

SPONTANEOUS ABORTION AND PREGNANCY LOSS IN CATS

BASICS

OVERVIEW

- “Abortion” is the delivery of one or more fetuses before it is (they are) capable of surviving outside of the uterus
- “Pregnancy loss” is the death of the embryo, reabsorption of early fetuses, mummification (shriveling or drying up of the fetus, like a mummy), abortion, stillbirths, and outcomes of difficult birth (known as “dystocia”)
- The “queen” is a female cat

GENETICS

- Nonspecific; inbred lines experience higher levels of pregnancy failure than seen in other cats

SIGNALMENT/DESCRIPTION of ANIMAL

Species

- Cats

Breed Predispositions

- Persians and Himalayans—difficult birth (dystocia)

Mean Age and Range

- Noninfectious causes—more common at the birth following the first pregnancy and in queens greater than 6 years of age
- Infectious causes—all ages

Predominant Sex

- Females

SIGNS/OBSERVED CHANGES in the ANIMAL

- May have no clinical signs, especially early in pregnancy or gestation
- Failure to litter on time
- Decrease in abdominal size
- Weight loss
- Delivery of recognizable fetuses or placental tissue
- Lack of appetite (known as “anorexia”)
- Vomiting, diarrhea
- Behavioral changes
- Discharge from the vulva that contains blood or pus—frequently unnoticed in fastidious queens (that is, queens that groom or clean themselves with meticulous attention) or with early pregnancy or gestational losses; the “vulva” is the external genitalia of females
- Disappearance of fetuses previously documented by physical examination (palpation), ultrasound examination, or X-rays
- Abdominal straining, discomfort
- Depression
- Dehydration
- Fever

CAUSES

Infectious Disease

- Viruses—feline panleukopenia virus; feline herpesvirus; feline calicivirus; feline leukemia virus (FeLV); feline immunodeficiency virus (FIV)
- Bacteria—*Escherichia coli*; *Streptococcus*; *Staphylococcus*; *Salmonella*; *Mycoplasma*; *Mycobacterium*
- *Coxiella burnetii* (Q fever)
- *Toxoplasma gondii* (probably uncommon)

Noninfectious—Reproductive Causes

- Early loss of the embryo
- Difficult birth (dystocia)
- Disease of the lining of the uterus (known as “endometrial disease”)—cystic endometrial hyperplasia (CEH), a condition in which the lining of the uterus thickens abnormally and contains fluid-filled sacs or cysts; very common
- Hormonal disorders
- Inadequate placenta
- Fetal defects—genetic or developmental (anatomic, metabolic, and chromosomal abnormalities)
- Excessive or poorly planned inbreeding and/or poor choices of breeding stock—indirect evidence; difficult diagnoses without thorough family history and test matings

- Effects of social hierarchy in group setting; behavioral disorders in individuals
- Agents that induce abortion (known as “abortifacient drugs”)—luteolytics (such as the prostaglandin, $\text{PGF}_{2\alpha}$); estrogens; prolactin inhibitors (such as cabergoline); steroids; tamoxifen citrate (dogs); mifepristone (dogs); epostane (dogs)

Noninfectious—Nonreproductive Causes

- Nutrition—low taurine intake (taurine is an amino acid [protein] that is an important component of the diet of cats; cats cannot produce enough taurine in their bodies and so, must obtain taurine from their food to maintain health); nutritional fads; some nutraceuticals
- Severe stress—environmental; physiological; psychosocial
- Trauma
- Some medications
- Consequence of severe, generalized (systemic) disease involving systems other than the reproductive system

RISK FACTORS

- Prior history of pregnancy loss or poor reproductive performance (may be history of individual queen or the cattery)
- Coexistent, severe sudden (acute) or long-term (chronic) disease
- Excessive inbreeding
- Birth following the first pregnancy or queen greater than 6 years of age
- Environmental stress—crowding, poor sanitation, noise, temperature or humidity extremes
- Social order in cattery
- Exotic breeds—often reproduce poorly in large catteries or high-density environments
- Obesity or inappropriate nutrition

TREATMENT

HEALTH CARE

- Outpatient medical management—medically stable patients; suspected hormonal disorders; disease of the lining of the uterus (endometrial disease); noninfectious/nonreproductive pregnancy loss
- Inpatient medical management—abortion imminent or taking place; clinical illness; potential zoonoses—diseases that can be passed from animals to people (unless safe and effective outpatient treatment can be assured); patients being treated with the prostaglandin, $\text{PGF}_{2\alpha}$
- Aborted fetus or discharge may be infectious; isolate patient
- Practice strict sanitation for inpatient or outpatient treatment
- Correct dehydration—administer fluids (such as Normosol® or lactated Ringer’s solution)

ACTIVITY

- No limitations, unless an infectious agent is suspected or documented for outpatients
- Isolate infectious patients (preferred)

DIET

- No special dietary considerations for uncomplicated cases
- Persistent diarrhea or other causes of fluid loss—veterinary diet and fluid therapy

SURGERY

- Surgical management—spay or ovariohysterectomy (surgical removal of the ovaries and uterus) for stable patients with no breeding value or if necessary to preserve queen’s life

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.

- Depend on underlying causes
- Antibiotics—amoxicillin, pending results of bacterial culture and sensitivity testing
- Prostaglandin ($\text{PGF}_{2\alpha}$)—may be used to stimulate and evacuate the uterus in cases with non-viable fetuses or significant uterine contents noted on ultrasound examination; discuss risks and benefits of prostaglandin treatment with your cat’s veterinarian
- Progesterone/progestogens—safe and effective doses for pregnancy maintenance not established; may cause or worsen cystic endometrial hyperplasia (CEH), a condition in which the lining of the uterus thickens abnormally and contains fluid-filled sacs or cysts

FOLLOW-UP CARE

PATIENT MONITORING

- Re-evaluate 7 to 14 days after completion of prostaglandin (PGF_{2α}) treatment
- Repeat ultrasound examination—evaluate uterine evacuation or fetal viability

PREVENTIONS AND AVOIDANCE

- Genetic problems require attention to breeding program
- Infectious causes require surveillance and control measures
- Spay or ovariectomy for cats with no breeding value

POSSIBLE COMPLICATIONS

- Generalized bacterial infection (known as “sepsis”)
- Shock
- Uterine rupture
- Inflammation of the lining of the abdomen (known as “peritonitis”)
- Inflammation of the lining of the uterus (known as “metritis”)
- Inflammation with accumulation of pus in the uterus (known as “pyometra”)
- Bleeding
- Infertility
- Obesity following spay or ovariectomy in mid-life queens
- Cystic endometrial hyperplasia (CEH, a condition in which the lining of the uterus thickens abnormally and contains fluid-filled sacs or cysts) following progestogen therapy; progestogen is any substance capable of producing the effects of the female hormone, progesterone

EXPECTED COURSE AND PROGNOSIS

- Symptomatic retrovirus infection—poor prognosis
- Long-term (chronic) infertility—common after 6 years of age
- Queens not bred prior to 3 to 4 years of age experience higher infertility
- Severe cystic endometrial hyperplasia (CEH, a condition in which the lining of the uterus thickens abnormally and contains fluid-filled sacs or cysts)—recovery of fertility unlikely; inflammation with accumulation of pus in the uterus (pyometra) is a common complication
- Genetic abnormalities causing difficult birth (dystocia) or loss of most or all of litter—guarded to poor prognosis for further reproduction
- Repeated difficult births (dystocias)—recurrence depends on cause; guarded prognosis if cause not ascertained
- Hormonal disorders—often manageable; consider genetic aspects

KEY POINTS

- Zoonoses (diseases that can be passed from animals to people) can be causes of abortion or pregnancy loss in cats; discuss the potential of a zoonosis causing your cat’s abortion or pregnancy loss with your pet’s veterinarian
- Maintain careful records of reproductive performance for each queen and for the cattery
- Establish disease surveillance and control measures; may require significant changes in cattery management and breeding stock selection
- For breeding cats—consider risks and possible side effects associated with non-surgical solutions, particularly with infectious or genetic causes of pregnancy loss
- Infertility—may result despite successful treatment; may be secondary to conditions pre-existing the pregnancy loss
- Prostaglandin treatment—consider risks and possible side-effects
- Spay or ovariectomy—indicated for primary disease of the uterus for queens with no breeding value