Pathological Study of Reproductive Tracts of Awassi Ewes in Fallujah, Iraq

Ahmed Sami Jarad[1], Abdul Sattar Faraj Majeed[2], Qusay Mohammed Aboud[2], Mustafa Salah Hasan[3], Waleed Hamid Farhan[1] Ahmed Emad Aboud[2]

[1]Department of Pathology and Poultry Disease, College of Veterinary Medicine, University of Fallujah, Iraq,
[2]Department of Veterinary Surgery and Obstetrics, College of Veterinary Medicine, University of Fallujah,
[3]Department of Internal and Preventive Veterinary Medicine, College of Veterinary Medicine, University of Fallujah

Abstract

A total of forty female genital tracts of local sheep, collected from Al-Fallujah abattoir, were utilized for this study during the period from October 2018 to March 2019. Among these 20% of the samples were pregnant with out any abnormality, and 80% were non pregnant (55% without any problem and 25% showed abnormal macroscopically lesion. The main type of abnormalities were, ovarian adhesion, uterus unicornis, inactive ovaries, cystic ovaries, ovarian germ cell tumor and cervical tumor, metritis, salpingitis and hydrosalpinx with an incidence of 10%, 10% , 10%, 20%, 10% , 10% , 10% , 10% and 10% respectively. The histopathological study revealed that there were a histopathological changes in the previous cases, the ovarian giant cell tumor reported at first in this study in Iraq.

Keywords: *genitalia, Awassi ewes, abnormalities*

Introduction

Ewes sheep were a chief farm animals, it play an important roles in Iraq economy through provided meat, milk and wool. Unfortunately the number of sheep weakening by 42 per cent in Iraq [(1)]. The fundamental driver of this diminishing was breakdown of the veterinary framework, including disease determination, observation and indicative administrations [(2)]. A significant factor that affects a population's growth rate is the fertility of its females; genital tract diseases significantly reduce flock productivity and may mean that rearing these animals is uneconomical. Several breeds of sheep were distributed all over the world. The most common breed managed and domesticated in Iraq was the Awassi breed [(3,4)]

Reproductive tract abnormalities of ewes resulting in infertility, subfertility or sterility cannot diagnosed by routine clinical examination so little information in ewes about the etiology of reproductive failure .Butcher house overviews of the genitalia of ewes in various parts of the world give a decent data on the sorts and frequency or pervasiveness of obsessive (inborn or obtained abnormalities [(5,6)].

The data on prevalence of ewes genital tract may propose the job of conceptive illnesses in constraint to sheep generation. Anyway the satisfactory learning is missing on the incidence of etiology and nature of pathological conditions in the ewe genitalia.

The present work was designed to determination the pathological change (macroscopic and microscopic) lesion of ewes genital tract abnormalities in ewes slaughtered at the slaughter house of Fallujah- Anbar province, Iraq.

Materialis and Methods

This study was achieved on forty sheep female genitalia were calm one day each week in Fallujah butchery house that situated in Fallujah district, AL-Anbar province. specimens were gathered during the period from the October 2018 to March 2019. No information about the all history of the animals incorporated into this investigation. The reproductive

tract were separated after evisceration at the abattoir, the samples were transported with cool box contained normal saline to the pathology lab, college of Vet. Med. university of Fallujah, the connective tissue and the fat surrounding genitalia were evacuated beyond what many would consider possible to clear the genital organs for good examination.

Gross examination of different parts of the genitalia were done, including; ovaries, uterine horn, uterine tubes, body of the uterus, cervix, vaginal and vulva [7].

The abnormalities in different parts of the genitalia were recorded. A tissue test from ordinary and influenced some portion of genitalia (area of around one cubic centimeter) were taken and fixed in plastic compartment contained 10% formalin buffered for histopathological examination. The wax box contain biopsy were catted in 7µm in microtome, the handled and recolored done by Luna [8].

Examination of slides and the observation of changes in the abnormalities were reported.

Results and Discussion

Reviewed congenital and acquired pathology of the ewe reproductive system by collection extensive data from abattoir surveys. Out of forty female sheep genitalia examined, 8 (20%) were pregnant and the remain 32 (80%) were nonpregnant genitalia. The stages of pregnancy and the genitalia were appeared normal in all samples. Non pregnant ewes genitalia that give abnormal reproductive tract lesion were (10) (25%) as showed in table (1). Macroscopic lesion were includes; salpingitis, hydrosalpinx, follicular cystic ovary, ovarian fusion, luteal cystic ovary, metritis, uterus unicornis as showed in table (2) and figure (1) respectively, inactive ovaries, cervicitis also reported. These results of abnormality were higher than reported by [9,10,11,12]. This may be due to a shortage of the necessary equipment, veterinary services, disease investigation facilities, surveillance programmes and diagnostic services in Iraq [1,2] or due to the type of feed available; high levels of phytoestrogens in some plant species in Iraq.

Microscopically study showed in (figure:2, A,B) presence of thin walled cystic (follicular) and polycystic ovary also there is a thick wall cyst (figure 2B) which showed hyperplasia of theca cells and degenerative changes in ovarian stroma, The prevalence of cystic ovaries as showed in table (2) were 20%. it is higher than observed by many worker[9,10,12,15,] . Palmieri and his college in [6], they reported a similarly results; cystic structures, hypoplasia or aplasia in apart or in all genital system, our results were in disagreement with data what founded by [16]. in ewes cystic ovaries isn't totally comprehended and has not gotten as much consideration as in dairy cattle, it is a typical finding in various breeds of sheep [6].

The cystic ovaries emerge because of anovulation whereby, rather than relapse, follicles continue on expanding in size and persist [17]. The main cause of cystic ovaries are insufficient of LH prior or at the time ovulation [18]. The incidence of inactive ovaries might be due nutrition deficiency that leads to hormonal dysfunction such as insufficient FSH, which is the primary cause of inactive ovaries [19]. Ovarian tumor were observed in one case 10% from abnormalities, an histopathologic picture showed giant cell ovarian tumor figure (2E) in has been observed presence of giant cell in the ovarian stroma. It is area case and there is a little information about the occurrence of ovarian giant cell tumor. It might be due to genetic factors or other environmental cause.

Histopathological examination of fallopian tube as in Figure 2 (F,G,H) showed pus formation with in the fallopian tube mainly contained neutrophils (pyosalpangitis) arrow. high magnification showed ulcerative formation of uterine tube (ulcerative salpingitis). The obtainable study recommended that the occurrence of salpinx inflammation and hydrosalpingitis in sheep comparatively little frequency with prevalence (10% and 10%) receptivity as showed in Table (2). These discoveries are in arrangement with the result recorded bySaberivand and Haghighi [25]. Adams[13] documented slight inflammation of salpinx in sheep (7%) and Ansari[20] originate 15 cases of hydrosalpingitis in 3,590 genital system of sheep which affected with our study. The low rate in ewes could be because of the valve-like move which makes impact in ewes at the utero-tuba1 intersection through and 3 days after estrus which assumes a role in keeping the augmentation of irresistible specialists from the uterus to the tube[22].

The histopathology exam of uterus showed that the endometrium with cystic endometrial hyperplasia (adenomyosis) figure (2I). dilation of cystic glands with preiglandular fibrosis. The available study also suggested that the incidence of metritis were (10%) which in disagreement with the results approved by [16, 26]. endometritis were the greatest common outcome of uterine irregularity demonstrating that this condition theatres a more significant role in infertility. Endometritis in sheep, like in cattle, is most common in luteal phase or post-delivery and persuades embryonic harm as a result of uterine tissue disruption or through embryo cytolysis [16, 21, 27] .

The histopathology exam of cervix as showed in figure (2K) (A&B), cervix with excessive formation of new glands and congestion of the blood vessels with edema and inflammatory cells in the cervical lumen and interstitial tissue. The prevalence of uterus unicornis was 10%, which might be due to genetic factors as mentioned by [28]. Similar observation have been made by Vojgani[10] and Amin [12].

Finally these outcomes uncover a significant zones of reproduction cost in sheep even the nutrition are best over the time and in the nonappearance of reproductive infections and it might be credited to numerous issues like breed, organization an area specification. Such wounded are complete up of female sheep that fail to reproduct for the reason that of irregularities of the genital region [14].

It was concluded from this study that pregnant animal were slaughter in abattoir 20% while non pregnant were 80% with incidence of abnormality 25% of total sample were collected, this reflect that reproductive status of Awassi ewes in Al-Fallujah city.

Table -1 :showed the distribution of samples according to their reproduction status

Type of genitalia	Total no. Sample	Normal genitalia	Abnormal genitalia
Pregnancy NO. %	8 20%	8 20%	0%
Not pregnancy No. %	32 80%	22 55%	10 25%
Total No. %	40 100%	30 75%	10% 25%

Table -2 : showed the abnormal genitalia in non-pregnancy animal

Abnormal genitalia	NO	%
Cystic ovaries	2	20
Ovarian adhesion	1	10
Cervical tumor	1	10
Uterine unicornis	1	10
Salpingitis	1	10
Hydrosalpinx	1	10
Metritis	1	10
Gaint cell overian tumor	1	10
Inactive ovaries	1	10
Total	10	100

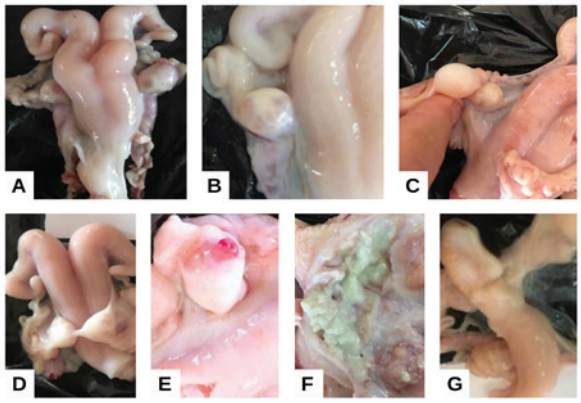

Fig.(1): (A) photograph of Fallopian tubes showed salpingitis. (B):photograph of Fallopian tubes showed hydrosalpinx. (C):photograph of ovary showed follicular cystic ovary. (D):photograph of ovary showed ovarian fusion. (E):photograph of ovary showed luteal cystic ovary. (F):photograph of uterus showed chronic metritis. (G):photograph of uterus showed uterus unicorn.

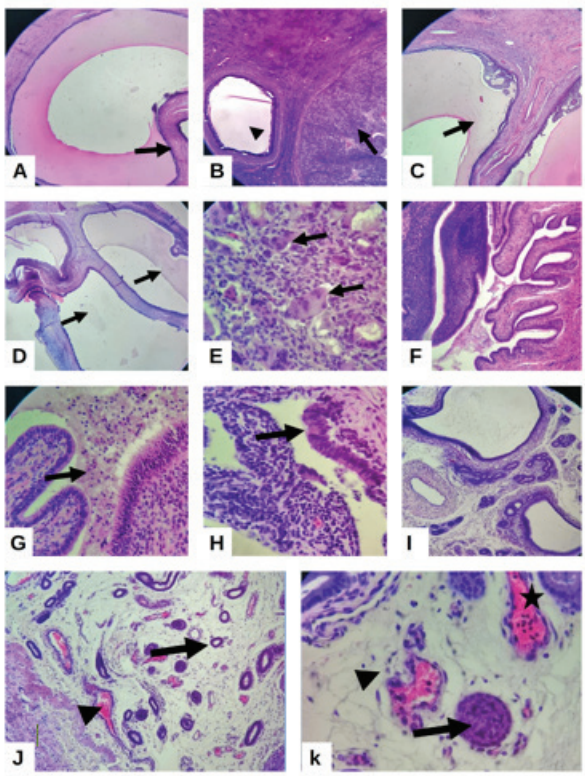

Fig.(2). (A): Histopathology of Ovary showing follicular cyst with thickened wall (arrow) (H & E x 40). (B) Ovary showing lutein cyst with hyperplastic theca with degenerative (arrow) and follicular cyst (arrow head) (H & E x 40).(C&D) Histology structure of ovary showed poly cystic ovary (a and b)(arrow). (E) Histopathological examination of the ovarian tissue showed a giant-cell arteritis of the ovarian arteries(arrow). (F): Histopathological section showed acute salpingitis at low magnification. H & E,(X40) (G) Same section of (F) at high power showed pus formation within salpinx lumen mainly contain neutrophil cell (arrow). H & E,(X400) (H)Same photomicrograph of (G) and (F) at high power from another case of showed ulcerative inflammation (arrow), H & E,(X400). (I) Cystic endometrial hyperplasia (adenomyosis) showed dilated cystic glands (arrow) with periglandular fibrosis (arrow head) H&E 100X. (J):Histological section of cervix showed newly glands formation (arrow) and blood vessels congestion and besides edema (arrow head) with inflammatory cel in lumen and interstitial (asterisks) X100, H & E. (k):Same section of (J) at higher magnification X400, H & E.

Ethical Clearance: The Research Ethical Committee at scientific research by ethical approval of both environmental and health and higher education and scientific research ministries in Iraq

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