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Results of practical research on aborted sheep for salmonellosis

Abort qilgan qo'ylarni salmonellyozga tekshirish amaliyoti natijalari**Результаты практических исследований абортировавших овец на сальмонеллёз****O. M. ABDURAIMOVA¹**¹ Scientific-Research Institute of Veterinary, Uzbekistan**ARTICLE INFO****ARTICLE TYPE**

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AUTHOR, TITLE AND ABSTRACT METADATA (EN / UZ / RU)**ENGLISH****O. M. ABDURAIMOVA¹**¹ Scientific-Research Institute of Veterinary, Uzbekistan

Abstract. This article presents the results of a pathological examination of sheep that experienced abortion on a farm. During the study the gross pathological changes in the foetus and the placenta were evaluated with special attention to the differential diagnosis of salmonellosis. The results showed that the detected pathological changes alone were not sufficient to confirm a diagnosis of salmonellosis. The study emphasizes the importance of a comprehensive diagnostic approach, including pathological, bacteriological, serological and molecular investigations, to determine the aetiology of abortion in sheep accurately and to improve differential diagnosis.

Keywords: pathological examination; salmonellosis; Salmonella abortus ovis; diagnosis; differential diagnosis; abortion; foetus; placenta; campylobacteriosis; chlamydiosis

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Annotatsiya. Maqolada fermer xo'jaligida abort qilgan qo'ylarda o'tkazilgan patologoanatomik tekshiruv natijalari tahlil qilindi. Tadqiqot davomida homila va yo'ldoshdagi makroskopik patologik o'zgarishlar o'rganilib, ularning salmonellyozga xos belgilari differensial diagnostika nuqtai nazaridan baholandi. Olingan natijalarga ko'ra, aniqlangan patologik o'zgarishlarning o'zi salmonellyoz tashxisini tasdiqlash uchun yetarli bo'lmadi. Tadqiqot natijalari qo'ylarda abortlarning sababini aniqlashda kompleks diagnostik yondashuv, jumladan patologoanatomik, bakteriologik va boshqa laboratoriya tekshiruvlarini birgalikda qo'llash muhimligini ko'rsatadi.

Kalit so'zlar: patologoanatomik tekshiruv; salmonellyoz; Salmonella abortus ovis; diagnoz; differensial diagnostika; abort; homila; yo'ldosh; kampilobakterioz; xlamidioz

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Аннотация. В статье представлены результаты патологоанатомического исследования случаев абортa у овец, зарегистрированных в условиях фермерского хозяйства. Проведён анализ клинических признаков, макроскопических патологических изменений и результатов бактериологического исследования. Согласно результатам проведённых исследований, сальмонеллёзная этиология абортов не во всех случаях была подтверждена. Полученные данные подчёркивают необходимость комплексной дифференциальной диагностики инфекционных абортов у овец с использованием клинических, патологоанатомических и лабораторных методов исследования.

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Ключевые слова: патологоанатомическое исследование; сальмонеллёз; Salmonella abortus ovis; диагноз; дифференциальная диагностика; аборт; плод; плацента; кампилобактериоз; хламидиоз

1. KIRISH

Introduction

Qo'ychilik chorvachilikning asosiy tarmoqlaridan biri bo'lib, uning iqtisodiy samaradorligi sog'lom nasl olish va qo'ylar reproduktiv funksiyasining ko'rsatkichlariga bevosita bog'liqdir. Qo'ychilikda sohaning taraqqiyoti uchun qo'ylar orasida uchraydigan infeksiyon kasalliklarga qarshi samarali kurashish bo'yicha chora-tadbirlarning zamonaviy usullarini yaratish va tatbiq etish muhim hisoblanadi. To'1 mavsumida bo'g'oz sovliqlarda abortlar qayd etilishi xo'jaliklarga katta iqtisodiy zarar yetkazadi. Abortlarning asosiy sabablaridan biri yuqumli kasalliklar bo'lib, ular orasida salmonellyoz alohida ahamiyat kasb etadi.

Salmonellyoz — Salmonella enterica bakteriyalari chaqiradigan zoonoz kasallik bo'lib, bo'g'oz qo'ylarda yo'ldoshning yallig'lanishi, homilaning nobud bo'lishi va abort bilan namoyon bo'ladi. Tiрик tug'ilgan qo'zilar ham kasallik natijasida zaif bo'lib, ko'pincha yashashga layoqatsizligi tufayli qisqa vaqt ichida nobud bo'ladi yoki o'sish-rivojlanishda ortda qoladi.

2026-yilning to'1 mavsumida Jizzax viloyati Sharof Rashidov tumanidagi «Sardorjon» fermer xo'jaligida bo'g'oz sovliqlar orasida abort holatlari qayd etildi. Xo'jalik epizootologik jihatdan o'rganilib, klinik belgilar, patologoanatomik o'zgarishlar hamda laboratoriya tekshiruvlari o'tkazildi. Mazkur maqolani tayyorlashdan maqsad — fermer xo'jaligida kuzatilgan qo'ylar abortlarini epizootologik, klinik, patologoanatomik va laboratoriya tekshiruvlari asosida baholash hamda differensial diagnostikaning ahamiyatini yoritishdan iborat.

2. MATERIALLAR VA METODLAR

Materials and methods

Tadqiqotlar Jizzax viloyatining Sharof Rashidov tumanidagi qo'ychilik yo'nalishiga ixtisoslashgan «Sardorjon» fermer xo'jaligida olib borildi. Xo'jalikning asosiy faoliyati go'sht va nasldor qo'ylar yetishtirishdan iborat. Suruv veterinariya-sanitariya qoidalariga muvofiq parvarish qilinadi, hayvonlar mavsumiy yaylov hamda qo'ra sharoitida boqiladi. Oziqlantirish ratsioni pichan, somon, donli ozuqalar va mineral-vitamin qo'shimchalaridan tashkil topgan bo'lib, ichimlik suvi bilan doimiy ta'minlangan.

Xo'jalikda jami 300 bosh mayda shoxli hayvon mavjud bo'lib, shundan 240 boshini sovliqlar tashkil etadi. 2026-yilning aprel oyida ketma-ket bir necha kun davomida 20 bosh sovliqda abort sodir bo'lgan. Abortlar asosan bo'g'ozlikning oxirgi davrida kuzatilgan.

Hayvonlarning yoshi, fiziologik holati, homiladorlik muddati, saqlash va oziqlantirish sharoitlari hamda epizootologik vaziyat batafsil o'rganildi. Tekshiruv davomida homilaning tashqi ko'rinishi, ichki a'zolaridagi o'zgarishlar hamda yo'ldosh holatiga alohida e'tibor qaratildi. Abort qilingan homilalar va yo'ldoshlardan namunalar olinib, laboratoriya tekshiruvlari uchun yuborildi. Kasallikning etiologik sababini aniqlash maqsadida bakteriologik tekshiruvlar o'tkazildi hamda abort chaqiruvchi asosiy infeksiyalar bilan differensial diagnostika olib borildi.

3. NATIJALAR VA MUHOKAMA

Results and discussion

Abort qilgan sovliqlarda tana haroratining ko'tarilishi, ishtahaning pasayishi, holsizlanish, ayrim hayvonlarda esa ich ketishi kuzatildi. Ayrim homilalarda teri osti shishi, qorin va ko'krak bo'shlig'ida oz miqdorda seroz suyuqlik to'planishi qayd etildi.

Birlamchi patologoanatomik tekshirishlarda jigarning biroz kattalashgani, rangi qo'ng'ir-qizg'ish tusda bo'lib, yuzasida mayda nuqtasimon qon quyilishlarining rivojlanishi kuzatildi. Shuningdek, ayrim namunalarda taloq hajmining biroz kattalashuvi va o'pkada shish belgilari aniqlandi.



1-rasm. Xo'jalikda abort bo'lgan homilani tekshirish jarayoni / **Fig. 1.** Examination of an aborted foetus on the farm

Yo'ldosh tekshiruvda ayrim kotiledonlarda qalinlashish, giperemiya va nuqtasimon qon quyilishlar kuzatildi. Ayrim hollarda nekrotik o'choqlarga o'xshash o'zgarishlar qayd etildi; ushbu o'zgarishlar homila rivojlanishi jarayonining buzilganidan darak beradi.

Kuzatilgan patologoanatomik o'zgarishlar abort chaqiruvchi bir qator infeksiyon kasalliklarda uchrashi mumkin, shu sababli yakuniy tashxis laboratoriya natijalari asosida qo'yildi. Xo'jalikdan olib kelingan barcha patologik namunalarni bakteriologik tekshirishda 3 holatda salmonellyoz, 2 holatda xlamidioz va 4 holatda kampilobakterioz aniqlandi.



2-rasm. Patologik namunalarni laboratoriyada tekshirish jarayoni / **Fig. 2.** Laboratory examination of the pathological samples

4. XULOSA

Conclusion

O'tkazilgan patologoanatomik tekshiruvlar natijasida abort qilgan qo'ylarda ma'lum patologik o'zgarishlar kuzatilgan bo'lsa-da, laboratoriya tekshirishlarida abortlarning sababi to'liq salmonellyozga bog'lanmadi.

Epizootologik, klinik va patologoanatomik ma'lumotlar hamda laboratoriya tekshirishlari natijalari birgalikda baholanganda, mazkur abort holatlarining salmonellyoz bilan bog'liqligi qisman tasdiqlandi. Ushbu natijalar qo'ylarda abortlarni tashxislashda faqat klinik va patologoanatomik belgilar bilan cheklanib qolmasdan, bakteriologik va zamonaviy molekulyar usullarni qo'llash zarurligini ko'rsatadi. Shuningdek, qo'ylarda abort holatlarining kelib chiqishida salmonellyozdan tashqari brutsellyoz, kampilobakterioz, xlamidioz hamda oziqlantirish va saqlash sharoitlari bilan bog'liq noinfektsion omillar ham muhim rol o'ynashi mumkin.

Kelgusida qo'ylarda abort etiologiyasini yanada tez va to'g'ri aniqlash maqsadida bakteriologik tekshiruvlar bilan bir qatorda serologik, molekulyar-genetik hamda boshqa zamonaviy laboratoriya usullaridan foydalanish ilmiy va amaliy jihatdan maqsadga muvofiq hisoblanadi. Bunday yondashuv qo'ychilik xo'jaliklarida reproductiv yo'qotishlarni kamaytirish, iqtisodiy zararlarning oldini olish va epizootik osoyishtalikni ta'minlashga xizmat qiladi.

DECLARATIONS

Declarations

Author contributions *ORCID*

Conceptualization; Methodology; Investigation; Data curation; Writing – original draft; Writing – review & editing. The author has read and agreed to the published version of the manuscript.

Funding

This research received no external funding.

Ethics approval

The work was carried out as part of routine diagnostic examination of material obtained from spontaneous abortions on a commercial farm, in accordance with the veterinary and sanitary rules in force in the Republic of Uzbekistan. No experimental procedures were performed on live animals and no human participants were involved.

Informed consent

The author has read and approved the final version of the manuscript and has given consent to its submission and publication. The owner of the farm agreed to the examination of the material and to the publication of the results. The study involved no human participants and no personal data.

Data availability statement

All data supporting the findings of this study are presented in the article and are available from the author upon reasonable request.

Conflict of interest

The author declares no conflict of interest.

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Generative AI disclosure

Generative AI was used only partially. The author used Claude (Anthropic, Opus 5) for language editing, formatting of the reference list and preparation of the English and Russian metadata. No text, data, figures or conclusions were generated by AI. The author reviewed and verified all output and takes full responsibility for the content of the publication.

EXTENDED SUMMARY IN ENGLISH

Kengaytirilgan inglizcha xulosa / Расширенный реферат на английском языке

Purpose and research problem

Sheep farming is one of the principal branches of animal husbandry, and its economic efficiency depends directly on obtaining healthy offspring and on the reproductive performance of the ewes. Abortions in pregnant ewes during the lambing season cause considerable economic damage to farms. One of the main causes of abortion is infectious disease, and among these salmonellosis is of particular importance. Salmonellosis is a zoonotic disease caused by bacteria of the species *Salmonella enterica*; in pregnant ewes it manifests itself as inflammation of the placenta, death of the foetus and abortion. Lambs born alive are weakened by the disease and often die within a short time because they are not viable, or lag behind in growth and development. In the lambing season of 2026, cases of abortion were recorded among pregnant ewes on the Sardorjon farm in the Sharof Rashidov district of the Jizzakh region. The purpose of this article is to evaluate these abortions on the basis of epizootiological, clinical, pathoanatomical and laboratory investigations and to demonstrate the importance of differential diagnosis.

Materials and methods

The investigations were carried out on the Sardorjon farm in the Sharof Rashidov district of the Jizzakh region, a holding specializing in sheep farming whose main activity is the production of meat and breeding sheep. The flock is maintained in accordance with veterinary and sanitary rules, and the animals are kept on seasonal pasture and in sheds. The feeding ration consists of hay, straw, grain feeds and mineral and vitamin supplements, with a constant supply of drinking water. The farm holds a total of 300 small ruminants, of which 240 are ewes. In April 2026 abortions occurred in 20 ewes over several consecutive days, mainly in the last period of pregnancy. The age, physiological state and stage of pregnancy of the animals, the housing and feeding conditions and the epizootiological situation were studied in detail. During the examination particular attention was paid to the external appearance of the foetus, to changes in its internal organs and to the condition of the placenta. Samples were taken from the aborted foetuses and placentas and sent for laboratory examination. Bacteriological investigations were carried out to establish the aetiology of the disease, and differential diagnosis was performed against the principal infections that cause abortion.

Results and discussion

In the ewes that aborted, an increase in body temperature, reduced appetite and weakness were observed, and in some animals diarrhoea. In some foetuses subcutaneous oedema and a small accumulation of serous fluid in the abdominal and thoracic cavities were recorded. Primary pathoanatomical examination revealed slight enlargement of the liver, which was brownish-red in colour, with small punctate haemorrhages developing on its surface. In some specimens a slight enlargement of the spleen and signs of pulmonary oedema were also detected. Examination of the placenta showed thickening, hyperaemia and punctate haemorrhages in some cotyledons, and in certain cases changes resembling necrotic foci, which indicate a disturbance of the process of foetal development. Since the pathoanatomical changes observed may occur in a number of infectious diseases that cause abortion, the final diagnosis was established on the basis of the laboratory results. Bacteriological examination of all pathological samples delivered from the farm detected salmonellosis in three cases, chlamydiosis in two cases and campylobacteriosis in four cases. The pathological changes observed were therefore not by themselves sufficient to confirm a diagnosis of salmonellosis, and the aetiology of the abortions proved to be mixed.

Conclusion and contribution

Although definite pathological changes were observed in the ewes that aborted, laboratory examination did not attribute the abortions wholly to salmonellosis. When the epizootiological, clinical and pathoanatomical data are assessed together with the laboratory findings, the connection of these abortion cases with salmonellosis is only partly confirmed. These results show that in diagnosing abortion in sheep it is not enough to rely on clinical and pathoanatomical signs alone: bacteriological and modern molecular methods must also be applied. Besides salmonellosis, brucellosis, campylobacteriosis and chlamydiosis, as well as non-infectious factors connected with feeding and housing conditions, may play an important part in the occurrence of abortion in sheep. In future, in order to establish the aetiology of ovine abortion more rapidly and accurately, it is expedient from both a scientific and a practical point of view to use serological, molecular-genetic and other modern laboratory

methods alongside bacteriological examination. Such an approach will help to reduce reproductive losses on sheep farms, to prevent economic damage and to maintain epizootic well-being. The contribution of this study lies in documenting a field case in which the gross lesions alone would have supported a diagnosis of salmonellosis, while bacteriology revealed a mixed aetiology — a result that argues directly for routine multi-method differential diagnosis.

ADABIYOTLAR RO‘YXATI

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