MORPHO- ANATOMICAL CHANGES OF AWASSI EWES GENITALIA AT DIFFERENT PHASE OF ESTRUS 2- THE UTERINE

Mudhaffar N. Al-Saigh , Saad A. Hatif, Amer M. Hussain
College of veterinary Medicine , Baghdad University Baghdad ,IRAQ
(Received 12 December 2005,Accepted 8 February 2006)
Keyword: Morphology, uterine phases of estrus cycle

ABSTRACT

A total of 99 healthy genitalia of Awassi ewes were collected from AL-Shula . and local abattoirs , Baghdad province , for biometrical measurement of uteri . viz. .weight and length of uterus , no. of caruncles in uterus body and horns . the greater and leaser curvature length of both left and right horns and The diameters of both horns . The results revealed that the mean weight and length of uterus respectively 34.365 g and 1.354 cm were significantly differs due to different phases of estrus cycle. The mean total of caruncles in uterus body and horns \\ere 3.566 and 90.939 which were insignificant!} differ due U. different phases of estrus respectively The greater lengths of the right ,and left horn were 17.270 & 17.769 cm while the leaser lengths were 1 i. 974 & 12.542 cm respectively which were insignificantly differ due to different o ruses of estrus . However the mean different of the right & left horns were 1 .762 & 1 .339 cm respectively which were significantly differ due to different phases of estrus; met estrus , showed the highest values.

INTRODUCTION

Seasonal variation in sexual activity is known to occur in most species of animals. Domestic breeds of ewes varied from being seasonal polyesters to polyesters animals (1) . In tropical and subtropical countries such as Iraq, ewes breed through the year (2)How-ever reproduction is a complicated process as which depend largely on the co-ordination between the female genital tract and rhythmic activity of the hypothalamus- pituitary ovarian axis when co- operate properly , the uterus is considered to be the most important target organ (3). Iraqi sheep are fertile and mainly reached for reproductive performance and milk production .Precise information regarding the activity of the ovaries during estrus cycle phases are an important to understand the pattern of the reproduction capacity of this breed (4). Biometrics data of normal uteri is essential to compare with those having reproductive disorder .However, few studies were carried on the biometrics data o! Iraqi ewes breeds genitalia (4 , 5). No attention has been worked out vet! to study the functional uterine activity of different Iraqi breeds during different phases of estrus cycle . Therefore, this investigation was designed :o elucidate the biometrics values of uterus during different phases of estrus cycle of Awassi ewes.

MATERIAL AND METHODS

Genitalia of 99 healthy ewes, were collected from AL-Shulla and local abattoirs at Baghdad province. Ewes age was determined by denotation and their age ranged between 3-6 years. They include: 28 at pro-estrus ;12 at estrus ; 13 at metestrus and 46 at distrust phases .The animals were checked prior slaughter and the healthy genitalia were only taken immediately after 5-10 minutes of slaughtering and kept in glass containers contained saline 0.9% (Na cl) and left in a cool box containing ice c_ o at 4 °c (

6). Then .the tissues around the genitalia were removed . The weights of these genitalia were taken after there genitalia were left on paper tissue for five minutes to dry off from saline .Biometrical measurement (Fig.1) of the uterine were taken .viz., length of uterus, no. of caruncles in the uterus body and both horns, the grater and leaser curvature length of both horns (right and left). The diameters of the right and left horn also were taken from out side . These measurements were taken by an accurate measuring tape and vernier (7,8).Data were analyzed by analysis of variance. Least significant difference was used to detect the differences among different mean groups (9).

RESULTS

The overall mean weight of uterus was 34.365±g .The weight of uterus was significantly differ among different phases of estrus cycle (Table1). The highest weight was recorded at metestrus (42.187 g) followed at estrus (39.369 g), while the lowest weight were recorded at proestrus and diestrus phases. However the over all mean length of estrus was 1.354 cm which was significantly differ with different phases of estrus cycle, The shortest length (1.008 cm) was recorded, at estrus phase, while the longest length was recorded at diestrus . The overall mean numbers of caruncles in the uterine body and uterine horns were 3.566 caruncles and 90.909 respectively, but no significant differences among different phases were recorded, in spit of the estrus phase showed slightly higher values than other phases. The greater curvature lengths of both right and left horns were 17.270 and 17.769 cm. respectively. The length of the left horn exceeded the right horn 0.499 cm, but no significant differences among different phases was shown. In the mean. While, the leaser curvature length of both right & left horns were 11.974 and 12.542 cm. respectively, same trend was shown that the left horn exceeded the right horn by 0.568 cm. also no significant differences in those lengths among different phases of estrus cycle were detected. The out side of the mean diameters of the right and left horns were 1.362 and 1.339 cm. respectively, which were significantly ($P< 0.01$) affected by different phases of estrus cycle. Metestrus showed the highest values followed estrus phases.

Table (1) The mean values of biometrical measurement of uteri due to different phases of estrus of Awassi ewes S.E.

Character	Overall mean	Proestrus	Estrus	metestrus	Diestrus
No. of observe.	99	28	12	13	46
Weight of uterus (g)	34.365 ± 2.766	32.454 ± 1.878 Bb	39.369 ± 2.897 ABa	42.187± 3.700 Aa	32.012± 220 Bb
Length of uterus (cm)	1.354± 0.131	1.361 ± 0.096 ABa	1.008± 0.074 Bb	1. 292 ±0.1 34 A Bab	1.457 ± 0.068 Aa
No. of caruncles in uterus body	3.566± 0.470	3.393± 0.358	4.033 ± 0.543	3.000 ± 0.424	3.696±0.215
No. of caruncles in uterus horns	90.939 ± 4.725	90.607 ± 3.465	95.000 ± 5.916	91. 154 -± 3.341	90.021± 2.285
The greater curvature length of right uterus horn (cm)	17.270 ±0.677	16.889± 0.515	17.358 ±= 0.636	17.354 ± 0.659	17.454 ± 0.324
The leaser curvature length of right uterus horn (cm)	11.974± 0.635	11. 836 ± 0.041	12.208± 0.691	12.108± 0.677	11.959±0.324
The diameter of right horn (cm)	1.362± 0.065	1.339±0.038 Bb	1.433± o.o57 ABa	1.638 ± 0.109 Aa	1.278±0.028 : Bb
The greater curvature length of left uterus horn (cm)	17.769 ± 0.698	17.732± 0.495	17.800 ± 0.689	17.377±0.786	17.89±4-033^
The leaser curvature length of left uterus horn (cm)	12.542 ± 0.626	12.571 ± 0.338	12. 542± 0.773	12. 069 ± 0.638	12.659 ±-0.335
The diameter of left Horn (cm)	1.339±0.060	1.286± 0.036 Bb	1.433 ± 0.053 ABa	1.539± 0.081 A	1.29± 0.030 B

Different small letters showed significant difference at 5%.
Different capital letter showed significant difference at 1%.

DISCUSSION

The weight of uterus increased significantly and progressively from proestrus phase up to metestrus, This could be attributed to an increase of estrogen induced protein synthesis (10). The length of the uterus (1.354 cm) was nearly similar to those found (1.38 and 1.50 cm). By (11). and (12) respectively, but was lower than that showed (2.62 cm). By (13). Using Libyan ewes. The significant differences in the length of uterus due to different phase of estrus cycle was in agreement to those found by (13) , and (11). However number of caruncles in the uterus body and both horns were insignificantly due to difference phases of estrus cycle, but they were slightly higher at estrus phase, this could be attributed to an increase of estrogen induced protein synthesis (10). The

greater curvature length of the right uterus horn was lower than the left uterus horn. Same trend was conducted by (12). who found that the length of the right horn, was 12.60 cm .and the left horn was 13.56 cm, but (7) showed no differences between the two horns. However, the leaser curvature lengths of both right and left horn showed similar trend, as greater curvature lengths, but (7) and (5) found contrary result. No significant differences in the length of the greater and leaser curvature of both horns during different phases of estrus were obtained which were in agreement with those obtained by (7) and (12). The mean diameter of the right horn was slightly higher (0.023,0) than the left one, this trend was similarity those found by (14), but he found higher values than this study. Mean while, the diameters of both horns at estrus as metestrus phase were highly significant. Compared with those at diestrus of proestrus phase as a result of ovulation, but (7) found no significant difference in the diameters among different phases of estrus cycle. This work concluded that the uterus activity increased in estrus phase. Similar to that of ovary and other organs of female reproductive system .

Fig 1:Showing the structures of genitalia of awassi ewes.

دراسة التغيرات الشكليانية التشريحية للجهاز التناسلي للنعاج العواسي باختلاف أطوار الشبق

مظفر نافع الصائغ *، سعد اكرم هاتف** ،عامر متعب حسين***

*فرع الصحة العامة،كلية الطب البيطري ،جامعة بغداد،بغداد،العراق

**فرع الولادة والجراحة،كلية الطب البيطري ، جامعة بغداد،بغداد،العراق

***فرع التشريح والانسجة، ،كلية الطب البيطري ، جامعة بغداد،بغداد،العراق

الخلاصة

جمعت ٩٩ جهاز تناسلي للنعاج العواسية بصحة جيدة من مجزرة الشعلة والمجازر الأهلية الأخرى لمحافظة بغداد وذلك لأجراء القياسات العيانية للرحم والتي تضمنت وزن ارحم ، طول الرحم ، عدد اللحيمات لجسم وقرون الرحم ، وقطر قرني الرحم . تشير النتائج الى ان معدل الوزن والطول للأجهزة التناسلية تقريبـاً(gm) 34.365 و (cm) 354 هناك اختلافات معنوية في الأطوار المختلفة لدورة الشبق . ان المعدل الكلي للحيمات في جسم الـرحم وقرونه ٣,٥٦٦ و ٩٠,٩٣٩ غير معنوية في الأطوار المختلفة .

أما أطوال الانحناء الأكبر للقرن الأيمن والأيسر (cm) 7.270 و (cm) 177.69 بينما الانحناء الأصـغر (cm) 11.974 و (cm)12.542 تقريباً .

هناك اختلاف غير ملحوظ في الأطوار المختلفة للشبق حيث لوحظ معدل الاختلاف في طول القرون الأيمن والأيسر (cm) 1.362 و (cm) 1.339 تقريباً

وهناك اختلاف معنوي لأطوار الشبق المختلفة (الشبق وما بعد الشبق) أظهرت قيم عليا .

REFERENCES

1. OwenJ.B. (1976). Sheep Production.Bialliere and Tindall-London.
2. Al-Wahab, R.M.H.:AL-Murani,W.K. and AL-Kass,J.E.(1982). Some observations on the breeding season of the Awassi Breed in Iraq. World. Review of Animal Production,18:58-63.
3. Kandil, M.H.A.;El-Bargeesy, G.A.;El.Gharbawy S.M.;El .Saved. M.A. ;Ragab, R.S.and HeleliLB-A. (1993). A micro morphological study on the uterus of Egyptian dose (Capra hircus) during the oestrus cycle .Vet.Med.J.;Giza; 41 (1):97-107.
4. AL-Saigh, M.;N.Hussain,A.M. and Hatif,S.A. (2004). Morpho- anatomical changes of Awassi ewes genitalia at different phases of estrus -I- The ovary. Basrah,J.Vet. Res.;1(1) (Accepted for-Publication).
5. Ali.J.B. ;AL-Dahash,S.Y.A. and Alwan,A.F.(1991). A macroscopical study of the genital tract of Iraqi ewes . Iraqi J. of Vet.Sci.4(1):34-42
6. Luna ,L.G- (1968).Manual of Histologic Staining Method of Armed Forces. Institute of Pathology 3rd (ed.) McGraw- Hill Book Company- New York.
7. Abdel- Rahman, H. (1975). Biomrtical study on ewes genital tract during post estrus. Acta Vetrinarian.Academic Scienliarum Hungaricae, Tomus;25 (4).:335-340.
8. AL-Mukhtar,K.A. ; AL-Alaaf, S.M. and AL-Attar,A.A. (1982). Microscopic preparation . Ministry of Higher Education and Scientific Research. Iraq.
9. Snedecor, G. W. and Cochran, W.G. (1971). Statistical Methods,6UI(ed.). the Iowa State University Press. Ames, Iowa. U.S.A.
10. Dupont- Mairesse, N. and Galand P. (1974). Estrogen action , induction of the synthesis of a specific protein (IP) in the myo meterium, the stroma and the

lumenal epithelium of the rat uterus . Endocrinology 96:1583-91 .
11.Orji.BJ. and Steinbach, J. (1979). Oestrus cycle characterstics of the Nigerian Dwarf sheep.III Histological changes in the female genital tract and associated endocrine gland during occurs cycle East African .Agric. For. J. ; 44 (3): 214-214
12.Johri, D. .K.; Rsizada .B. C. and Pandey, M.D. (1980).Biometry of genital organs in non- describle ewes. Vet. Res. J.; 3 (2): 126-128.
13. Habib . A.M.; Badawy, A.B. and Zaki, K.(1977). Studies on the genital tract of Libyan ewes. Assiut. Vet .Med .J. 5 (9 and 10): 273-283.
14. Sharma,R.D. (1978). A Study on the biometry of the reproductive tract of bikanari ewes . Indian J. Anim. Res.,12 (1): 31-33.