

## Case report

# Hermaphroditism in a Goat: A Case Report

### ABSTRACT

A Six-month old prepubertal female goat was presented to Gynaecology division of Teaching Veterinary Clinical Complex, College of Veterinary Science, Khanapara, Guwahati-22, with the history of an abnormal mass at urinary orifice disturbing the urine flow. On clinical examination the mass was found as prominent clitoris, red in colour and felt pain upon palpation of the mass. The case was diagnosed as hermaphroditism.

*Key words: Clitoris; hermaphrodite; goat*

### INTRODUCTION

True hermaphroditism is a rare form of intersex disorder presenting with ovarian and testicular tissue within an individual. The incidence of intersexuality is highest in goats among the farm animals and accounts for about 2-15% (Hafez et al., 2005). True Hermaphroditism was diagnosed in a goat with abnormal urinary discharge and small protruding mass from the uroneum [4,5]. This condition causes serious unacceptable issues in terms of breeding, health issues and genetics [6-8]. The etiology of true hermaphroditism is multifactorial but commonly involves genetic mal-segregation during embryogenesis, chromosomal deletions (loss of part) or translocations (part transferred to another) (Roberts, 1986).

### CASE PRESENTATION

A Six-month old prepubertal female goat was presented to Gynaecology division of Teaching Veterinary Clinical Complex, College of Veterinary Science, Khanapara, Guwahati-22, with the history of an abnormal mass at urinary orifice disturbing the urine flow.

### CLINICAL OBSERVATION AND TREATMENT

Upon the general examination conjunctival mucus membrane, popliteal lymph nodes and body temperature appeared to be in normal. The animal was healthy and active. During the Physical examination the abnormal mass swelled at urinary orifice (Fig. 1a). It appeared to be penile swelling and was red in colour and felt pain upon palpation of the mass (Fig. 1b). Thus, on grounds of history and Clinical examination the case was diagnosed as Intersex or Hermaphroditism. Injection of Avilin and Meloxicam was given intramuscularly and advised the owner do not use the goat for breeding purpose in future.

### DISCUSSIONS

The pathophysiology of hermaphroditism, where both ovarian and testicular tissues are functional and may drive opposing sexual phenotypic expression. These individuals may be born with ambiguous genitalia as well as abnormal hormone levels signaling reproductive dysfunction. Both gonadal tissues can be affected in a functional sense, which is going to contribute toward the overall health of the animal and its ability to reproduce. Clinical Signs of true hermaphroditism in goats are ambiguous external genitalia, abnormal reproductive

behaviors and some urinary tract anomalies. The goat showed abnormal discharge from the urinary orifice and a hanging mass in its body indicative of reproductive system lesions, which was demonstrated by case presented. Further their was enlarged cervix, kinked in nature appearing as fish hook vulva compromising with results of Roberts 1986, Hafez et al.,( 2005) and Weng et al .,(2005) All this can be observed in infertility process, oestrous cyclicity irregularity that may appear other signs of hormonal imbalances Diagnosis of true hermaphroditism usually requires a physical examination, hormonal assays and imaging studies. Clinically, the patients might have atypical external genitalia and thus a physical examination suffices as one of diagnostic investigation for these cases. There is a place for imaging studies, e.g. ultrasonography to evaluate the internal reproductive .Diagnosis in the case of a present study was confirmed on clinical examination and presentation. To summarize, the present report describes an uncommon but significant malformation in goats with Intersex and stresses on accurate diagnosis & management of such cases. Knowledge of the etiology, pathophysiology, clinical manifestations and diagnostic methods is important in caring for affected animals.

#### References –

1. Roberts, S.J. 1986. *Veterinary Obstetrics and Genital Diseases*. 2<sup>nd</sup> , CBS Publishers and distributors
2. Hafez, S.A., Huckle, W.R. and Caceci, T. 2005. Anatomical, histological and genetic investigations of a sexually anomalous goats. *Veterinary Records*, 157 (7):513-516.
3. Weng, Q., Murase, T., Asano, M, and Tsubota, T. 2005. Male pseudohermaphroditism in a Raccoon dog (*Nyctereutesprocynoides*). *Journal of Veterinary Medicine Science* 67: 603-605.
4. Gupta C, Murugan M, Ramprabhu R. Male pseudohermaphroditism in goats: A case report. *Indian Journal of Small Ruminants (The)*. 2022;28(1):221-3.
5. Azizi S, Kheirandish R, Sami M. Occurrence of bilateral dysgerminoma in a true hermaphroditism goat. *Comparative Clinical Pathology*. 2015 Mar;24:469-72.
6. Eaton ON. The relation between polled and hermaphroditic characters in dairy goats. *Genetics*. 1945 Jan;30(1):51.
7. Özel Ç, Şen G, Hitit M, Koçak N, Güzeloğlu A, Semacan A, Kurar E. A case report of hermaphrodite goat: Clinical and genetic approach. *Eurasian Journal of Veterinary Sciences*. 2014 Dec 23;30(4):227-31.
8. Saeed K, Manzoor S, Rind KH, Otho SA, Aziz A, Khan MA. A Morphological Hermaphroditic behavior for the first time reported in Domestic goat (*Capra aegagrus hircus*) in Sunigram Valley district Buner, KP Pakistan. *Elementary Education Online*. 2021 Apr 27;20(4):2299-.



Fig 1: exposed clitoris and abnormal mass swelled at urinary orifice

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