

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”

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)

SIGNALMENT/DESCRIPTION of ANIMAL

Species

Dogs and cats

Breed Predislection

Dogs

Higher incidence with miniature and small breeds due to small litter size; may occur in large breeds with large 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 (uterine inertia)—Scottish terrier, dachshund, Border terrier, Aberdeen terrier, Labrador retriever

Miscellaneous dog breeds with overall increased incidence of difficult birth (dystocia)—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 ANIMAL

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 (dogs); 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

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, build-up of fluid (known as “edema”) in the tissues of the fetus (known as “fetal anasarca”); build-up 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

Persian and Himalayan

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 as they may accelerate placental separation and fetal death, or may cause uterine rupture

Hypoglycemia—administration of balanced electrolyte solution with 5% to 10% dextrose intravenously

Hypocalcemia—administration of 10% calcium gluconate by injection

Whelpwise® monitoring systems can be used to monitor fetal heart rates and uterine contractions and are excellent for bitches with a prior history of uterine inertia or with large litters to determine need for and response to medical treatment

Manual Delivery

To deliver a fetus lodged in the birth canal

Apply lubrication liberally; place patient in a standing position

Digital manipulation—least amount of damage to fetus and dam

Instrument delivery (dogs)—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

Cats—use of instruments not recommended because of the small size of the birth canal

Failure to deliver the fetus 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 obstruction; inability to correct fetal malposition; fetal oversize; fetal stress; fetal death 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 during 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

Pre-oxygenation of patients 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 to ensure acceptable fetal survivability

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 to 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 to 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)