering puppies (whelping or parturition)—with post-partum discharge
- History of “heat” or “estrus” during the preceding 2 months—vaginal discharge may be related to inflammation with accumulation of pus in the uterus (known as “pyometra”); signs of pyometra include vomiting and lack of appetite (known as “anorexia”)
- Bloody discharge more than 8 weeks after whelping often due to subinvolution of placenta sites; subinvolution involves incomplete healing at the placenta attachment sites; metritis; signs include vomiting and anorexia

## CAUSES

### Discharge (Normal)

- Normal during early heat cycle (known as “proestrus”) and sometimes into “heat” or “estrus”, minor in early diestrus (follows estrus)
- Late pregnancy (mucus)
- Parturition, lochia immediately after birth; normal post-partum discharge

### Disease Conditions (Pathologic)

- Persistent estrus due to cystic ovaries
- *Brucella canis* infection
- Inflammation of the lining of the uterus (metritis)
- Inflammation with accumulation of pus in the uterus (pyometra)
- Retained placentas or afterbirth (condition in which one or more placentas remains within the uterus following the delivery of the puppy or puppies); fetal death/retained fetuses
- Subinvolution of placental sites (condition in which the placental attachment sites in the lining of the uterus do not return to normal in 6 to 8 weeks after delivery)—bloody discharge lasting longer than 8 weeks
- Tumor or cancer of the vagina, uterus, ovary, urinary tract—such as transmissible venereal tumor; leiomyoma
- Primary inflammation of the vagina (vaginitis)—puppy vaginitis
- Estrogen-responsive urinary incontinence due to low estrogen (known as “hypoestrogenism”)
- Secondary inflammation of the vagina (vaginitis)—from foreign body, urinary tract infection, enlargement of the clitoris (known as “clitoral hypertrophy”), trauma
- Blood-clotting disorders (known as “coagulopathies”)
- Congenital malformations (intersex, ureters misplaced [ectopic]; the ureters are tubes from the kidneys to the bladder; during development, they may not attach to the bladder properly or may attach to reproductive organs instead; when this occurs, they are called “ectopic ureters” and one or both can terminate in the lower urethra, uterus, or vagina); urine or feces

## RISK FACTORS

- Medications or products containing male hormones (androgens)—may cause enlargement of the clitoris (clitoral hypertrophy)
- Prophylactic antibiotics—may alter the normal vaginal bacteria and allow overgrowth of disease-causing species and increase likelihood of secondary infection
- Estrogen medications given during certain phases of the “heat” or “estrous” cycle—predispose the pet to inflammation with accumulation of pus in the uterus (pyometra)
- Progesterone medications or natural progesterone levels in the body may predispose to pyometra, stump pyometra (stump is the base of the uterus left after spay)
- Obesity—excess skin folds around the vulva (female external genitalia)

## Treatment

### HEALTH CARE

- Based on cause
- No treatment needed for normal causes of vaginal discharge
- Outpatient, unless inflammation of the lining of the uterus (metritis) or inflammation with accumulation of pus in the uterus (pyometra) is noted—in those cases, spaying (ovariohysterectomy) or medical treatment may be

indicated (in-hospital)

- Supportive therapy—if the pet is ill
- Remove or treat any inciting cause—foreign body; tumor; anatomic abnormality; urinary tract infection; medications or products containing male hormones (androgens) or female hormones (estrogens, progestins)
- Inflammation of the vagina in a bitch prior to puberty (prepubertal vaginitis)—usually resolves spontaneously after the first “heat” or “estrus”
- Subinvolution of placental sites (condition in which the placental attachment sites in the lining of the uterus do not return to normal in 6–8 weeks)—rarely requires treatment

## **SURGERY**

- Depends on cause of vaginal discharge
- Bitches with inflammation of the lining of the uterus (metritis) or inflammation with accumulation of pus in the uterus (pyometra), or cystic ovaries may require surgery; a “spay” or “ovariohysterectomy” (in which the ovaries and uterus are removed surgically) or be medically managed
- Bitches with congenital (present at birth) anatomic abnormalities may need surgery
- Bitches with cancer—surgical removal of the ovary (known as “ovariectomy”) or the ovaries and uterus (ovariohysterectomy) is the treatment of choice
- Bitches with transmissible venereal tumor (TVT)—surgical removal or radiation therapy; “transmissible venereal tumor” is a tumor that is spread from dog to dog through physical contact, usually during breeding
- Foreign body removal, surgical removal of masses

## **Medications**

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive

- Prostaglandin F<sub>2α</sub> (PGF<sub>2α</sub>)—cause smooth muscle contractions and subsequent emptying of the uterus; also causes breakdown of the “corpora luteum” or “yellow body” that develops at the site of ovulation in the ovary and produces the female hormone, progesterone, which supports and maintains the pregnancy; breakdown or lysis of the corpora luteum decreases levels of progesterone and disrupts support of pregnancy
- Cloprostenol (Estrumate®)—also used to breakdown the corpora luteum and decrease levels of progesterone
- Antibiotics—based on bacterial culture and sensitivity testing; culture should be obtained from deep in the vagina
- Bromocriptine or cabergoline—dopamine agonists: medications that mimic dopamine (a nervous system “messenger”) that leads to a decrease in the hormone, prolactin, and to lysis of the “corpora luteum” or “yellow body” via suppression of prolactin
- Aglepristone—may be used alone or with prostaglandin therapy for inflammation with accumulation of pus in the uterus (pyometra); currently not available in the United States

## **Follow-Up Care**

### **PATIENT MONITORING**

- Recheck serum progesterone levels until below 2.0 ng/ml; “progesterone” is the female hormone produced by the “corpus luteum” or “yellow body” in the ovary; used for pyometra
- Ultrasonography or x-rays—after the progesterone drops below 2.0 ng/ml to monitor clearance of uterine fluid in pets having inflammation with accumulation of pus in the uterus (pyometra)
- Recheck bloodwork (complete blood count [CBC] and serum biochemistry profile) to monitor for generalized (systemic) health
- Recheck packed cell volume (PCV, a means of measuring the percentage volume of red blood cells as compared to the fluid volume of blood) for pets with subinvolution of placental sites to determine blood loss; subinvolution of placental sites is the condition in which the placental attachment sites in the lining of the uterus do not return to normal in 6 to 8 weeks after delivery

### **PREVENTIONS AND AVOIDANCE**

- Depends on cause of vaginal discharge

- Juvenile or puppy vaginitis—delay elective surgical removal of the ovaries and uterus (ovariohysterectomy) until after the first heat or estrous cycle; may avoid long-term (chronic) inflammation of the vagina (vaginitis)
- Avoid use of medications containing female hormones (estrogens or progestins) and male hormones (androgens) in intact bitches; an “intact female” has her reproductive organs and is capable of reproducing
- Spaying (ovariohysterectomy) will prevent inflammation of the lining of the uterus (metritis) or inflammation with accumulation of pus in the uterus (pyometra)

## POSSIBLE COMPLICATIONS

- Bacterial toxins that accumulate in the blood (known as “endotoxemia”) and generalized disease caused by the spread of bacteria in the blood (known as “septicemia” or “blood poisoning”)—seen with inflammation of the lining of the uterus (metritis) or inflammation with accumulation of pus in the uterus (pyometra)

## EXPECTED COURSE AND PROGNOSIS

- Depends on cause of vaginal discharge
- Grave prognosis for future fertility in bitches diagnosed with inflammation with accumulation of pus in the uterus (pyometra) in conjunction with cystic endometrial hyperplasia (CEH), a condition in which the lining of the uterus thickens abnormally and contains fluid-filled sacs or cysts; better prognosis if overt signs of CEH are not present and bitch is bred on next heat or estrous cycle
- Cancer—poor prognosis for future fertility
- Transmissible venereal tumor (TVT)—sexually transmitted disease; breeding should be avoided
- *Brucella canis* infection—sexually transmitted bacterial infection; grave prognosis for resolution of disease and normal fertility; affected pet should not be used for breeding; zoonotic potential (zoonoses are diseases that can be spread from animals to people)

## Key Points

Vaginal discharge is any substance (such as blood, mucus, pus) coming from the vagina, through the vulvar opening

*Blackwell's Five-Minute Veterinary Consult: Canine and Feline, Sixth Edition*, Larry P. Tilley and Francis W.K. Smith, Jr. © 2015 John Wiley & Sons, Inc.