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Faculty of veterinary medicine

Department of Surgery, Obstetrics and Small Animal Diseases

METHODOLOGICAL RECOMMENDATIONS FOR LABORATORY CLASSES IN THE EDUCATIONAL COMPONENT

OBSTETRICS, GYNECOLOGY AND BIOTECHNOLOGY OF ANIMAL REPRODUCTION

for full-time students of the second (master's) level of higher education, specialty 211 veterinary medicine

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Methodological recommendations for laboratory classes in the educational component obstetrics, gynecology and biotechnology of animal reproduction for full-time students of the second (master's) level of higher education, specialty 211 veterinary medicine / L.G. Roman. [Electronic resource] – Odesa.: ODAU, 2026. – 1 electronic optical disk (CD-ROM); 12 cm. 21 p.

methodological recommendations for laboratory classes in the educational component obstetrics, gynecology and biotechnology of animal reproduction contains systematized material necessary for the formation of fundamental knowledge among higher education students about the the role andrological diseases, their impact on the reproductive ability of infertile males. The classification of andrological diseases, their etiology, clinical signs and diagnostic and therapeutic algorithm for monitoring andrological diseases, congenital and acquired diseases, mating and fertilization impotence of males are considered in detail. The summary includes the description of the main scheme of treatment, features of the use of antibiotics, anti-inflammatory drugs in veterinary andrology. The material will be useful for higher education students in the specialty **211 "Veterinary Medicine".**

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CONTENT

Safety and labor protection

Successful clinical examination of an animal for the purpose of diagnosis, as well as during therapeutic and prophylactic manipulations, largely depends on the skillful and correct treatment of the doctor with the patient. In this case, it is necessary to create conditions that would prevent injury to people and animals. Every veterinary specialist should know the rules of approaching animals well, master the methods of their fixation, always remember about personal safety equipment, the safety of service and auxiliary personnel.

The surrounding environment should be calm. At this time, there should be no strangers nearby. Handling the animal should be calm, affectionate, if necessary - strict. The animal should be called and reassured, stroking the bulls - between the ears and on the back, and cows - in any parts of the body. You should not approach the animal stealthily, as this scares it and causes a defensive reaction.

Special attention should be paid to personal hygiene issues. During the examination of the animal, it is necessary to wear special clothing (gown, overalls, headgear), and if necessary, rubber shoes, gloves, glasses and a cotton-gauze bandage. It is necessary to monitor the cleanliness of hands and tools, wash hands both before and after the examination of each animal, and if an infectious disease is suspected, hands are necessarily treated with a disinfectant liquid.

In practical activities, one is guided by the rules of approach and methods of fixing animals. Consistency and systematicity in the examination of animals reduces the possibility of accidentally missing important symptoms, creates an idea of the organism as a whole and makes it possible to objectively assess the results of the studies. Beating animals, rude shouts and sharp movements are unacceptable.

It should be remembered that with rude behavior during the procedures, they, regardless of their temperament, become dangerous - they develop a self-defense reflex.

When working with animals, it is necessary to know and use their species and individual characteristics. Rough handling, sudden movements and beatings are unacceptable. At the same time, this does not exclude the punishment of disobedient and ill-mannered animals.

Recommended Literature

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6. Vlasenko S.A. et al. Pharmacological support for intensive reproduction of cows. Bila Tserkva, 2019. 153 p.
7. Lyubetsky V.Yu., et al. Journal of obstetric and gynecological dispensary of cows: method. Recommendations. Kyiv: Publishing center of NUBiP of Ukraine, 2014. 160 p.

Information resources

1. "Scientific Bulletin of Veterinary Medicine" -[Electronic resource]. – Access mode: http://nvvm.btsau.edu.ua/uk/arhiv-vs
2. Ukrainian Journal of Veterinary and Agricultural Sciences [Electronic resource]. – Access mode: https://ujvas.com.ua/index.php/journal/issue/archive
3. Scientific Messenger of LNU of Veterinary Medicine and Biotechnologies. Series: Veterinary Sciences [Electronic resource]. – Access mode: https://nvlvet.com.ua/index.php/journal/issue/archive
4. Journal "Theoretical and Applied Veterinary Medicine" [Electronic resource]. – Access mode: https://bulletin-biosafety.com/index.php/journal/issue/archive
5. Collection of scientific papers "Veterinary science, animal husbandry technology and environmental management" [Electronic resource]. – Access mode: https://hdzva.edu.ua/naukovi-vydannya
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Laboratory lesson 1.

Andrological dispensary.

Purpose of the lesson*:* To study the stages of andrological dispensary and the methodology for its implementation.

Tasks: To get acquainted with the features of andrological dispensary in different species of animals.

Knowledge of the topic is necessary in the practical work of a veterinary doctor when conducting andrological dispensary, providing qualified medical care for andrological diseases of breeding animals

Place of the lesson: breeding enterprises, laboratory of the department.

Equipment: breeding bulls, fixation machines, towels, soap, solutions of 0.5% ammonia, 5% iodine, 2.5% aminazine, 40% glucose, 0.5% novocaine,

furatsilin 1: 5000, potassium permanganate 1: 1000, chloramine 1: 1000, iodized alcohol 1: 1000, rompun, Vishnevsky emulsion, 10% ichthyol ointment, Bobrov needles, injection needles No. 1012, 20 ml syringe.

Lesson plan

1. Get acquainted with the stages of andrological medical examination.
2. Conduct andrological medical examination of breeding bulls.
3. Diagnose, treat and prevent andrological pathology in male farm animals.

Task 1. Get acquainted with the methodology and stages of andrological veterinary examination.

Explanation to the lesson. Andrological medical examination is a study of a breeding bull according to a specific plan, which allows you to establish the form of impotence, determine the prognosis, and carry out treatment and preventive measures.

The purpose of the examination is to identify and cull bulls with congenital developmental anomalies.

Andrological medical examination of bulls is carried out in three stages:

the first - during the period of growing bulls up to 6 months of age in breeding plants and breeding farms;

the second stage – medical examination of bulls selected for breeding purposes aged 6 to 12 months during the period of growth and preliminary **testing** of their breeding value in the farms of the Helevers and special testing stations. Based on the data of the study of the degree of manifestation of sexual reflexes, genitals and sperm of each bull, a preliminary commission assessment of its andrological value is made**;**

The third stage is a medical examination of breeding bulls who are ready for breeding, a systematic monitoring of their health and progress in the process of breeding. Vaughn carries out investigation of such contagious illnesses as tuberculosis, paratuberculosis, leptospirosis, leukemia, brucellosis, trichomoniasis, vibriosis, pseudomonosis, infectious rhinotracheitis; investigation of sperm and urine preparation for bacterial contamination, count titer; blood testing for protein, calcium, inorganic phosphorus, carotene, for reserve capacity; investigation of the seeds (potatoes, protein, zukor, ketone bodies, houses); analysis of sperm production (ejaculates extracted, from which they were given for vicorization, average volume, sperm dose prepared, sperm dose frozen, selected after thawing, cows and heifers inseminated first, from them zaplidnennya, vidotok zaplidnennya); analysis of clinical follow-up data (following the accepted scheme) and, therefore, to try to find out about the validity of the subject.

Task 2. Conduct an andrological study of the newborn.

Registration – inventory number, color, breed, birth date, body mass, hairdresser.

Anamnesis – travel, place of origin and growth, squalor and nature of the spawning (for artificial insemination and natural steaming), method of morning, age of birth, mode of observation and spawning, behavior during the hour of steaming taking sperm, indicators of sperm production, sealing of females and hatching of young animals; the hour of appearance and the nature of the breakdown of the state function; transfer of illness, type of treatment and its effectiveness; results of monitoring for brucellosis, tuberculosis, leptospirosis, trichomoniasis, vibriosis, infectious balanoposthitis and other infectious diseases.

External clinical investigation – habitus, constitution, age and temperament of the fruit, revealing the secondary signs; body of the skin, nasolabial mirror, eyes, visible mucous membranes, superficial lymphatic nodes, musculoskeletal system, especially the cartilage, rats and meats, nervous system, organs of poisoning, breathing, blood flow. Watch out for the act of sechovipuskannya.

Investigation of the organs is carried out using various methods of inspection, palpation, as well as rectal and reflexological examination. They start first from the completion of the gate (for bulls - on a standing animal from behind, for rams - placed on a table and fixed in a side position). Pay attention to the symmetry of the halves of the wicket, its folding, the thickness of the skin, the presence of scars, bumps, sagging, new creation, hair growth.

Palpation is used to determine the temperature of the wicket (aligned with body temperature), moisture, softness, and looseness of the balls. After this, bury the neck of the wicket with two fingers and a malleable hand, press the seeds down until all the folds of the skin are relaxed, and the so-called cord will not remain taut. Pat the well-stretched skin of the wicket with the thyme, the thymus appendages and the thymus cords and determine their position, shape, looseness, consistency, size.

The bull's testicules are kindly allowed to pass through the gate. The stinks occupy a vertical position, have an egg-like shape, a smooth surface, a spring-elastic consistency, and move freely uphill to the inguinal canal. In mature bushy plants, the length of the seed is 11–20 cm, width 6.5–19.5, thickness 7–10.5 cm. The appendage of the seed is easily palpated through the balls of the wicket: its head rests on the seed, the body is visible a flat cord along the appendage to the edge of the amyelium, and the tail, adhering to the lower edge of the amycium, slightly protrudes beyond its boundary.

The additional prepuce is formed from external inspection, palpation of the wall of the foreskin and the greater part of the penis, postoscopy, fluoroscopy and radiography. As time goes on, I pay attention to the place of deterioration of the skin, the length of the wall and the hairs that hang from the prepuce, to the shape and size of the prepuce opening, to the presence of a new creation. Palpating, calling to see from this empty place.

Inspection and palpation of the empty prepuce, and instead of the preputal opening of the end part of the penis and the walls of the preputial sac, catheterization of the sechoductal canal and the dissecting fur is carried out from the vicinity characteristics of neuroleptanalgesia and neuroleptanesthesia.

When catheterizing the urethra, it is necessary to know that on the mucous membrane of the dorsal wall of the pelvic part of the urethra there is a seminal hump, at the top of which the openings of the seminal canals open. This hump plays an important sensory function in the manifestation of reflexes of erection and ejaculation. In the cibulina stage, the mucous membrane of the dorsal wall of the urethra creates a crescent-shaped fold, over which a blind sac 2–3 cm deep is formed, which prevents the insertion of the catheter into the pelvic part of the urethra.

For postoscopy (Gr. posthion - foreskin; scopeo - look) wash the skin of the cob with warm water and mild potassium permanganate, cut the hair near the opening of the prepuce and inject it into the cob soil mirror 20–25 cm of edges and a branch width of 2 cm (for rams – a length of 12 cm of edges and a branch width of 1.5 cm) to a depth of 4–5 cm, open it and straighten the frontal spotlight in empty clay; When consumed, open the mirror wider and take mucus for bacteriological investigations.

X-ray and radiography are performed using the X-ray machine RU-760.

The maturations reveal the sigmoid joints of the penis and the end part of the prepuce, indicating their configuration, friability, and soreness.

Additional stages in bulls can be traced through the rectum. Having inserted the right hand into it up to the pubic ridge (after removing the feces), find out the split fur located on the dorsal surface of the ampulla of the seminal ducts (in the form of two later spindle-like thicknesses, 13–15 cm long and 4–8 cm wide, which are the We are here to converge on the trade of the neck of the sechovogo mikhur). Behind the ampoules, up to the body of the bile duct, there are auricular-like gills (non-ruinous, humpbacked in appearance of a pair of elastic-elastic patchwork, 10–12 in length, 5 in width and 5 cm in thickness) and the body of the prostatic gland, which lies on the seedling behind the ampoules and visible ducts of the mycium-like glands in the form of a transverse ridge of thick consistency (smooth, 2–3 cm wide, 1–1.5 cm high, what is consuming the cob part of the urethra).

On the level of the sciatic arch, on the side of the sechostatic canal, under the bulbo-urethral meat, there are Cooper's ganglia, which can be missed.

Investigation of manifestations of insane state reflexes. Having prepared a specially designed vagina and taken additional sperm from the ovary, it immediately increases the intensity of the appearance of new state reflexes - cravings, erections, volumetric, paruvial, ejaculation.

The erection reflex in the male is manifested in the larger size of the penis, the increase in its girth, the local temperature, the sensitivity and straightening of the S-like joint, which is felt by the neck. (1–3) seconds.

The general reflex is manifested in the cow's face and its front ends.

The paruvial reflex appears as a sharp sound (2–3 s).

The ejaculation reflex (seeing sperm) occurs after the paruvial reflex and lasts for about 3–4 s.

It is important to determine in which conditions reflexes appear normally, and in which ones they are overly distorted or weakened. Extremely

strengthened state reflexes - state cravings, erections (hypersexuality), which develop clearly, but in a short time, and do not end with the parival reflex or ejaculation, or at the same time - with Premature ejaculation is most often avoided in patients with a non-streaming type of nervous activity.

The galvanization of state reflexes (insane and intellectual) arises on the basis of the inexorable, rough handling of the ovaries, the disruption of the regime of their vicorization, the rules of observation that year, during the preparation of artificial vaginas and the taking of sperm. State reflexes may also weaken due to a decrease in the activity of nervous processes in the male's body, a decrease in the hormonal function of state organs and the pituitary gland, insufficient function of the spermatozoa or activities of third-party participants at the time of sperm collection.

The investigation of sperm taken from the sperm is carried out for external characteristics (volume of ejaculate, color, smell and consistency), thickness, activity, concentration, number of living, dead and pathological sperm. The honeycomb's position, if it does not see sperm, has shown state reflexes, is called aspermatism (Azm), and if it sees an insignificant amount of sperm - oligospermatism (Ozm). With a normal concentration of sperm in sperm we talk about normospermia (No), with a decrease - oligospermia (Oc), if the ejaculate contains predominantly young forms, spermatocytes and spermatogonia - about azospermia (Aze), with the presence of sperm in the ejaculate - about aspermia (As).

The friability of sperm is defined by the concept of "normokinespermia" (Nx) with activity of 8–9 points, oligokinespermia (Ox) – no more than 7 points, "akinespermia" (Ax) – if present looseness of sperm and "necrospermia" (Nkrs) – when there are too many dead sperm in the ejaculate.

The results of morphological examination of sperm are assessed as normomorphospermia (NMFs), if at least 80% of sperm have normal morphology, or teratospermia (Ters) – if more than 20% of sperm have normal morphology abnormal morphology.

The results of assessing sperm survival are expressed in mental units or hours; Their low vitality is called acme-nospermia (Acre).

Presence in the ejaculate of large spermatozoa is called hemospermia (with deposits of blood), urospermia (presence of sperm), piospermia (presence of sperm) and bacteriospermia (presence in sperm number of microbial bodies).

If it is necessary to carry out a more in-depth assessment of the sperm at the level of metabolic processes in its body and in the sperm produced by it, to conduct biochemical testing of blood instead of the inflammatory protein, glucose, calcium, inorganic phosphorus, carotene, for reserve capacity, for the concentration of fructose and fructose index in sperm, the activity of its enzymes - catalysts of aerobic and anaerobic processes; perform biochemical examination, bacteriological examination of sperm and prepuce.

Questions for self-control

1. What are the stages of andrological clinical examination?
2. What is medical examination?
3. Who promotes medical examination?
4. What are the categories of glazes?
5. What method is used to investigate the sperm of spawners?
6. What should be included in the plidnik's passport?
7. Methods for diagnosing the reproductive function of the ovaries (method
of andrological investigation)?
8. Mechanical injuries of state organs?
9. Renewals of impotence of ovaries?
10. Diseases that cause progressive impotence in fruit-bearing patients?
11. Ailments that cause impotence in mothers?
12. Fasting, balanoposthitis: etiology, signs, treatment?
13. Phimosis, paraphimosis: etiology, signs, treatment?
14. Ailments of the skin of the scrotum: eczematous dermatitis; frostbitten skin of the gate; abscesses, cellulitis of the wicket?
15. Prostatitis. Prostate adenoma?

Recommended literature

1. Yablonsky V. A. Biotechnology of created creatures / V. A. Yablonsky. K.: Aristey, 2004. 296 p.
2. Yablonsky V.A. Practical obstetrics, gynecology and individual insemination of farm animals. K.: Harvest, 1995.288 p.
3. Yablonsky V. A. Practical obstetrics, gynecology and artificial insemination of farm animals. K.: Harvest, 2002.319 p.
4. Grishko D. S. Lectures on veterinary obstetrics. Kharkiv: Prapor, 2003.398 p.

Laboratory lesson 2.
Methods for diagnosing the reproductive function of males.

Purporse: study methods of diagnosing impotence of bulls. Learn about the peculiarities of diagnostic methods and the reproductive function of *males*.

Knowledge of the topics is necessary for a practical doctor of veterinary medicine when providing qualified assistance for pathological stages of the reproductive function of *males*, carried out diagnostic and therapeutic algorithm for monitoring the reproductive state of *males.*

Task. Get acquainted with the methodology and methods of diagnosing reproductive function in fertile males.

Equipment: bull - fertile, fixation machines, towels, milo, dispense 0.5% ammonia, 5% iodine, 2.5% aminazine, 40% glucose, 0.5% novocaine, furatsilin 1:5000, potassium permanganate 1:1000, chloramine 1:1000, iodine alcohol 1:1000, rompun, Vishnevsky emulsion, 10% ichthyol ointment, Bobrov heads,

injective heads No. 1012, 20 ml syringe, a set of instruments by V. V. Pavlovsky, an apparatus for maintaining the measles of A. N. Zhaboyedov (PSG-1), a scarifier and spoon-catheter of G. K. Korczak, an apparatus for maintaining the contaminants of the measles of G. V. Kazeva (PSK-1), alcohol, bandages, cotton wool, isotonic NaCl solution.

Lesson plan

1. Development of methods for diagnosing the reproductive organs of bulls;
2. Consider the peculiarities of the clinical manifestation and progression of illness, which lead to paraval and postnatal impotence.
3. Conduct diagnostic tests using clinical and laboratory methods.
4. Learn how to detect illnesses in your organs state systems that determine impotence and infertility of the *males*.

Implementation methodology. In breeding bulls, sexual dysfunction is most often associated with metabolic disorders and neuroendocrine regulation of sexual processes, which manifests itself in a decrease in sexual activity, weakening or inhibition of sexual reflexes, spermiogenesis, a decrease in the quantity and quality of sperm production, as well as with excessive exploitation and in some cases with inflammatory processes in the preputial sac, testicles, accessory sex glands, neoplasms of the penis and preputial sac.

Diseases of the skin of the scrotum. The scrotum as a thermoregulator is of great importance for sperm production. Burns, frostbite, eczematous processes of a chronic nature and other skin diseases that disrupt the thermoregulatory functions of the skin of the scrotum can cause the phenomena of teratospermia of the Academy and especially necro- and oligospermia.

In eczematous, parasitic, acute dermatitis, the skin of the scrotum is swollen, painful, devoid of hair; it is impossible or impossible to fold it into a fold.

After chronic dermatitis, burns, frostbite and other skin diseases that are accompanied by the formation of ulcers and the development of connective tissue, scars are palpated in the thickness of the skin, often standing out white on examination against the background of the pigmented cover. Damage to the skin of the scrotum can cause complete cessation of spermiogenesis**.**

Scrotal and inguinal hernias can be unilateral or bilateral. Their characteristic feature is an increase in the scrotum, more often one half of it. The contours of the testicle, epididymis and spermatic cord are smoothed or not palpable at all. The consistency of the scrotum depends on its contents (omentum or intestinal loop). In case of pinched hernias, symptoms of inflammation often join.

For differential diagnosis, it is necessary to rectally examine the inguinal canals, while it is also possible to establish the nature of the contents of the hernial sac. Penetrating through the inguinal canal into the cavity of the common vaginal membrane, the loops of the intestines or omentum squeeze the testicle and its

vessels and, possibly, have a harmful temperature effect. Therefore, in the presence of a hernia, regular monitoring of sperm quality is necessary.

Accumulation of blood in the vaginal cavity of the scrotum (Haematocele). From a clinical point of view, this disease should be considered as a symptom of traumatic damage or degeneration of the vascular system of the testicle, so the manufacturer should definitely not be used for treatment.

Clinical signs are manifested by uniform or unilateral enlargement of the scrotum, fluctuation, and sometimes crepitation due to the formation of blood clots or fibrinous deposits

Hydrocele of the vaginal cavity of the scrotum (Hydrocele*).*

This is the so-called symptomatic (reactive) dropsy of the testicle, which can pass after the treatment of the underlying disease of the animal.

The process develops independently as a result of impaired blood circulation in the testicle or as a symptom of ascites. It develops due to the incorrect development of the lymphatic vessels of the testicle, which leads to a slowdown in the absorption of the created serous substance between its membranes. There is an increase, rounding and sagging of the scrotum, its fluctuation. There is no local temperature reaction. When up to several liters of transudate accumulates under the vaginal cavity, there are no difficulties in making a diagnosis. In doubtful cases, diagnostic puncture of the vaginal cavity wall is resorted to. With dropsy of the vaginal cavity, the animal is culled if, despite treatment, sperm production does not resume.

It is diagnosed by clinical symptoms, ultrasound and diaphanoscopy. Diaphanoscopy is negative only in the case of thickening of the testicular membranes.

Bleeding from the tip of the penis can be detected in all domestic males, but most often in stallions, bulls and dogs as a congenital anomaly of the penis. The disease is characterized by the presence of a fistula on the glans penis, on the side of the urethra, the edges of which are surrounded by a ring-shaped growth of granulations, which have a reddish-blue color. During erection, when the cavities of the cavernous bodies are filled with blood, blood is released from the opening in a thin stream or drops.

The diagnosis is made based on the results of a clinical examination. When the penis is anesthetized (according to I. I. Magda), it can be pulled out of the foreskin and the presence of a fistula can be confirmed by inserting a button-shaped probe. At the same time, the cavernous cavities of the penis are filled with blood through the fistula.

Fusion of the penis with the preputial sac. Persistent frenulum of the penis. The disease occurs in males of all domestic animals.

The causes have not been fully elucidated.

Symptoms. The fold connecting the body or head of the penis with the preputial sac prevents its excretion and contributes to the accumulation of urine in the sperm and the cavity of the preputial sac. In dogs, smegma accumulates in the preputial sac, which contributes to the occurrence of balanoposthitis.

The frenulum of the penis can be wide and connect its entire body with the preputial sac or narrow, attached to a certain area of the penis. In some males, it has the appearance of a connective tissue fold that hangs freely from the body of the penis. Small folds are not an obstacle to obtaining sperm and during mating of animals. A freely hanging fold of the mucous membrane must be differentiated from papilloma, and in dogs from a preputial venereal sarcoma.

The diagnosis is based on the data of a clinical examination of males and a penis removed from the preputial sac.

A contusion (contusio) occurs mainly under the influence of blunt objects: blows with horns, hooves, when overcoming obstacles, barriers, falls, prolonged compression by a fall, when taking sperm on a stuffed animal, for dogs and cats, road accidents.

Clinically, a contusion is manifested by diffuse hemorrhage into the tissues, redness or blueness of the injury site, swelling, pain, and a decrease in the opening of the preputial sac. In case of injury with deep tissue damage, swelling of the mucous membrane may occur. Depending on the force of the blow and the shape This is the so-called symptomatic (reactive) dropsy of the testicle, which can pass after the treatment of the underlying disease of the animal.

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Gangrenous balanoposthitis is accompanied by clinical signs of the disease and a high increase in general body temperature, general weakness.

Chronic process - cracks in the mucous membrane of the head are detected, the animal experiences constant pain. Scars of the foreskin appear, which later become the cause of phimosis. Local lymph nodes increase and the general and local body temperature increases.

Inflammation of the mucous membrane of the penis (posthitis) and the mucous membrane of the foreskin (balanitis) is called balanoposthitis and is a common disease of dogs.

Phimosis - or abnormal narrowing of the preputial opening, which prevents the penis from being brought out. The animal does not release the penis outside during urination. Artificial removal of the glans penis through the preputial opening is difficult or impossible. Urination is difficult. Urine is excreted in a thin stream. The act of urination is prolonged. With congenital phimosis, animals already in the first hours after birth show anxiety, colic, swelling of the preputial sac, which is delayed by urine and a very narrow, barely penetrated probe external opening of the foreskin.

Paraphimosis - restriction, or strangulation, of the penis by the preputial ring - is characterized by the fact that the glans penis, which has come out of the foreskin, cannot be retracted. In castrated animals, the disease is rare.

Orchitis and epididymitis. Occurs in farm and domestic animals of all species. One or both testicles alone are affected, often with appendages. There are aseptic (traumatic) or infectious (septic) orchitis. Traumatic orchitis occurs as a result of the action of mechanical factors on the testicle or its appendage (impact,

fall of the animal; etc.). Purulent orchitis occurs as a result of injuries to the testicle or the transition of a purulent process from surrounding tissues; infectious orchitis is observed in some infectious diseases (for example, brucellosis, mycosis).

Task 1. Conduct a study of breeding animals using clinical methods.

Diagnosis of diseases of the genital organs is carried out through a thorough clinical and symptomatic examination of animals, taking into account the anamnesis data. If necessary, special laboratory tests are performed.

When collecting anamnestic data, the age of the animal, feeding and housing conditions during the period of exploitation, the nature of its course, whether the animal was given andrological care, how the care was provided, by whom and when, what drugs or methods of treatment were used, where and under what conditions the coitus took place, the sanitary condition of the premises, when and what signs of the disease were noted, whether the animal was treated, and what treatment was prescribed, the nature of the manifestation of andrological pathology, the number of cages or ejaculates and the date of the latter. How is sperm collected from the animal (method).

After collecting the anamnesis, a general clinical and special andrological examination is carried out. At the same time, the fatness and general condition of the animal, the condition of the hair and skin are taken into account, body temperature, pulse and respiratory rate, the number of contractions of the scar are measured. If there are indications, the condition of the cardiovascular system, respiratory and digestive organs is examined in more detail.

Then they proceed to the andrological examination, which consists of an examination of the external genitalia and an internal rectal examination.

During external examination, the general configuration of the croup, the condition of the ligaments, prepuce, glans penis, penis, testicles, scrotum, root of the tail are determined, attention is paid to the presence and nature of secretions from the preputial sac (exudate or transudate, the presence of scales, the appearance of hair, skin near the prepuce, etc.).

Internal examination is carried out in disposable polyethylene or rubber gloves. First, the foreskin is opened with the fingers of the left or right hand and the mucous membrane of it, the glans penis, is examined. At the same time, its color is determined, attention is paid to the presence of mucus or exudate, hemorrhages, ulcers, nodular or vesicular rash, and shine. After that, with the help of the other hand, the penis is completely brought out. If the penis cannot be immediately brought out, sacral epidural anesthesia or blockade according to I. I. Magda (in a stallion), according to I. I. Voronin (in a bull) is performed; the preputial sac and its opening are mechanically cleaned with disinfectants, bringing the glans penis to the outside. The preputial sac and penis are treated with antiseptic substances (ethacridine lactate 1:5,000, potassium permanganate 1:5,000, furatsilin 1:1,000, 0.005% chlorhexidine bigluconate solution), a solution of antibiotics in a 0.25% solution of novocaine (penicillin sodium salt, streptomycin sulfate, etc.); the ulcers of the mucous membrane are lubricated with iodoglycerin, a short novocaine blockade of the area of inflammation is performed;

ichthyol, streptocid ointment, levomikol, levosin, synthomycin emulsion, Vishnevsky ointment are injected into the cavity of the preputial sac; ulcers on the mucous membrane are cauterized with a 1% solution of brilliant green, fucorcin. When removing the penis, attention is paid to the reaction and behavior of the animal, then carefully examine and determine the condition of its mucous membrane, record the presence and nature of discharge from it.

In a healthy animal, the mucous membrane is pink or light pink, shiny, moist, without any wounds, abrasions, redness, layers, etc. When the inflammatory process develops, the penis is enlarged, swollen, red, the folds of the scrotum, the preputial bladder are thickened, the penis canal is half-open and exudate is released from it, there are crusts, ulcers, etc. When the glans penis, preputial sac is inflamed, the animal urinates painfully, in drops with impurities of blood, mucus. After andrological examination, rectal palpation is performed, determining the location, size, consistency, prostate and bulbous glands, as well as their condition.Normally, the genitals of bulls are not swollen, mobile, painless, without layers, moist, the glans of the penis is pink. In dogs and cats, it can be brought out without the use of novocaine blockade. In the presence of a female in heat, the animals behave.

Questions for self-control

1. Mechanical injuries of the genitals?
2. Types of impotence of fertile animals?
3. Diseases that cause insemination impotence in fertile animals?
4. Diseases that cause mating impotence in fertile animals?
5. Postitis, balanoposthitis: etiology, signs, treatment?
6. Phimosis, paraphimosis: etiology, signs, treatment?
7. Scrotal skin diseases: eczematous dermatitis; frostbite of the scrotum; abscesses, phlegmon of the scrotum?
8. Prostatitis. Prostate adenoma?

Reporting form: testing in a mudli

Recommended literature

1. Yablonsky V. A. Biotechnology of animal reproduction / V. A. Yablonsky. Kyiv: Aristey, 2004. 296 p.
2. Yablonsky V. A. Practical obstetrics, gynecology and artificial insemination of farm animals. Kyiv: Urozhay, 1995. 288 p.
3. Yablonsky V. A. Practical obstetrics, gynecology and artificial insemination of farm animals. K.: Urozhay, 2002.319 p.
4. Grishko D. S. Lectures on veterinary obstetrics. Kharkiv: Prapor, 2003. 398 p.

Laboratory lesson 3.

Methods of diagnosis, therapy and prevention of infertility in animals due to infectious and invasive diseases.

Knowledge of the topic is necessary in the practical work of a veterinary doctor when conducting a diagnostic and therapeutic algorithm for monitoring the reproductive state of animals for the purpose of diagnosing, treating and preventing infertility in animals due to infectious and invasive diseases.

Purpose of the lesson: to master the methods of diagnosis and treatment of infectious diseases that affect the reproductive system of reproductive animals.

Location of the lesson: breeding enterprises, department clinic.

Task: To learn about the features of diagnosis, treatment and prevention of infertility in animals due to infectious and invasive diseases.

Equipment: bulls-breeders, fixation machines, towels, soap, solutions of 0.5% ammonia, 5% iodine, 2.5% aminazine, 40% glucose, 0.5% novocaine, furatsilin 1:5000, potassium permanganate 1:1000, chloramine 1:1000, iodized alcohol 1:1000, rompun, Vishnevsky emulsion, 10% ichthyol ointment, Bobrov needles, injection needles No. 1012, 20 ml syringe, alcohol swab, bandages, cotton wool, isotonic NaCl solution, etiotropic, pathogenetic and symptomatic therapy agents.

Lesson plan

1. To master the methods of diagnosis and therapy for andrological pathology of infectious origin.
2. To get acquainted with the means of treatment and prevention of infectious and invasive diseases that cause infertility in fertile men.
3. To carry out effective treatment and preventive measures for andrological pathology of infectious origin.
4. To study the means of treatment and prevention of infectious and invasive diseases in males that occur in an acute form.

Bovine vibriosis – This is a sexually transmitted infection transmitted sexually and alimentarily (care items, bedding), during artificial insemination with infected sperm of sick breeding animals.

Diagnosis - agglutination reaction with vaginal mucus and the method of luminescent microscopy using vibriosis fluorescent sera.

Breeding bulls are examined for vibriosis once every six months (the obtained sperm and preputial mucus are bacteriologically examined).

The pathogen is localized in the mucous membranes of the foreskin.

Treatment. Bulls: 2 courses (4 days each) with an interval of 5–6 between courses. In the 1st: for local treatment, an emulsion of penicillin and streptomycin is used at the rate of 1 million units of each drug emulsified in 50–60 ml of vegetable oil or fish oil. The emulsion is injected into the foreskin. Before the introduction of the emulsion, the preputial cavity is washed with boiled soapy water, and then with a 3% hydrogen peroxide solution or a 1:5000 furatsilin solution.

After the introduction of the emulsion, the edge of the preputial sac is clamped with a rubber ring and the foreskin is massaged for 2–3 minutes, a 3–5 minute break is made and massaged again. This manipulation is performed 5–6 times daily.

At the same time, general antibiotic therapy is performed: streptomycin and penicillin in 0.5% novocaine solution are administered intramuscularly 2 times a day at the rate of 4000 units of each drug per 1 kg of animal weight.

After 5–6 days, a second course of treatment is carried out, with oxytetracycline administered intramuscularly at a dose of 5000 units per 1 kg of animal weight in 0.5% novocaine solution, and the preputial cavity is treated with a 5% furazolidone emulsion in fish oil or vegetable oil.

A month after treatment, bulls are examined three times (with an interval of 10 days). If the results of the laboratory examination are negative, the bulls are considered healthy.

Trichomoniasis is an invasive disease of cattle.

Treatment of patients with trichomoniasis in breeding bulls is not sufficiently developed. If trichomonads are found only on the mucous membrane of the preputial sac, the use of disinfectant solutions gives positive results. When trichomonads penetrate the urethra and accessory sex glands, the use of all recommended agents is usually ineffective.

Prevention.

1. Strict adherence to technological conditions for natural mating and artificial insemination of females.
2. Asepsis and antiseptics during artificial insemination and natural mating.
3. Sanitation of sperm.
4. Training and qualification training of specialists.
5. Strict and clear control over the course of the postpartum period.
6. Asepsis and antiseptics during childbirth.
7. Timely diagnosis and therapy of inflammatory processes of the reproductive system of females and males.
8. Use of effective pharmacological agents.
9. Artificial vitaminization of the breeding stock.
10. Timely vaccination of females and males
11. Clear selection work is a sexually transmitted infection transmitted sexually and alimentarily (care items, bedding), during artificial insemination with infected sperm of sick breeding animals.

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6. Asepsis and antiseptics during childbirth.

7. Timely diagnosis and therapy of inflammatory processes of the reproductive system of females and males.

8. Use of effective pharmacological agents.

9. Artificial vitaminization of the breeding stock.10. Своєчасна вакцинація самок і самців.

11. Clear selection work.

12. Compliance with zoohygienic conditions when feeding, keeping and caring for animals.

13. Constant and clear monitoring of the condition of the male reproductive system.

14. Prevention of gastrointestinal and pulmonary diseases.

15. Carrying out preventive measures against invasive diseases.

For disinfection of premises, the following are used: a solution of bleach with 2% active chlorine, a 2% hot solution of caustic soda, a 5% emulsion of

disinfectant (phenol) creolin, a 5% emulsion of xylon oil, a 5% hot solution of soda ash, etc.

Task 2. Learn methods for obtaining scrapings and washings from the genitals of male farm animals.

Methodology. To take mucus from the foreskin of a bull, it is fixed in a machine, the entrance hole of the foreskin is sanitized. The instrument is inserted into the foreskin cavity to a depth of 20–25 cm. Then the inner tube is moved forward, which causes the tip to break and the inner tube to pass deep into the preputial cavity. After that, the rod is moved with the right hand deep into the foreskin until it stops. With the left hand, the location of the tip is felt from the outside and slightly squeezed, and with the right hand, the rod is rotated clockwise, which ensures that the swab is soaked with mucus. With the right hand, the rod is pulled back by half its length, the inner tube is also pulled back by half its length, after which the instrument is taken out and, to prevent contamination of the taken mucus sample with air microflora, a cap is put on the lower end of the outer tube over the torn tip. The instrument is transferred to the workroom, the outer tube and cap are removed over the flame of an alcohol burner, then the tip with the swab is pulled out, which is removed with sterile tweezers and placed in a tube with sterile broth, from where, after shaking the broth, cultures are carried out on dense and semi-liquid media.

Instrument is mounted and sterilized in an autoclave before use. To do this, a gauze swab is attached to the pusher, threading it into a loop, and fixed with a thread so that both ends of the swab are directed forward in the form of a brush. Then the pusher with the swab is pulled by the handle into the tube. The cavity of the tube on the swab side is closed with a paper cap, and on the handle side - with a rubber stopper, which is put on the pusher and pushed into the tube until it stops. The mounted instruments are wrapped in thick paper and autoclaved.

Questions for self-control

1. What methods are used when conducting a andrological examination of animals (methodology of clinical research) ?
2. Andrological dispensary: goal and objectives. Stages?
3. Classification of Andrological pathology?
4. Specific diseases of the sexual organs of animals (campylobacteriosis, infectious rhinotracheitis-pustular vulvovaginitis, necrobacteriosis, trichomoniasis, chlamydia, infectious follicular vestibulitis) ?
5. Inflammatory processes of orchis (hyperplasia of the sexual glands) ?
6. Inflammatory processes in the penis (balanopostitis) ?
7. Nonspecific diseases of sexual the organs?
8. Features of pathogenetic therapy for Inflammatory processes (novocaine blockades: according to V. P. Popkov, paravertebral blockade according to I. I. Magda, paranephral blockade according to M. Senkin, blockade of the pelvic plexus nerves according to A. Nozdrachev, suprapleural blockade according to V. Mosin) ?

Recommended literature

1. Veterinary obstetrics, gynecology and biotechnology of animal reproduction with the basics of andrology / Yablonsky V. A., Khomin S. P., Kalinovsky G. M. et al. Vinnytsia: Nova Kniga, 2008. 600 p.
2. Yablonsky V. A. Biotechnology of animal reproduction / V. A. Yablonsky. Kyiv: Aristey, 2014. 296 p.
3. Yablonsky V. A. Practical obstetrics, gynecology and artificial insemination of farm animals. Kyiv: Urozhay, 2001. 288 p.
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7. Problems of reproduction of sheep and goats and ways of their solution /Koshovy V.P., Sklyarov P.M., Naumenko S.V. Kh.D: Gamaliya, 2011.467 p.
8. Lototsky V.V. Development and testing of modern methods for determining the optimal time of insemination of highly productive cows: author's abstract of the dissertation for the degree of candidate of veterinary sciences: 16.00.07. Kyiv, 2018. 20 p.
9. Stimulation and synchronization of sexual cyclicity in cows and methods of increasing fertility / Kharuta G.G. et al.; edited by G.G. Kharuta. Bila Tserkva, 2009. 21 p.

Information resources

1. "Scientific Bulletin of Veterinary Medicine" -[Electronic resource]. – Access mode: http://nvvm.btsau.edu.ua/uk/arhiv-vs
2. Ukrainian Journal of Veterinary and Agricultural Sciences [Electronic resource]. – Access mode: https://ujvas.com.ua/index.php/journal/issue/archive
3. Scientific Messenger of LNU of Veterinary Medicine and Biotechnologies. Series: Veterinary Sciences [Electronic resource]. – Access mode: https://nvlvet.com.ua/index.php/journal/issue/archive
4. Journal "Theoretical and Applied Veterinary Medicine" [Electronic resource]. – Access mode: https://bulletin-biosafety.com/index.php/journal/issue/archive
5. Collection of scientific papers "Veterinary science, animal husbandry technology and environmental management" [Electronic resource]. – Access mode: https://hdzva.edu.ua/naukovi-vydannya
6. Veterinary manual "Merck" [Electronic resource]. – Access mode: https://www.merckvetmanual.com
7. Scientific and practical journal "Veterinary medicine of Ukraine" [Electronic resource]. – Access mode: - https://lib.dsau.dp.ua/book/2665
8. Scientific and practical journal "World of veterinary medicine" -[Electronic resource]. – Access mode: http://www.mirvet.com.ua/

9. Scientific and practical journal "Veterinary practice" [Electronic resource]. – Access mode: http://www.invetbio.spb.ru/journal/vp_inform.htm