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Research Article

Incidence of reproductive abnormalities in small ruminants

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ABSTRACT

A total of 86 female genitalia of sheep and goat were collected from the abattoirs of Srinagar. Various abnormalities observed were, parasitic cyst (*Taenia hydatigena*, 8.14 %), cystic ovary (follicular cyst, 3.49 %; luteal cyst, 1.16 %), endometritis (1.16 %), mummified fetus (1.16 %), macerated fetus (3.49 %), pyometra (1.16 %), ovaro-bursal adhesion (1.16 %), double os cervix (1.16 %), bent cervix (29 % in sheep and 2.33 % in goat). Photographs of the pathological observations are presented.

Key words : Cyst, Pyometra, Mummified fetus, Macerated fetus

INTRODUCTION

The reproductive abnormalities in ruminants cause great loss to the livestock sector. These pathological defects may result in partial or complete reproductive failure (Hafez and Hafez, 2000). Follicular cysts have been described in goats and other animals. (Reddy *et al.*, 1997; Wani *et al.*, 2006[a], Wani *et al.*, 2006[b] and EI-Wishy, 1976). The documentation of pathological conditions of the female genitalia in small ruminants is scanty. The present paper reports pathological changes observed in the reproductive tracts of sheep and goat. It may help clinicians to diagnose the conditions in field.

MATERIALS AND METHODS

86 female genital organs of sheep and goat were collected from the local abattoirs located in an around Srinagar city. Immediately after collection the samples were brought to the laboratory in the thermos flask and were examined from external to internal morphology and various physiological and pathological changes. The age of fetus was determined as per the method described by Richardson *et al.* (1980). Abnormalities found in the different parts of the reproductive tracts were documented.

RESULTS AND DISCUSSION

Occurrence of the various reproductive abnormalities is presented in table 1. The locations of parasitic cysts were either in between rectal and vaginal wall or on the external wall of the vagina (Fig 1). Report on occurrence of the parasitic cyst on the reproductive tract is rare. Incidence of parasitic cyst on the reproductive tract recorded in the present study (6.98 % in sheep and 1.16 % in goat) was higher than the report of Cassali and Nasuimento (1994) in different parts of uterus and in ligamentum latum in ewes (2 %). Presence of cyst in various vital organs like liver of ewes (Abu Samra *et al.*, 1984); liver and peritoneal cavity of pig (Blazek *et al.*, 1985); peritoneal and thoracic cavity, liver, lung and pleura of goat (Pathak *et al.*, 1982); pericardium of lamb (Pellegrini *et al.*, 1982) and intestine and duodenum of dog (Buslaeva, 1976) was reported. Out of seven reproductive tracts with parasitic cyst only one was gravid. All the cysts were identified as *Taenia hydatigena* as per Soulsby (2005).

The incidence of follicular cyst in this study was 3.49 % in sheep, while the incidence in the earlier reports were 0.27 % in goat (Reddy *et al.*, 1997; Wani *et al.*, 2006[b]) and 3.35 % in cows (Chaudhari *et al.*, 2000). In one genitalia with follicular cyst in the ovaries, both the uterine horns were bulged giving an appearance of gravid uterine horn and caruncles were cystic in appearance (Fig 2). The incidence of cystic corpus luteum was 1.16 % in goat, while in other reports the incidences were 0.6 % in cow (El-Wishy, 1976); 15% (Ansari, 1978) and 2.5% (Wani *et al.*, 2006[b]) in ewes. The cystic corpus luteum was present in the left ovary (Fig 3). The caruncles of the left uterine horn were more developed compare to the right.

The incidence of ovaro-bursal adhesion was 1.16 % in sheep. Ovaro-bursal adhesion has also been reported in cows (2.9 %) by Chaudhari *et al.* (2000), goats (0.31%) by Reddy *et al.* (1997) and buffaloes (13.67 %) by Khan *et al.*, (1989). Both of the ovaries remained attached with their bursa (Fig 9). The caruncles were developed and possessed gelatinous material on the centre.

Fig 1.

The incidence of endometritis (1.16%) in goat in the present study was much lower than the report of Smith *et al.* (1999) in ewes (9.92%) and (13.51%) in nulliparous sheep. Uterine horns were symmetrical. Caruncles were haemorrhagic and flakes of pus were present in both the horns (Fig 4). *Corynebacterium pyogenes* was isolated and identified from the uterine fluids. Persistent Corpus Luteum (PCL) was present in the left ovary. The incidence of mummification was 1.16 % in sheep, while the previous reports were 0.06 % in goats (Reddy *et al.*, 1997), 7 % (Ansari, 1978) and 2.25% (Wani *et al.*, 2006[b]) in ewes. The mummified fetus was found in the left uterine horn (Fig 5). The left ovary contained PCL whereas the right ovary had five follicles. The incidence of pyometra was accounted as 1.16 % in sheep. The uterus was of irregular shaped with enlarged horns. Pus was observed in both the horns (Fig 6). Left ovary had PCL. The case was positive for Brucellosis. The incidences of pyometra in the earlier reports were 0.50 % (Ansari, 1978) and 2.25 % (Wani *et al.*, 2006[b]) in ewes . The incidence of macerated fetus was 3.49 % in sheep in present study. The reported incidence of intrauterine maceration of fetus were 0.3 % (Ansari, 1978) and 2.25 % (Wani *et al.*, 2006 [b]) in ewes and 0.03 % in goats (Reddy *et al.*, 1997). In the present study, the macerated bones were found in the Cervix and vagina (Fig 8). Externally both the uterine horns were symmetrical with curved cervix and enlarged vagina. On pressure the vagina gave a typical crepitating sound. The caruncles were pale in colour with cavitations.

The incidence of double os cervix (1.16 %) in sheep in the present study was higher than the finding of Reddy *et al.* (1997) in goat (0.03 %). Cervix was slightly curved with double os. Out of two one opening (os cervix) was developed and another had blind end (Fig 7). An unimplanted elongated blastocyst was present in the left horn of the uterus. Left ovary contained corpus luteum (CL). The incidence of bent cervix in sheep (29 %) and goat (2 %) recorded in this study was much higher than the report of Reddy *et al.* (1997) in goats (1.70 %) . This abnormality was more common along with other abnormalities in sheep. The abnormality was recorded both in pregnant and non pregnant genitalia (Fig 10).

Table 1: Incidence of various reproductive abnormalities in small ruminants

S. No.	Pathological Conditions	No. of observations	% of incidence	
			Sheep	Goat
1	Parasitic cyst	7	6.98	1.16
2	Follicular cyst	3	3.49	--
3	Cystic corpus luteum	1	--	1.16
4	Endometritis	1	--	1.16
5	Mummified foetus	1	1.16	--
6	Pyometra	1	1.16	--
7	Double os-cervix	1	1.16	--
8	Macerated foetus	3	3.49	--
9	Ovaro-bursal adhesion	1	1.16	--
10	Bent cervix	27	29.00	2.33
Total		**86**		

Fig 1. Parasitic cyst (*Taenia hydatigena*) in the female genital organ, arrow indicates hooks on the scolex

Fig 2. Follicular cyst in the ovary

Fig 3. Cystic corpus luteum in the ovary

Fig 4. Endometritis, arrow showing haemorrhagic caruncles

Fig 5. Mummified fetus

Fig 6. Pyometra showing pus

Fig 7. Double os cervix

Fig 8. Macerated bones in the vagina with slight involvement of cervix

Fig 9. Ovaro-bursal adhesion

Fig 10. Bent cervix

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