

ACBA: Health

## **DYSTOCIA IN CAVIES**

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Dystocia, the inability of a sow to deliver her litter normally, should be a point of concern for all cavy breeders. The physiologic fact that a sow gives birth to young of a size approximately 10% of her bodyweight enhances the probability of a difficult delivery.

Many variables, some manageable and some not, may increase the risk of dystocia. To reduce the incidence of dystocia and improve the outcome of treatment, the cavy breeder needs to be aware of risk factors and recognize early signs of problems. This article will outline several of the causes of dystocia, contributory risk factors, and first-hand observations.

Normal parturition in the cavy is a very rapid process, usually lasting between 30-45 minutes total. Once the strong abdominal contractions are observed, a baby will follow in about 5 minutes or less. The interval between delivered pups is only about 3-7 minutes. Impending parturition may be monitored by separation of the pubic symphysis.

The symphysis is a fibrocartilaginous bridge binding together the right and left pubic bones that form the lower part of the pelvic canal. During maturation in males and unbred females, this bridge calcifies and becomes permanently fused, a normal result of skeletal bone development. In pregnant females, the hormone relaxin causes the pubic symphysis to "relax" and stretch, allowing the separation of the pubic bones to increase the diameter of the birth canal. The separation is anywhere from .5" to 1.5" just before delivery. The symphysis opens approximately 5-7 days before delivery and returns to normal within 24 hours after parturition.

The primary indication of dystocia is active labor or evidence of active labor without the production of a pup. Either the sow may be healthy, alert, and in hard labor for more than 10 minutes, not producing a pup or showing only a foot or nose protruding from the birth opening, or the sow may be discovered in the cage weak and depressed, some blood in the bedding, producing mild or no contractions. Timely determination of the cause of dystocia and prompt treatment increase the chances of survival of both mother and pups.

The most common causes of dystocia relate to fetal size and malposition. Usual birth weights range from 70-115g (2.5 - 4 oz) with 2-4 babies in the litter. Pup size increases in smaller litters, especially with only 1 or 2 babies. Obviously, even with a wide-open symphysis, passage of a 5-6 oz pup becomes difficult. In cases where the pubic symphysis separates inadequately or not at all, even normal sized pups may not pass.

In rare cases, fetal malformations such as Siamese twinning and the "bull-backed" abnormality (associated with the lethal gene of roans, producing a massive, short-backed, arched fetus with an enlarged head) will occur. These feti are rarely delivered by normal passage through the birth canal.

The positioning of the pup in the birth canal may also produce difficulties. Breech presentation may be normal, but problems are experienced when only one rear leg is presented in the opening or when the head/pelvis are extremely large. Other positional problems occur when one or both front legs point 'backward' instead of out; the head is trying to exit facing backward, sideways (ear first), or tipping downward; or when the baby 'missed the door' and has the back or shoulders presented at the birth opening.

Another cause of dystocia is uterine inertia, where the uterus does not or no longer produces contractions. Uterine inertia may result from muscle fatigue in cases of fetal size and positional dystocia as described previously. In these situations, the sow may be alert or appear weak from the exertion and may have a fetus visible or palpable in the birth canal. Uterine inertia may also result from overt or underlying pregnancy toxemia, low blood calcium, or infection. The toxins produced by infection or pregnancy ketosis weaken the uterine musculature. Because calcium is required for muscular contraction, inadequate dietary sources and/or increased demand (such as during pregnancy) contribute to the uterine weakness.

Initial treatment starts with identifying the cause of the dystocia by examining the birth canal opening visually or with a scrubbed, disinfected, and

lubricated finger. A pup's presence and position in the canal should be determined.

If the sow is already weak, providing energy and calcium before starting any procedures will improve her chances. A mixture of Karo syrup, Tums or other calcium source, and yogurt given by syringe or eyedropper will provide a quick boost and sometimes cause a resumption of contractions.

Sometimes, malpositioned pups and large pups can be extracted manually with careful redirection and gentle traction. **THIS IS NOT WITHOUT RISK!**

Vaginal or uterine tears and/or prolapse can result, even when performed by experienced manipulators. Oxytocin may be helpful in some situations to improve the force of contractions or stimulate the production of contractions. It can be dangerous, if not fatal, when used if the birth canal is still blocked by a fetus too large or malpositioned to pass or if the pubic symphysis is not open. Oxytocin is also ineffective if the uterine muscle is too fatigued to respond. As with any muscular exertion, exhausted muscle needs rest before it can resume contraction. If the pup cannot be extracted due to size or position, a Caesarian section would be necessary. In any case where you are uncertain, questions should be directed to a qualified veterinarian or experienced breeder before proceeding.

Obviously, all risk factors involved in dystocia cannot be controlled. However, some factors can be managed to reduce the incidence. Preventing obesity and providing adequate space for exercise lead to a stronger, healthier brood sow. Monitoring food intake and dietary calcium in late gestation may decrease the chances for uterine inertia. The use of a pelleted cavy feed with protein levels less than 20% may reduce excessive birth weight. The first breeding of sows should be at an age young enough to maximize the separation of the pubic symphysis and reduce fat deposition in the birth canal but mature enough to handle pregnancy in a healthy manner. Sometime between 4-6 months of age and approximately 16-20 oz in bodyweight is the general recommendation.

Although not an extremely common occurrence, cavy breeders should be aware of and prepared for the possibility of dystocia with every cavy delivery.

From personal experience, I can say that cavies do not read the books or play by the rules. I'm sure most of you long time breeders can relate to this and the following. I've had sows successfully deliver their first litter at ages 13 months, 16 months, and 18 months. I've lost two sows whose first attempted delivery was at 7 months of age and 11 months of age respectively. These sows were healthy, the pregnancies were full term, and the pubic symphysis did not open at all. I've had two sows whose first pregnancy came at 2+ years of age; pubic symphyses did not open - preplanned C sections were successful. I've had sows deliver a single, large pup in excess of 6 oz birth weight, usually with human assistance (one sow did it solo AND the baby survived). I've had weakened sows with uterine inertia and carrying multiple dead feti that, when given Karo, Tums, and quiet time to rest, have gone on to empty the uterus and survive and breed successfully later. Others have not.

I rarely use oxytocin. I don't like to 'play God' and induce labor with it except in special circumstances. I've used it a couple of times to try and speed up a slow delivery that I suspected was due to mild inertia. I've used it previously as a final effort in weakened (dying) toxemic sows in an attempt to get the dead babies out - usually futile. The only times I've thought it helpful were in cases of positional dystocia to stimulate better contractions after the problem fetus was repositioned or removed. And always before giving the injection, I give Karo, Tums, and yogurt. The uterine muscle definitely won't respond without adequate energy and calcium.

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