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Gross Abnormalities of Abattoir Derived Ovine Reproductive Tract in Jammu Region

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Abstract

An abattoir survey of abnormalities of the genital tracts of 556 ewes in Jammu region of the Jammu and Kashmir was undertaken. Pregnancy was detected in 13.31% of tracts, while 35.07% were found to be abnormal with gross lesions. The highest number of abnormalities were found in ovaries (13.66%) followed by uterus (11.33%) and least in oviducts (10.07%). The most common abnormalities in ovaries were parovarian cysts (5.75%), followed by follicular cysts (4.67%), luteal cysts (2.87%) and ovarobursal adhesions (0.35%). Among the oviductal abnormalities, adhesions (4.67%) were found to be the highest, followed by salpingitis (3.41%) and hydrosalpinx (1.97%). Endometritis was found to be chief reproductive abnormality comprising 8.63% of the uterine abnormalities, followed by pyometra (1.61%) and hydrometra (1.08%).

Key Words : Ewe, Abattoir, Genital abnormalities, Ovary, Uterus, Endometritis

Introduction

Genital abnormalities play an important role in animal breeding by interfering with fertility, causing serious economic losses to livestock owners. Female reproductive pathology seems to be underestimated in ovine species owing to inaccessibility per rectum, and in some cases severe gross lesions are missed due to the lack of specific clinical signs. Strong selective methods adopted by sheep breeders have resulted in high level of fertility by removing and culling infertile ewes (Palmieri *et al*., 2011). Thus investigation of abattoir specimens can provide valuable information about the incidence of reproductive disorders and possible causes. Many abattoir surveys have provided highly variable results ranging from 0.72% (Emady *et al*., 1975) to 46% (Abdul-kareem *et al*., 2007) of tracts having abnormalities. Abattoir survey also serves as a valuable tool to estimate reproductive wastage regarding proportion of ewes, which are pregnant at the time of slaughter. This study was carried out to obtain further information on incidence of genital tract abnormalities in slaughtered ewes and reproductive wastage in terms of proportion of pregnant ewes at the time of slaughter in Jammu region.

Materials and Methods

A total of 556 reproductive tracts of ewes were collected from municipal slaughter house, Jammu.

Samples were collected three times per week for a period of one year from January, 2012 to January, 2013. Specimens were transported to laboratory within one hour of collection in a suitable container. The ewes were of non-descript type falling under the age group of 1 to 6 years having no previous history.

In the laboratory, specimens were examined per rectal and divided into pregnant and non-pregnant groups. The stage of growth or regression of corpus luteum was accessed according to the method of Restall (1964). The number and location of fetuses (right or left uterine horn) was noted. Gross morphological abnormalities of genitalia were recorded. All tracts were then incised along the longitudinal axis of uterine body and uterine horns to obtain pathological conditions, if any.

Results and Discussion

The results revealed that out of 556 reproductive tracts 74 (13.31%) were found to be pregnant. The results were intermediate in terms of earlier reports of Smith *et al.* (1999) and Moghaddam and Gooraninejad (2007), who reported pregnancy rates of 3.4% and 21.4% in ewes, respectively. Among the pregnant uterus, 87.84% had single pregnancy and only 12.16% had twin pregnancies (Table 1). In terms of location of fetuses in respective uterine horns, 64.61% fetuses were in right horn and only 35.39% were found in left horn. The results are consistent with the fact that maximum ovulation occur from right ovaries in ewes. Alosta *et al.* (1998) recorded 60.8% and 39.1% pregnancies in right and left horns, respectively, owing to the fact of 56.9% ovulations from right ovary recorded in the same study. The distribution of fetuses in twin pregnancy was found equal between the two horns.

Table 1: The number of corpus luteun and fetuses and their distribution in 74 pregnant ewes at the time of slaughter

Corpora lutea on ovaries Right/Left	Location of fetus(es) in uterine horn		
	Right	Left	Right and Left
1/0	31	2	0
0/1	1	13	0
1/1	7	5	5
2/0	2	0	2
0/2	1	3	2

A high proportion of reproductive tracts were found to be abnormal (35.07%) contradicting to the earlier reports of 3.3% and 25.8% by Smith *et al.* (1998) and Moghaddam and Gooraninejad (2007). However, Abdul-kareem *et al.* (2007) and Dawood (2010) recorded quite high 46% and 45.79% abnormalities in genital tracts, respectively. The numbers of abnormalities were relatively high in ovaries (13.66%) as compared to uterus (11.337%) and oviducts (10.07%). The results are in accordance with Moghaddam and Gooraninejad (2007), who reported highest abnormalities in ovaries (20.1%). In contrast, Abdul-kareem *et al.* (2007) found highest abnormalities in uterus (70%) followed by ovaries and oviducts.

The gross abnormalities recorded along with the respective locations are presented in Table 2 and Plates 1 to 5. Parovarian cyst (5.75%) was the commonest abnormality effecting ovaries, while adhesions (4.67%) and endometritis (8.63%) were the chief pathologies of oviducts and uterus, respectively. Our study confirmed the results of earlier reports of Abdul-kareem *et al.* (2007) and Moghaddam and Gooraninejad (2007). Endometritis being the commonest abnormality was consistently recorded in luteal phase of estrous cycle that is in accordance with the previous studies

Plate 1: Photograph showing parovarian cyst containing clear fluid

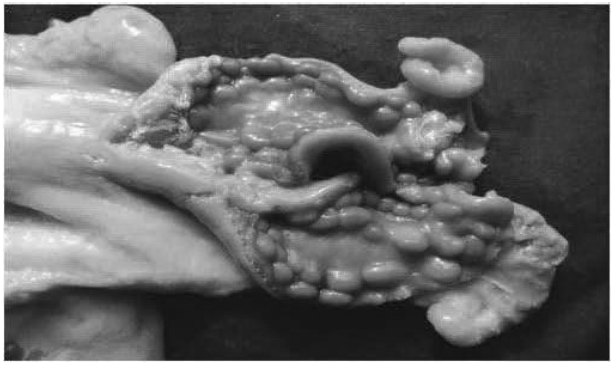

Plate 2: Opened uterus of ewe affected with endometritis

Plate 3: Uterus containing pus, affected with pyometra

Plate 4: Uterine tube containing clear fluid affected with hydrosalpinx

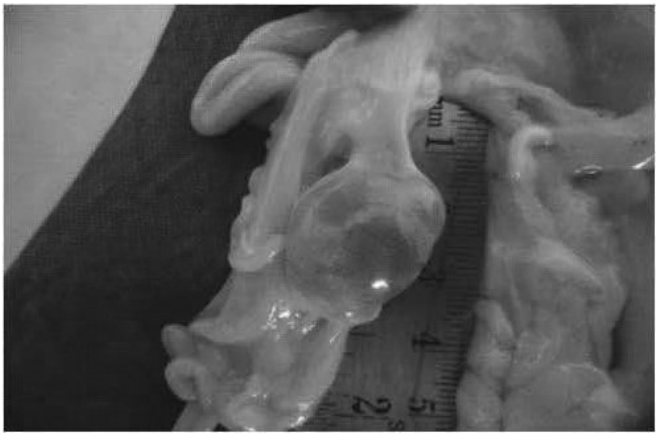

Plate 5: Follicular cyst with transparent wall containing clear fluid

which explained that uterine immune functions are suppressed during the luteal phase in gilts (Wulster-Radcliffe *et al*., 2003; Jana *et al*., 2004). It was concluded that high incidence of reproductive abnormalities is leading to the unprecedented rate of slaughter of ewes, however increased rate of slaughter of pregnant ewes, as found in this study represents a considerable loss in terms of production and income.

Table 2: Gross abnormalities of the reproductive tract of ewes

Organ	Abnormality	Total	% of affected tracts	% of total tracts
Ovaries	Parovarian cysts	32	16.41	5.75
	Follicular cysts	26	13.33	4.67
	Luteal cysts	16	8.20	2.87
	Ovarobursal adhesions	2	1.02	0.35
Oviducts	Adhesions	26	13.33	4.67
	Salpingitis	19	9.74	3.41
	Hydrosalpinx	11	5.64	1.97
Uterus	Endometritis	48	24.61	8.63
	Pyometra	9	4.61	1.61
	Hydrometra	6	3.07	1.08

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Conflict of Interest: All authors declare no conflict of interest.

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