



Vet Call

► by **Bob Larson**, professor of production medicine, Kansas State University

Cystic ovaries in beef cows

Cystic ovarian disease is one of the most common diagnoses associated with lack of fertility in individual cows. Cystic ovaries are more common in dairy cows, but can occur in beef cattle.

Recognize symptoms

The behavior of affected cows and the actual size and structure of a cystic ovary can vary considerably between cows. The diagnosis is usually made based on a combination of abnormal behavior — either prolonged heat activity or prolonged lack of heat activity, and abnormal size and shape of an ovary as determined by palpation or ultrasound examination of the reproductive tract.

Ovaries are the egg-producing organs in heifers and cows. There are two ovaries. Usually one will ovulate a fertile egg at about the end of each standing heat. At ovulation, a large follicle, which is filled with fluid and contains the microscopic egg, bursts and the egg is released to travel down the reproductive tract.

If the cow has been mated by a bull or artificially inseminated (AIed), the egg can join with sperm and begin development to eventually become a calf.

After ovulation, the tissue that made up the wall of the follicle and some surrounding tissue becomes the corpus luteum (CL). If the cow becomes pregnant, the CL is maintained until the calf is ready to be born. If the cow does not become pregnant, the CL is destroyed a few days before the next standing heat, and the cycle starts again.

Occasionally, this process does not proceed normally and a follicle on one of the ovaries develops but does not ovulate at the correct time. When this happens, the cow is described as having a cystic ovary. If a follicle persists, or becomes cystic, and continues to secrete the hormone estrogen, the cow will stay in active heat for many days.

Sometimes excess androgen hormones are produced and the cow will begin bull-like behaviors such as bellowing, pawing the ground and frequent mounting of other cows. If the persistent follicle forms luteinized tissue (similar to a CL), the

luteinized cyst secretes the hormone progesterone, and the cow will stay out of heat, even though she is not pregnant. Rather than excessive sexual behavior, cows affected by a luteinized cyst show a lack of sexual behavior.

A difficult diagnosis

Diagnosis of cystic ovaries based on a single palpation or ultrasound examination without accurate records of heat activity is difficult because cystic structures are very similar to normal structures on the ovary during particular days of the reproductive cycle.

When combined with a history of abnormal heat activity, an examination of a suspected follicular cyst by palpation or with an ultrasound probe typically reveals an enlarged and smooth ovary with multiple large follicles. The firmness and feel of the uterus differs from a normal reproductive tract. A fluid discharge from the reproductive tract is common, and in long-term cases the uterus can become shortened or extremely thin-walled.

In cases of luteal cysts, the ovary is enlarged and the reproductive tract feels similar to a normal tract in the middle stage of the estrous cycle.

Cause and cure

Cystic ovaries are caused when the series of events that control reproductive cycles and involve hormones in the brain, pituitary gland and reproductive tract do not occur normally. Cystic ovaries have been reported to be more common in older cows and to be more common within some

family lines. It has been suggested that stress, such as weight loss, can serve as a trigger.

Cows with cystic ovaries can spontaneously cure and resume normal behavior and fertility. In addition, cystic ovarian disease is often treated successfully with injections of appropriate hormones that mimic the normal changes in hormone concentrations associated with fertile reproductive cycles. Cystic follicles are usually treated with an injection of gonadotropin-releasing hormone (GnRH) or a similar-acting hormone. This injection will mimic the increase in GnRH that occurs in each heat cycle and will often successfully restart the normal series of hormone

changes necessary for fertile cycles.

For luteal cysts, treatment involves an injection of prostaglandin $F_{2\alpha}$, which destroys the luteal tissue to mimic the normal destruction of the CL that occurs with each cycle that does not result in pregnancy. A fertile cycle can follow within a few days of an injection of prostaglandin in the case of luteinized cysts, and within 30 days following a GnRH injection in the case of follicular cysts.

Prevention of cystic ovaries is not specific and involves good husbandry practices, such as supplying a diet that provides adequate energy, protein and minerals both

pre- and postcalving; and feeding practices that ensure good feed intake for all individuals in the herd.

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E-MAIL: rlarson@vet.ksu.edu