Research Article

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Diagnosis of Pregnancy and Uterine Infections by Ultrasound During out Breeding in Saanen Goats in Halabja Province, Kurdistan, Iraq

Talib Ghaidan Mnnat Ali

Department of Surgery and Theriogenology, College of Veterinary Medicine University of Sulaimani, Iraq

*Corresponding Author: talib.mnnat@univsul.edu.iq

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Abstract

The aim of this study is to find out the incidence of pregnancy and some uterine diseases, such as hydrometra and mucometra in female Saanen goats out of seasonal breeding by using ultrasound scanning. This study was conducted in January 2022 in field of Saanen goats in Halabja province / Kurdistan Region. Out of 120 examination of female Saanen goats, the investigation were recorded 8 (6.7%) for pregnant, 80 (66.7%) non pregnant and 2 (1.6%) abortion whereas 18 (15%) and 12 (10%) for hydrometra and mucometra respectively. The previous conditions of infected uterus are considered a pseudopregnancy in goats according to the many researchers. In addition to these uterine infections are causes temporary infertility in goats.Therefore, it is preferable to treat such cases as soon as possible using hormones such as PGF2α. Finally it concluded that real-time ultrasound is considered rapid, precise, and accuracy device used for diagnosis of pregnancy and reproductive disorders represented by hydrometra and mucometra in goats.

Keywards: Ultrasonography, Saanen goat, Pregnancy, Hydrometra, Mucometra

تشخيص الحمل ولالتهابات الرحمية بالموجات فوق الصوتية في ماعز نوع سانين خاج موسم التناسل في محافظة حلبجة، العراق

الخلاصة

الهدف من هذه الدراسة هو معرفة نسبة حدوث الحمل وبعض أمراض الرحم ، مثل هيدروميترا وميوكوميترا في إناث ماعزنوع سانين خارج التناسل الموسمي باستخدام المسح بالموجات فوق الصوتية. أجريت هذه الدراسة في كانون الثاني 2022 في حقل لماعزنوع سانين في محافظة حلبجة التابع لإقليم كوردستان. تم فحص 120 ماعز نوع سانين باستخدام جهاز السونار. وكانت انتائج كتالي، تم تسجيل حالتين إجهاض وبنسبة (1.6٪), حمل (6.7) 8 , غير حامل80(66.7), 18 (15٪) و 12 (10٪) hydrometra و mucometra على التوالي. تعتبر الظروف السابقة حمل كاذب في الماعز حسب العديد من الباحثين. بالإضافة إلى هذه الالتهابات الرحمية تسبب عقمًا مؤقتًا في الماعز ، لذلك يفضل علاج مثل هذه الحالات في أسرع وقت ممكن باستخدام الهرمونات مثل PGF2α. وأخيرًا خلصت إلى أن الموجات فوق الصوتية في الوقت الحالي تعتبر جهازًا سريعًا ودقيقًا يستخدم في تشخيص الحمل واضطرابات الرحمية المتمثلة في هيدروميترا وميوكوميترا في الماعز.

Introduction

Saanen goats got their name from the Saanen valley of focal Switzerland and they are regularly perceived as the world's best-created and most elevated milk delivering breed (1). The Saanen goats become laid out as French Saanen, Weisse Deutsche Edelziege (German Superior White), English Saanen, Dutch White Goat, Clean Better White, Bulgarian White, Banat White, Worked on North Russian White. Raising this type of Saanen goats is considered as an examination without precedent for Iraq, particularly in Halabja governorate of the Kurdistan Area. Multiplication in Saanen goats is rearing framework and photoperiod are influencing the beginning of reproducing season (2). The typical estrous cycle length of Saanen goats are 21 days and growth period around 150 days (3). Uterine contaminations, for example, hydrometra, mucometra, are the terms used to depict a condition in goats related with the tirelessness of corpus luteum (CL) that really happen during anestrus with variable gathering of liquid inside the uterus (4). (5) they depicted pseudopregnancy is a neurotic condition portrayed by a gathering of aseptic liquid in the uterus with the presence of a steady corpus luteum with high grouping of progesterone in the plasma for over 25 days. The amassing of liquid in the uterus is much of the time lead to adequate outcome in abnormal extension with elevated degree of progesterone chemical as long as five months due to persevering of corpus luteum progesterone as long as 5 months, consequently looking like typical murmur of pregnancy mirroring ordinary pregnancy signs (4). Liquid that amassed in the uterus is an aseptic liquid that will have no impact in the overall status of the creature essentially toward the start of the condition (6).Ultrasonography is a harmless, and thought about exact and quick technique for pregnancy conclusion, concentrating on the improvement of conceptus and perception of the ordinary and unusual regenerative parcel in animals (7). Hydrometra and mucometra can be separated by the physical and the nature attributes of the liquid in the uterus, as hydrometra will seem anechoic while, mucometra will create hypoechoic picture (8). The average ultrasonographic picture of pseudopregnancy shows non-echogenic liquid compartments isolated by twofold layered flimsy tissue walls called trabeculae that will seem hyperechoic (9). The objective of this study is to figure out the impact of the time in Saanen goats on the pace of pregnancy and uterine illnesses during outside the rearing season in Halabja Governorate of the Kurdistan area.

Materials and Methods

Animals and management

This study were included the examination of a total of 120 Saanen goats by using ultrasound in a typical goat farm which located in Halabja province of the Kurdistan Region / Iraq during January 2022. The field is supervised by veterinarians.The age of the Saanen doe ranged 1–3 years. The inseminations were done in farm

depending on the natural mating. The animals were kept in an indoor rearing and milked twice daily automatically. All information pregnancy, parturition, lactation were recording.

Ultrasonic scanning

The animals were examined throughout the abdominal and transrectal ultrasonographic scanning in standing position at the inguinal area, cranial and lateral to the base of the udder. Using a B-mode (3.5–5 MHz) frequency sector abdominal probe while using linear array transducer, transrectal portable ultrasound with frequency range between (3.5-9 MHz) (Sonoscop A6V) (Sooscop Co.Ltd,Shenzhen 518051.P.R.China) was performed for further investigation. The ultrasonic special gel applied in right side of animal area in cranial of udder(10). Checking was finished by technique portrayed by (11).The ultrasound pictures in certain pregnancy uncovered presence of the early undeveloped or fetal improvement as well as presence of placentomes and fetal designs were seen. In non-pregnancy particularly in states of gathering of clear liquid in the lumen of the uterus there are anechoic pictures.

Results and Discussion

In the current review, a sum of 120 Saanen goats was examined by ultrasonography through transabdominal and transrectal examination. Out of 120 Saanen goats showing 8 (6.7 %), 80 (66.7 %), 2 (1.6%), 18 (15 %), and 12(10 %) for pregnant, non-pregnant abortion, hydrometra and mucometra respectively, (table, 1). The histogram and the table of results revealed that the non-pregnant and the hydrometra percentages are more than compare with other conditions in Saanen goats. Abdominal or transrectal ultrasonographic by using a B-mode 3.5–5 MHz 5-9 MHz frequency sector probe was performed for further investigation.. Ultrasound images of non-pregnancy revealed there is no present of amniotic vesicles or placentomes and/or fetal structures in the uterus. While during ultrasound scanning for positive pregnancy, the detection in light of the perception of designs like undeveloped sacs, early stage liquid, placentome, and foetal parts (fig, 1, 2). The results of the study also showed through ultrasound images evidences to mucometra which characterized by accumulation of fluid mixed with flaks of pus (fig, 3). Another pathological condition was diagnosed by ultrasound is hydrometra which include presence of large amount of anechoic to hypoechoic clear fluid accumulation in the uterus without presence of marked of pregnancy (fig, 4).

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Table:1: Showing the reproductive state in Saanen goats diagnosed by ultrasonography

		Frequency	%
Valid	Pregnant	8	6.7
	Non pregnant	80	66.7
	Abortion	2	1.6
	Hydrometra	18	15.0
	Mucometra	12	10.0
	Total	120	100.0

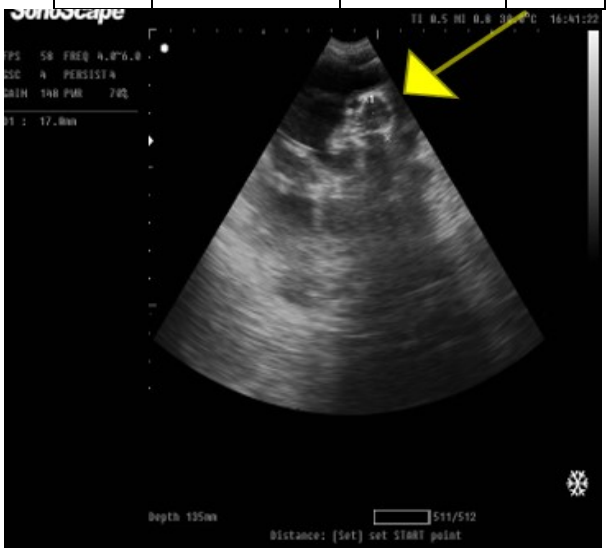

Figure.1: Showing early pregnancy (yellow arrow) in the uterus diagnosed by ultrasonography

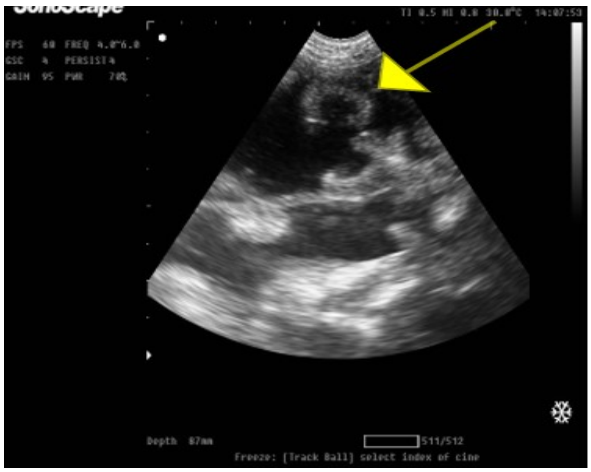

Figure.2: Showing placentome (yellow arrow) diagnosed by ultrasonography

Figure.3: Reveled mucometra characterized by accumulation of fluid mixed with flack of pus in uterus (yellow arrow) diagnosed by ultrasound scanning

Figure.4: Hydrometra characterized by hypoechoic clear fluid accumulation in the uterus (yellow arrow) diagnosed by ultrasound scanning

Real-time ultrasonography considered widely utilized as a procedure to early analyze and advanced pregnancy in sheep and goats(10). Ultrasound scanning is harmless current technique which gives fast and precise location of early pregnancy. Additionally, nearly little misleading positive happen in conclusion by means of ultrasonography. The precision of this

strategy can reached 91-100 percent on the off chance that it is performed by the expertise administrator (10). In present study the incidence of pregnancy by using ultrasound was 8 (6.7%). This percentage was lesser than recorded by (4, 12) which was (92%) and (96%) respectively. Theses variation could be due to their research may be achieved under normal seasonality or they applied a type of protocol of estrous synchronization in goats as well as hormonal treatment of hydrometra and mucometra. Moreover, these programs finally lead to increase the incidence of pregnancy (12, 13). In addition to fertility is influenced by many factors such as sustenance, body condition, utilization of biotechnologies, the board framework and progress in years in solid goat runs(14, 15) .This investigation was recorded 2 (1.6%) abortions. This percentage is similar to(16, 17), their incidence was 2.1% and 1.9% respectively. The explanation of the condition of abortion in Saanen goats may be due many factors, such as, photoperiod effects, hormonal disturbance (progesterone) and nutritional deficiency (18).Pathological conditions of the uterus represented by hydrometra and mucometra. Many researchers considered these pathological conditions called pseudopregnancy (19, 20).which known as gathered of aseptic fluid in the uterine cavity with persistent of corpus luteum. In this instigation were recorded 18 (15%) and 12 (10%) for hydrometra and mucometra respectively. These frequencies were somewhat higher than the 9.0% revealed by (21) furthermore, more higher when contrasted with the 3.0 %, 5.0% and 7 %, obtained by (22, 23) respectively in Saanen goats. The pathophysiology of pseudopregnancy include three mechanisms firstly, failure of Lutelytic mechanism of persistent corpus luteum in the absence of pregnancy, secondly, endometrial secretions under the influence of progesterone hormone and thirdly the myometrium activity enlargement of the uterus and relapse of corpus luteum (24). The occurrence of these conditions hydrometra and mucometra in Saanen goats in regarding to the several factors. Nutritional management may be one of them although it is differed between the properties studies; this reason not considered to predisposed the induction of the uterine infections. According to (25) there is no proof that taking care of and clean administration are etiological variables of these uterine adjustments, Saanen females were have high milking production therefore they milking twice daily in the morning and afternoon. (25) Reported the impact of milk creation on the event of uterine adjustments in goats. This speculation depends on the verifiable truth that, for example, in dairy cattle, endocrine capability can be changed by milk creation. This idea is supported by the reports of (5, 26) who revealed a generally higher frequency in dairy goats. Another variable that could cause these uterine obsessive circumstances is that the organization of hormone for estrus synchronization. (27) observed that the pervasiveness of pseudopregnancy is

measurably something similar in Saanen goats with typical or synchronized estrous cycles, because of increased estrogens is known to be a deciding component of hydrometra (28), furthermore, hydrometra has been demonstrated to be more continuous in goats need to ovulation enlistment (29-31) .In any case, this chance can totally be not related with the current review which not submitted to helped propagation programs. Additionally, as indicated by (19), revealed that impregnability against the activity of prostaglandin hormonal because of the constancy of luteal capability, with a subsequent gathering of aseptic liquid in the uterus, has been shown in Saanen goats by (30). In agreement with (10, 31, 32), ultrasound scanning of the uterus is a fast, exact and productive technique for the conclusion of pregnancy and obsessive alteration of the uterus for example hydrometra and mucometra in Saanen goats.

Conclusions

The percentage of pregnancy in Saanen goats is very low, especially outside the breeding season. In addition to cases of uterine infections lead to infertility, such as hydrometra and mucometra, which are considered a type of false pregnancy.

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Conflict of interest statement

I am declaring that I have no conflict interest in a field of Saanen goats in Halabja province.

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