

Difficult Birth

(Dystocia)

Basics

OVERVIEW

- “Dystocia” is the medical term for difficult birth
- The female dog is a “bitch”; the female cat is a “queen”
- A “fetus” (plural, fetuses) is the unborn young (that is, still in the uterus) puppy or kitten

GENETICS

- Some forms of difficult birth (dystocia) may be hereditary— inactivity or lack of forceful contractions of the uterus (known as “uterine inertia”), conformational defects in anatomy (pelvic diameter and/or shape)

SIGNALMENT/DESCRIPTION OF PET

Species

- Dogs
- Cats

Breed Predilections

Dogs

- Higher incidence with miniature and small breeds due to small litter size with resulting relative large size of the fetus; may occur in large breeds with large litters or single-puppy litters
- Short-nosed, flat-faced (known as “brachycephalic”) breeds—broad head and narrow pelvis, such as in bulldogs, Boston terriers, pugs
- Large fetal head-to-maternal pelvis ratio—Sealyham terrier, Scottish terrier
- Inactivity or lack of forceful contractions of the uterus (known as “uterine inertia”)—Scottish terrier, dachshund, border terrier, Aberdeen terrier, Labrador retriever
- Miscellaneous dog breeds with overall increased incidence of difficult birth (dystocia) as compared to other breeds—Chihuahua, dachshund, Pekingese, Yorkshire terrier, miniature poodle, Pomeranian

Cats

- Short-nosed, flat-faced (brachycephalic) breeds—Persian, Himalayan
- Breeds with long head and nose (known as “dolichocephalic breeds”)—Devon rex

Mean Age and Range

- Likelihood of difficult birth (dystocia) increases with age

SIGNS/OBSERVED CHANGES IN THE PET

- More than 30 minutes of persistent, strong, abdominal contractions without expulsion of offspring
- More than 4 hours from the onset of strong, abdominal contractions to delivery of first offspring (length of time can vary based on individual animal and species; however, if more than 4 hours have passed without delivery of first offspring, contact your pet's veterinarian)



- More than 2 hours between delivery of offspring (length of time can vary based on individual animal and species; however, if more than 2 hours have passed between delivery of offspring, contact your pet's veterinarian)
- Failure of a bitch to go into labor within 24 hours of the drop in rectal temperature below 37.2° C (99° F) or within 36 hours of serum progesterone dropping to less than 2 ng/ml
- Female cries, displays signs of pain, and constantly licks the vulvar area (external genitalia) when delivering
- Prolonged pregnancy or gestation in the bitch—more than 72 days from day of first mating; more than 59 days from the first day following “standing heat” (diestrus) as demonstrated by microscopic examination of vaginal cells; more than 66 days from luteinizing hormone peak; “luteinizing hormone” is a female hormone—it maintains the “corpus luteum” or “yellow body” in the ovary that produces the female hormone progesterone, which supports and maintains the pregnancy
- Prolonged pregnancy or gestation in the queen—more than 68 days from the day of mating

Physical Examination

- Abnormalities noted on physical examination.
- Presence of greenish-black discharge preceding the birth of first offspring by more than 2 hours
- Presence of bloody discharge prior to delivery of first offspring or between fetuses

CAUSES

Fetal

- Oversize—singleton litters (that is a litter with only a single fetus); fetal monsters, buildup of fluid (known as “edema”) in the tissues of the fetus (known as “fetal anasarca”); buildup of fluid in specific areas of the brain of the fetus (known as “fetal hydrocephalus”); prolonged pregnancy or gestation due to inability of a singleton fetus to initiate labor
- Abnormal presentation, position, or posture of fetus in the birth canal
- Fetal death

Maternal

- Poor uterine contractions—uterine muscle defect; biochemical imbalance; psychogenic disturbance; exhaustion
- Ineffective abdominal press—pain; fear; debility (exhaustion); diaphragmatic hernia; perforated windpipe (trachea); age
- Inflammation of the placenta (known as “placentitis”), inflammation of the uterus (known as “metritis”), inflammation of the lining of the uterus (known as “endometritis”)
- Pregnancy toxemia, gestational diabetes
- Abnormal pelvic canal from previous pelvic injury, abnormal conformation, or pelvic immaturity
- Congenitally small pelvis—Welsh corgis; short-nosed, flat-faced (brachycephalic) breeds; “congenitally” refers to congenital, which is something that is present at birth
- Inguinal hernia
- Abnormality of the vaginal vault—narrowing of the birth canal or vagina (known as a “stricture”); presence of a thin wall dividing the birth canal into two canals (known as “vaginal septae”); enlargement or thickening of the wall of the birth canal (known as “vaginal hyperplasia”); vaginal cyst; cancer; poorly developed vagina (known as a “hypoplastic vagina”)
- Abnormality of the vulvar opening—narrowing of the vulva (external genitalia); inverted vulva; small vulva; scarring of the vulva from trauma; cancer
- Insufficient cervical dilation
- Lack of adequate lubrication
- Twisting of the uterus (known as “uterine torsion”)
- Uterine rupture
- Uterine tumors, cysts or scar tissue (known as “adhesions”)

RISK FACTORS

- Age
- Short-nosed, flat-faced (brachycephalic) breeds and toy breeds
- Cats—Persian, Himalayan, and Devon rex
- Obesity

- Abrupt changes in environment during the period before, during, or after delivery (known as the “peripartum period”)
- Previous history of difficult birth (dystocia)

Treatment

HEALTH CARE

- Inpatient—until delivery of all offspring and mother has stabilized
- Fluid replacement—balanced electrolyte solutions; for clinical dehydration
- Inactivity or lack of forceful contractions of the uterus (uterine inertia)—initiate medical treatment, if no evidence of fetal stress; uterine inertia may be due to low blood sugar (known as “hypoglycemia”), low levels of calcium in the blood (known as “hypocalcemia”) or inadequate production of oxytocin or inadequate response to normal oxytocin production; “oxytocin” is a female hormone that causes uterine contractions and promotes milk release during lactation; appropriate treatment should be started once the cause of uterine inertia has been determined
- Medications to stimulate uterine contraction should not be administered in the face of possible obstructive dystocia (where a condition exists that blocks the passage of the fetus through the birth canal) as they may accelerate placental separation and fetal death, or may cause uterine rupture
- Hypoglycemia—administration of balanced electrolyte solution with 5–10% dextrose intravenously
- Hypocalcemia—administration of 10% calcium gluconate by injection
- Oxytocin—after correction of glucose and calcium deficits, oxytocin can be administered to stimulate contractions

Manual Delivery

- To deliver a fetus lodged in the birth canal
- Apply lubrication liberally; place the pet in a standing position
- Digital manipulation—least amount of damage to fetus and dam
- Instrument delivery (bitches)—if the birth canal is too small for digital manipulations
- Use extreme caution; undesirable sequelae include mutilation of the fetus and laceration of the birth canal
- Traction should not be applied to the lower legs of a live fetus
- Queens—use of instruments not recommended because of the small size of the birth canal
- Failure to deliver a fetus located in the birth canal within 30 minutes—cesarean section indicated

SURGERY

- Indications for cesarean section—inactivity or lack of forceful contractions of the uterus (uterine inertia) unresponsive to oxytocin or a responsive uterine inertia, but with more than 4 fetuses remaining in the uterus (to maximize fetal survivability); pelvic or vaginal blockage (obstruction); inability to correct abnormal position of the fetus; oversized fetus; fetal stress; death of the fetus in the uterus
- **Elective cesarean section**—breeds prone to difficult birth (dystocia); bitches with a history of dystocia; bitches with a single fetus in the litter or very large litters; elective cesarean section often performed to maximize fetal survivability

Anesthesia

General Comments

- Provide fluids before, during, and after surgery
- The pregnant uterus can put pressure on the large blood vessels and decrease blood return to the heart, while putting pressure on the diaphragm resulting in decreased volume of air being inspired during a single breath
- Preoxygenation of pets will improve maternal and newborn outcome
- A variety of medications can be used during the preoperative, operative, and postoperative periods; they include such medications as glycopyrrolate, atropine, propofol, gas anesthetics (such as isoflurane or sevoflurane), diazepam, ketamine, butorphanol, and oxymorphone; your pet's veterinarian will choose the anesthetic protocol for your pet

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

- Oxytocin—to stimulate contractions for cases with inactivity or lack of forceful contractions of the uterus (uterine inertia)

Follow-Up Care

PATIENT MONITORING

- Ultrasound examination—recommended; monitor fetal heart rate during medical management of inactivity or lack of forceful contractions of the uterus (uterine inertia)

PREVENTIONS AND AVOIDANCE

- Schedule elective cesarean section for bitches with abnormal pelvic canal; small pelvis; birth canal abnormalities; breeds likely to have difficult birth (dystocia); dams with previous history of inactivity or lack of forceful contractions of the uterus (uterine inertia)
- Scheduling of surgery should be based on timing of ovulation and breeding or ultrasound examination to determine gestational age to ensure acceptable fetal survivability; “ovulation” is the release of the egg from the ovary

POSSIBLE COMPLICATIONS

- Increased risk of difficult birth (dystocia) in future pregnancies with some causes
- Loss of puppies or kittens in the litter, if treatment is not begun promptly

EXPECTED COURSE AND PROGNOSIS

- If difficult birth (dystocia) is identified promptly and intervention is successful—prognosis is good to fair for life of the dam; fair for survival of offspring
- If dystocia unrecognized or untreated for 24–48 hours—prognosis is poor to guarded for life of the dam; unlikely that any offspring will survive (dogs); highly variable depending on cause (cats)

Key Points

- “Dystocia” is the medical term for difficult birth
- Schedule elective cesarean section for bitches with abnormal pelvic canal; small pelvis; birth canal abnormalities; breeds likely to have difficult birth (dystocia); dams with previous history of inactivity or lack of forceful contractions of the uterus (uterine inertia)
- Identify difficult birth (dystocia) quickly and when it occurs, contact your pet's veterinarian for appropriate treatment
- If difficult birth (dystocia) is identified promptly and intervention is successful—prognosis is good to fair for life of the dam; fair for survival of offspring
- If dystocia unrecognized or untreated for 24–48 hours—prognosis is poor to guarded for life of the dam; unlikely that any offspring will survive (dogs); highly variable depending on cause (cats)