

Guide to Emergency Interception During Parturition in the Dog and Cat

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KEYWORDS

• Parturition • Emergency • Bitch • Queen

Parturition in the dog and cat allows many opportunities for emergency intervention to become necessary. Knowledge of normal parturition is a requirement for the emergency situation to be properly identified. Clients who are breeders of purebred dogs and cats may be able to alert the attending clinician to observed problems with a particular parturition, but many of the emergency presentation will involve owners with little background information on the bitch or queen and inaccurate information related to breeding dates or even when the breeding did occur.

Normal gestation in the bitch is approximately 63 days with a range of 56 to 72 days from date of first known breeding. The variability in gestation length is due to the long life span of the spermatozoa in the genital tract of the bitch. When calculated from the date of the luteinizing hormone peak or from the date of ovulation, gestation is much more predictable with a gestation length of 65 ± 1 day from the luteinizing hormone surge or 63 ± 1 day from ovulation.^{1,2} Litter size can have an effect on gestation length, with gestation being shorter for large litters and longer for smaller litters.

Normal gestation in the queen is approximately 65 days with a range of 52 to 74 days from breeding to the onset of parturition.^{3,4} The queen is an induced ovulator and may allow multiple matings to the same or multiple toms over a period of several days. A queen that is bred by more than 1 male may have kittens sired by different toms (superfecundation). A cat breeder will often have breeding dates recorded, but the accidentally bred or casually bred queen will typically present with no information on breeding dates. Length of gestation in the queen is influenced both by litter size and by breed, although litter size is not as well correlated with gestation length in the

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Box 1**Breeds of dog with high incidence of dystocia**

- Boston Terrier
- Scottish Terrier
- Pekinese
- Mastiff
- Clumber Spaniel
- Dandie Dinmont
- French Bulldog
- German Wirehair Pointer
- Bulldog
- Miniature Bulldog

queen as it is in the bitch.⁴ The Burmese breed is reported to have an average litter size of 5 kittens, and the chinchilla cat, an average litter size of 2.8 kittens.⁵

There are 3 stages of parturition in both the bitch and the queen. Stage I is clinically unapparent and is marked by increasing uterine contraction and gradual cervical dilation. Stage I labor in the bitch typically lasts 6 to 12 hours but may last as long as 36 hours. A bitch can delay parturition when she is nervous or in unfamiliar and busy surroundings. During this period the bitch is typically restless, pants, may refuse food, and begins nesting behavior. Duration of stage I labor in the queen may be shorter and is characterized by vocalization, rapid breathing, restlessness, and loud purring. Stage II involves the process of fetal expulsion through the fully dilated cervix. This stage typically lasts 3 to 12 hours in the bitch (averaging about 1 puppy per hour) and 4 to 16 hours in the queen with an occasional queen delivering the last kitten after 42 hours. Parturition length of beyond 42 hours is not normal. Stage III labor involves placental passage. A placenta typically follows delivery of the fetus either immediately or within 15 minutes. Several placentas may be delivered at once.

Dystocia or difficult birth is the most commonly encountered emergency occurring during parturition. Rate of dystocia varies from 2% (of insured dogs in Sweden) to an overall reported dystocia rate of 5%.⁶ In the queen, the incidence of dystocia is reported as 3.3% to 5.8% of parturitions.⁷ Risk factors for dystocia include breed, age of bitch, parity, litter size, and body size of bitch. Older primiparous bitches (>6 years of age) have a significantly increased risk of having problems during parturition and have an increased incidence of stillbirths. Breeds with a high incidence of dystocia are provided in **Box 1**. Bitches of miniature and small breeds had an increased incidence of dystocia.⁸ Uterine inertia and spasm, malpresentation of the fetus, and single pup or large litter size are the most common causes for dystocia. Breeds with the highest caesarean rates are brachycephalic breeds, terrier breeds, Pekinese and a few gundogs.⁸ In the Boston terrier, bulldog, and French bulldog, the caesarean rate is greater than 80%.⁸

A summary for the clinical signs associated with dystocia is provided in **Box 2**. Clinical signs associated with a diagnosis of dystocia are failure to deliver a fetus for longer than 24 hours after the onset of stage I labor, a temperature drop below 99°F (30°C), 60 minutes of active labor with no fetus delivered, protrusion of fetal membranes from the vulva for 15 minutes or longer without delivery of the fetus,

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