

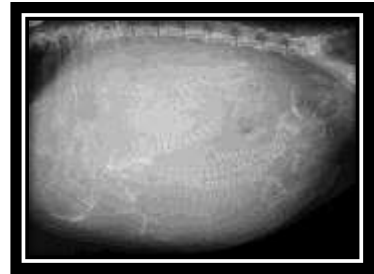
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## Cesarean Section (a.k.a. C-Section)

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The beauty and rhythm of a mother giving birth to her babies is wonderful. But just like in humans, at times veterinarians need to give added support to a mother in trouble. When the babies cannot be coaxed through the vaginal canal a surgical procedure called a Cesarean Section is performed.

Dogs and cats have a normal gestation length of 63 days from time of breeding. Relative to humans this is a short amount of time to have optimal organ development, especially heart and lung tissue. The timing of the C-section, if performed as an elective surgery, is very important. Dogs and cats can breed over several days during their estrus cycle and the resulting offspring may not all be exactly the same age. If the fetus is removed too early from the uterus, they may not be able to breathe on their own. Some dog breeds (i.e. English Bulldogs) typically require C-sections as the mother's pelvic canal is too small to allow passage of the puppies' large heads.



Outside of a few breeds of dogs, C-sections are mainly performed on an emergency basis. For a wide variety of reasons the mother cannot complete the labor process and expel the pregnancy. These reasons may be an electrolyte imbalance, uterine fatigue, twisting of the uterus, or limitations in pelvic canal opening relative to fetus size. Typically these mothers present to a veterinarian after the owners notice unproductive labor or green uterine discharge and no puppy or kitten passed within 30 minutes. The green discharge represents separation of the placenta from the uterine wall and to be viable the puppy or kitten needs to be born within 30 minutes.



The veterinarian typically will perform a digital exam to see if vaginal birth is possible or to manipulate a "stuck" puppy or kitten. Radiographs may be taken as well to check on number of babies in the uterus and any other abnormalities that may interfere with the natural birth process. Lab work may be warranted to check blood calcium levels and, if needed, supplements are given that will improve the muscular contractions. Sometimes just giving some additional oxytocin will stimulate the uterus to expel the pregnancy.

If a C-section is the best option an IV catheter is placed for fluid support through the procedure and injection of the anesthetics. Whatever anesthesia the mother receives the babies acquire too which makes their recovery longer. It is important to have as many team members present as possible to help with the puppies or kittens, drying them and stimulating them to start breathing to enhance survivability. Induction of anesthesia is with rapidly metabolized drugs and then the mother is transitioned to gas anesthesia quickly. The abdomen is prepped for surgery while the surgeon is getting ready. Ideally the abdominal incision is made within 10-20 minutes after anesthesia is started. The fetus' are removed individually from the uterus and handed off to an assistant to start the revival process. Depending on the



integrity of the uterus and the owner's preference, the surgeon may elect to simply suture the uterus for future pregnancy's or remove the uterus and ovaries and sterilize the female.

In the best case scenarios, the surgeon will be able to hear the squeaking of the babies while finishing the surgery. After surgery the babies are placed on the mammary glands to get their first feeding while the mother is waking up from the anesthesia. As soon as she is able to walk steadily, she is discharged from the hospital with the babies to return to her more comfortable whelping area.

If you have any further questions about C-sections please feel free to contact us at (920) 668-6212 or send us an email at [info@cgvet.com](mailto:info@cgvet.com).