

Research Paper

# Incidence of Genital Organ Abnormalities in Female Genitalia of Marwari Goats

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## ABSTRACT

The present study was conducted to record various gross genital abnormalities of female genital organs in Marwari goats. A total of 115 genital organs were collected from municipal and local abattoir of Bikaner city, randomly. Slaughtered genital organs were segregated in 3 groups viz. healthy non pregnant, pregnant and abnormal groups based on their visual observations. The incidences of various gross genital abnormalities were recorded. Out of total 115 genitalia collected, 80 were found to be grossly normal (69.56%). The percentage of pregnancy wastage was 11.30% (13 out of 115). Over all 22 (19.13%) genitalia had abnormalities. The common genital abnormalities found were uterine infections (18), ovarian cyst (3) and parovarian cyst (1), respectively. All these genital disorders are causes a big damage to reproductive health of goat and if they are not diagnosed or treated early then they cause infertility.

**Keywords:** Genital abnormalities, incidence, Marwari goat

Small ruminants play a vital role in the economic and social livelihoods of people in developing countries (Kosgey *et al.* 2008). Goats were one of the first animals to be tamed by the human being. The goat is considered a "Poor man's cow" in India and a "Wet nurse of infants" in Europe. According to 20<sup>th</sup> Livestock Census 2019, the total goat population in our country is 148.88 millions (M) showing an increase of 10.14% over the previous census. About 27.8% of total livestock is contributed by goats. Rajasthan is one of the leading states in goat population (20.84 M) followed by West Bengal (16.28 M) and Uttar Pradesh (14.48 M). Local goats have been part of rural livelihoods for millennia and have been instrumental in poverty reduction in resource poor communities in developing countries. They thrive in nearly all ecosystems, including harsh, frigid and arid zones and have developed certain valuable genetic traits such as ability to perform better under low input conditions, tolerance to diseases and parasites as well as heat stresses

(Peacock, 2005; Kaumbata *et al.* 2020). The Marwari goat is a medium-sized animal predominantly black in color native to Western Rajasthan in the districts of Barmer, Jaisalmer, Bikaner, Jodhpur, Jalore, Pali and Nagaur. It is a dual-purpose breed and reared for both mutton and milk and is well adapted to the harsh environment of the Thar desert.

One of the major constraints of goat production is poor reproductive performance of the animals. When infertility and sterility levels are higher in female goats, it incurs heavy economic losses and the farmers are forced to cull such animals (Beena *et al.* 2015). The *Capra hircus* species is a domestic animal in which the reproductive physiology is least understood compared to cattle, sheep and

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pigs. Description of the goat is usually made as if it is identical to sheep (Smith, 1986). Some work on the morphology, physiology and pathology of reproductive organs of the goat (Epelu *et al.* 1988; Sattar *et al.* 1988; Torres and Badioglan 1989; Moreraia *et al.* 1991; Virmani, 1993; rahman *et al.* 2008 and Alam *et al.* 2018) had been reported in different countries. A high proportion of goats are culled and sent to slaughter house because they are having some disease or uneconomic for the owner to maintain them. Also pregnant goats are often brought to abattoirs leading to pregnancy wastage. The information on the prevalence of female genital abnormalities may suggest the role of genital diseases in the limitation to goat production (Beena *et al.* 2015); therefore present study was aimed to record various gross genital abnormalities of female genital organs in Marwari goats.

## MATERIALS AND METHODS

### Experimental location and duration

The whole experiment was conducted during June 2022 to October 2022 (15/06/2022 to 31/10/2022) at Department of Veterinary Gynaecology and Obstetrics, College of Veterinary and Animal Science, Rajasthan University of Veterinary and Animal Sciences, Bikaner, India. Bikaner city is situated in Northwest of the state of Rajasthan, at 28°:1' East longitude and 73°: 19' North latitude at an average altitude of 797 feet from sea level.

### Collection of samples

The samples were collected from municipality and local slaughter house of Bikaner city. During routine slaughtering operations the reproductive tracts of female Marwari goat genitalia were collected in the thermocol box with ice packs. A total of 115 genital organs of Marwari goat were collected.

### Segregation of organs and recording incidence of genital abnormalities

The genital organs were segregated in 3 groups viz. healthy non pregnant, pregnant and grossly abnormal groups based on their visual observations. A descriptive survey of female reproductive tracts abnormalities was carried out. Gross evaluations were carried out by visual appraisal, palpation and

incision. Pathological conditions in various parts of female genital system were categorised based on characteristic gross features.

## RESULTS AND DISCUSSION

Out of total 115 genitalia collected, 80 were normal (69.56%) that were used for further biometrical and physiological studies. The proportion of slaughtered pregnant goats was 11.30% (13 out of 115). Over all 22 (19.13%) genitalia had abnormalities. The common genital abnormalities found were uterine infections (18), ovarian cyst (3) and parovarian cyst (1), respectively (Table 1, Fig. 1-4).

**Table 1:** Comparative incidence of different genital organ abnormalities of Marwari Goat

Parameter	Number	Incidence (%)
Total organs collected	115	—
Healthy	80	69.56
Pregnant	13	11.31
Total abnormal	22	19.13
(a) Uterine infections	18	15.65
(b) Ovarian cysts	3	2.61
(c) Parovarian cyst	1	0.87

In the present study out of total 115 genitalia collected, 22 (19.13%) were having genital abnormalities while 13 (11.30%) pregnant goats were slaughtered. Approximate similar figure (10.30%) on pregnancy wastage was reported by Alam *et al.* (2018) in ewes. The reproductive abnormalities in different parts of reproductive system out of total 115 samples collected were found to be highest in uterus (15.65%), followed by ovary (2.61%). Higher incidence were recorded by Beena *et al.*, 2015 as the overall occurrence of pathological conditions in the female genitalia of goats were 23.32%. Out of total genitalia examined (115), the total incidence of different abnormalities recorded in uterus was 15.65% including metritis, endometritis and pyometra. This incidence of abnormalities is in correlation with previous findings of Al-Baggal *et al.* 1993 (14.69%); Francis, 2009 (14.06%) and Beena *et al.* 2015 (12.42%) in goats as well as Smith *et al.* 1999 (13.52%) in nulliparous sheep. Lower rates were recorded by Agrawal *et al.* 2015; Talukder *et al.* 2015 and Mushonga *et al.* 2017 viz. 8.08%, 10.20% and 7.80%, respectively. Occurrence of ovarian cysts in the present study was 2.61%



(3/115). Higher incidence of ovarian cyst (13/154; 8.44% and 21%) were recorded by Beena *et al.* (2015) and Dharani *et al.* 2019, respectively in slaughtered genitalia of does. In the present study one case of parovarian cyst was found whereas Virmani (1993), reported only 3 cases of parovarian cysts from 900 goat genitalia and Rahman *et al.* (2008) found 2 cases of parovarian cyst in their studies. These pathological disorders are factors of infertility and cause a big damage and irreversible alterations in the endometrium if they are not early diagnose and adequately treat (Benchaib and Niar, 2005). These variations might be due to differences in breed, hormonal and physiological factors, management, geographic environment and level of nutrition (Kumar, 2019). The nature of uterine lesions reflects the reproductive health status which is useful in diagnosis of hypothalamo-pituitary abnormalities and influence of hormones on individual animal (Kurman, 2002).

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