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CAUSES, MORPHOFUNCTIONAL CHANGES AND TREATMENT OF OVARIAN CYSTS IN COWS

(Based on a review of the literature)

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Abstract. This article examines the etiology, primary syndromes, clinical signs, diagnosis, treatment, and preventive measures regarding ovarian cysts in cows.

Keywords: Ovary, cyst, follicular, corpus luteum, infertility, microscopic morphofunctional, cycle, clinical, pathogenesis, ration, physical activity (exercise), rectal, diagnosis, prophylaxis.

Relevance of the topic: Global population growth is driving an increased demand for food; however, issues such as declining birth rates in certain breeding operations and infertility among female animals are leading to a sharp reduction in the supply of meat, meat products, milk, and dairy products. Furthermore, these factors contribute to a deterioration in the quality of these food products and a rise in prices. The current decline in the reproductive capacity of livestock—manifested by an increasing proportion of non-pregnant or infertile animals—is primarily linked to the aforementioned factors. The economic losses resulting from infertility and the failure of animals to reproduce are determined by several factors: the loss of potential offspring (such as calves) and the subsequent loss of meat and milk production (with milk losses reaching 30–35% of the expected total yield); the costs incurred for the maintenance, care, and feeding of infertile animals; expenditures on veterinary treatments and medications; and the overall increase in production costs and the unit cost of the final products.

Infertility and barrenness in animals stem from various external and internal factors, including gross violations of housing and feeding conditions, diseases of the reproductive organs, and—significantly—poorly planned breeding practices.

Regular assessments in livestock operations have revealed a high prevalence of obstetric and gynecological disorders among the cows being kept. Consequently, the effective treatment of these conditions and the implementation of robust preventive measures are critical priorities for future development. Only by addressing these issues can the reproductive potential of female livestock be fully utilized, leading to superior outcomes in terms of breeding quality, productivity, and fertility. Maintaining optimal fertility rates in cows enables maximum calf production and higher milk yields. Long-standing experience in the livestock sector shows that, in many operations, the yield is only 70–80 calves per 100 cows.

The recovery of reproductive functions in cows following calving, as well as their milk yield and other aspects of their postpartum status, are significantly dependent on how the postpartum period progresses. Ensuring that the physiological recovery of the reproductive organs proceeds normally and without complications is currently a critical and urgent issue. Among the various challenges, ovarian disorders—specifically ovarian cysts—frequently occur in breeding herds, leading to delayed estrus and infertility, which results in substantial economic losses.

Ovarian cyst (Cystis ovariorum). An ovarian cyst consists of unruptured follicles containing degenerated egg cells, or it is a structure that forms in the ovary after a follicle has ruptured. In the former case, this pathological condition is called a follicular cyst, while in the latter, it is known as a corpus luteum cyst (Figure 94). Ovarian follicular cysts occur in 9% of infertile cows and in 2.3% of the total herd. Among female animals with ovarian follicular cysts, 17% exhibit involvement of both ovaries, while 54% of cases occur in the right ovary and 28.7% in the left ovary. In many instances, ovarian follicular cysts arise from ovulation disorders—specifically, the presence of persistent follicles. In cases of persistence, unruptured

follicles increase in size after 8–10 days. The shape and size of these cysts vary; some are spherical, others are oval, and some take on irregular forms, appearing as a cluster of protruding cysts. The size of the cysts is variable, ranging from 2.5 cm to 7.5 cm, or even 10.5 cm and larger. Clinically, ovarian follicular cysts manifest either as nymphomania (42%) or as a prolongation of the sexual cycle accompanied by anaphrodisia (58%).

Microscopically, the structure of these cysts can vary. In 30.7% of cases, the cysts are associated with a corpus luteum. Ovarian cysts are present in 69.3% of the cases. Single cysts occur in 53.7% of instances, while multiple cysts are found in 46.3%. The size of the cysts ranges from 2.5 to 7.5 cm. The majority of the cysts (53.1%) are located in the right ovary, 37.3% in the left ovary, and 9.6% in both ovaries.

Follicular cysts may appear as one or two individual fluid-filled sacs (resulting in a "large-cyst ovary") or as several smaller sacs, roughly the size of a pea. Ovarian cysts occur in all types of animals—most frequently in mares and cows, and less commonly in goats, sheep, pigs, and dogs.

Causes of the disease. Keeping animals in one place and failing to provide them with sufficient nutrition leads to the development of ovarian cysts. Ovarian cysts can also arise as a result of various uterine diseases, where microorganisms travel through the oviducts to the ovaries, causing inflammation and the degeneration of follicles.

Cysts should generally be viewed as a sign of various forms of infertility, as they arise from neurohumoral changes occurring within the body. In dairy cows, ovarian cysts often develop during the winter housing period—typically 60 days postpartum—frequently as a consequence of complications during or after calving, or due to inflammation of the uterus, ovaries, or oviducts.

In some cases, cysts in cows may also develop when tuberculosis spreads to the peritoneum (the lining of the abdominal cavity). In mares, follicular cysts can

form when the animal fails to conceive over the course of several estrous cycles. Utilizing mares for heavy labor during the breeding season can disrupt follicular development, leading to the formation of follicular cysts. Furthermore, ovarian cysts can be caused by dysfunction in the hormonal activity of the anterior pituitary gland. Additionally, they may arise from the improper use of medicinal products, particularly hormonal preparations.

Clinical signs. In cases of follicular cysts, the excessive secretion of folliculin leads to nymphomania.

When kept on pasture, an affected cow will jump onto other cows, disturbing the entire herd. Such a cow may stand still when presented to a bull, but she will not conceive, as follicles fail to mature in the ovaries. The affected animal experiences a loss of appetite; consequently, cows in which a “corpus luteum” (yellow body) has failed to regress (be reabsorbed) in the ovary become severely emaciated.





Figure 1. *Pathoanatomical changes in a diseased ovary.*

In cases of prolonged illness, the uterine ligaments—specifically their posterior margins—shift downward. Affected mares exhibit frequent and prolonged estrus; sometimes, they may conceive when bred to a stallion, and pregnancy can proceed normally because, while one ovary may contain a cyst, the other continues to function properly. A corpus luteum cyst is typically associated with anaphrodisia (the absence of sexual cycles).

Diagnosis. The diagnosis is established based on clinical signs, medical history, and a rectal examination. During the rectal examination, one or both ovaries are found to be enlarged due to the presence of one or more follicles. Varying degrees of fluctuation can be felt, depending on the fullness of these follicles and the thickness of their walls. Ovarian cysts can vary in size. If an ovary contains several small fluid-filled sacs, its surface will feel uneven or bumpy. Although a follicle the size of a Graafian follicle may be detected, it is often impossible to distinguish a pathological ovary from a normal one based on a single examination. To confirm the diagnosis, a follow-up examination is performed—after 2–3 days in cows, and after 10–12 days in mares. If the same changes are observed during this subsequent examination, the condition is classified as an ovarian cyst. Follow-up examinations are more frequently required for mares, as a normal Graafian follicle is typically smaller than an ovarian cyst.

Consequences. In some cases, an ovarian cyst may recur after treatment. Furthermore, if the condition is not correctly diagnosed and treated in a timely manner, it can lead to the animal becoming barren or infertile.

Treatment. The primary approach to managing this condition involves implementing regular clinical monitoring for non-pregnant and pregnant cows, while also optimizing their diet and ensuring sufficient physical activity. In mares, solitary cysts may often resolve on their own without intervention. To accelerate the resorption of such cysts, the ovary can be massaged via the rectum over the course

of several days. If these measures prove ineffective, the cyst may be ruptured by applying pressure through the rectal or vaginal wall, or by puncturing it with a needle via the vaginal route. Modern therapeutic options include the administration of "Trivit" and "Surfagon" injections.

Treatment regimen: *(Table 1)*

Daily treatment	Names of medicines
1 day	Surfagon 5 ml Trivit 8 ml, intramuscularly
2 day	Surfagon 5 ml, intramuscularly
3 day	Surfagon 5 ml, intramuscularly
4 day	Surfagon 5 ml, intramuscularly
5 day	Surfagon 5 ml, intramuscularly

Prevention. Preventing diseases of the reproductive system requires careful attention to animal management—specifically regarding exercise and movement—as well as adherence to zoohygienic requirements and veterinary sanitary-hygienic standards. Furthermore, conducting regular clinical examinations (health screenings) of the herd—including cows and heifers that have recently calved—is highly effective in preventing such diseases.

Conclusion. Causes include failing to dry off pregnant animals in a timely manner, gross violations of housing and feeding conditions, and a lack of adequate physical activity (exercise). Other contributing factors are the improper administration of medicinal substances, as well as the failure to carry out necessary therapeutic and preventive procedures for newly calved cows in a timely and comprehensive manner.

References:

1. Eshburiyev B.M. Veterinary Obstetrics. Textbook. - Tashkent: 2024, "Science and Technologies",
2. B.M. Eshburiyev. Veterinary Obstetrics. Tashkent-2018-y.

3. A.R. Jabborov, S.S. Sotiboldiyev. Veterinary Obstetrics, Gynecology, and Artificial Insemination. Study Guide. Tashkent, 2004.
4. Etiology, diagnosis, and treatment of mastitis. Komilov H., Olimjonov M, O‘ktamov Sh., International journal of artificial intelligence.2025-y.
4. Etiology, diagnosis, treatment and prevention of calf dyspepsia. Komilov Hajibay, D.DJabbarova, H.Berkinova, M.Yormatova. International multidisciplinary journal for research & development. 2023-y.