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EXAMINING THE ANOMALY OF AN IMPERFORATED HYMEN IN A HOLSTEIN FRIESIAN HEIFER: A SCARCE AND INTRICATE CASE

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Article Info

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Abstract

An atypical and intricate case came to light when a 20-month-old Holstein Friesian heifer presented with an obstruction in its genital tract during an artificial insemination procedure carried out by a field veterinarian. The animal displayed a regular oestrous cycle without any signs of cervico-vaginal discharge during oestrus, which added to the complexity of the case. A per vaginal examination exposed a thick muscular band located in front of the external urethral orifice, which was subsequently diagnosed as an imperforated hymen. To address this seldom-seen hymenal defect, a trocar was employed to create a perforation, followed by dilation through digital pressure. In this 300-word abstract, the various facets of this extraordinary case are thoroughly examined, shedding light on the diagnostic and treatment methods used to manage such an infrequent condition in a Holstein Friesian heifer.

Introduction

A hymen (transverse ridge) is located at the junction of vagina and vestibule which is well defined in the ewe and mare, but ill-defined in the cow and sow (Kumar, 2009). The most common developmental aberration of the female tubular organs involves a variable degree of persistence of the hymen. This may appear as a vaginal constriction in front of the urethral opening, as a partition with a central aperture or as a complete partition between the vulva and vagina (Parkinson *et al.*, 2001). A persistent hymen is considered to be a form of segmental aplasia and is a result of an embryonic malunion of the paramesonephric (Mullerian) ducts and the ectodermal urogenital sinus. Heifers that have a complete hymen accumulate secretions in the vagina and also may develop mucometra (Kumar *et al*., 2017). Persistent hymen is one of the various developmental defects of genital tract in cattle. A persistent hymen occurs occasionally in the cow, either as a single lesion or associated with segmental aplasia. In the Holstein breed, inheritance is suggested to be due to autosomal recessive genes that are linked for aplasia affecting the left and the right uterine horns (Robert, 2007).The anterior vagina and uterus are distended with secretions if the hymen is totally imperforated, causing continuous distress to affected cow (Hafez,2000).

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Case history and observations

A heifer of Holstein Friesian (20 months old) was brought to Veterinary Clinical Camp at Hamirpur (Himachal Pradesh) with history of obstruction in genital tract. Artificial insemination was tried twice by the field veterinarian at the time of manifestation of estrus signs. Animal showed regular oestrous cycle without cervico-vaginal discharge during oestrus. Manual vaginal examination of heifer revealed a thick muscular band present in front of external urethral orifice and diagnosed as imperforated persistent hymen.

Treatment and Discussion

The animal was given caudal epidural anaesthesia with 2% lignocaine hydrochloride (3ml; 1ml/100kg body weight) and the imperforated hymen (Fig. 1) was punctured aseptically with a trocar guarded by fingers. The hole was dilated to its maximum by digital pressure. After perforation (Fig. 2), there was expulsion of dark red copious cervico-vaginal discharge (Fig. 3) suggestive of collection of metestrual mixed cervico-vaginal discharge of previous oestrous cycles. A total of 700-800 ml blood mixed mucus discharges was evacuated. Douching of vagina was done with potassium permanganate lotion (1:1000). Vagina was smeared with 2% Lignocaine jelly (Lox®; Neon labs), zinc oxide and Framycetin sulphate ointment (Soframycin®; Aventis Pharma ltd.) for 5 days to avoid formation of adhesions in vagina. Parenteral administration of Injection of long acting Enrofoxacin 20 ml by i.m route (Flobac SA®; Intas Pharmaceuticals) and anti-inflammatory drug such as Meloxicam 15 ml at the dose rate of 0.2 mg/kg body weight (Melonex®; Intas Pharmaceuticals) were also given 3 days by i.m route. Animal showed uneventful recovery with all visible normal signs such as cervico-vaginal discharde in subsequent estrous cycle.

Fig. 1: Thick muscular band

Fig. 2: After perforation

Fig. 3: Dark red copious discharge

For the treatment of imperforated hymen, two methods have been suggested. In one method, incising at the point of the greatest bulge followed by enlargement of the incision at the right angles in the four directions is advocated. In the other method, a circular incision along the entire outer border of the persistent hymen is advised (Roberts, 2007).

A similar condition is observed in crossbred heifers (Madhusudan *et.al.* 2016; Kumar *et.al.* 2017) and Murrah buffalo (Singh *et.al.* 2010; Kumar *et.al.* 2016) in which foul-smelling pus like (Madhusudan *et.al.* 2016; Kumar et al. 2016), mucus (Kumar *et. al.* 2017) like fluid was evacuated through vagina. This condition has to be managed well in time to avoid the infertility in affected heifers.

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