

Hysteroscopic Visualization of Bubaline Uterus

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Abstract

Hysteroscopic visualization of buffalo uteri (n=20) was performed using a rigid endoscope. The genitals from estrus buffaloes (20.0%) revealed the presence of uterine wall folding and presence of mucus whereas; haemorrhages on the uterine wall could be visualized in 5% of the genitalia. It was concluded that hysteroscopic visualization of bubaline uterus can provide additional information on the internal uterine structures.

Keywords: Buffalo, hemorrhage, hysteroscopy, uterus.

Introduction

Approaches to visualize internal reproductive structures in buffaloes include ultrasonography (Karen *et al.*, 2007; Ferreira *et al.*, 2012), color Doppler (Hussein, 2013) and other in vivo imaging technologies (Purohit, 2008). However, these techniques do not directly visualize the reproductive organs like the lumen of uterus. In many species like mares (Berezowski, 2002), bitches (Moxon *et al.*, 2012), ewes (Bigolin *et al.*, 2007) and camelids (Poma and Diaz,

1980) hysteroscopy has gained popularity for direct visualization of the internal morphology of uterus and other organs thus increasing knowledge on the slightest pathophysiological changes. The major obstacle to the wide scale clinical use of hysteroscopy in cattle and buffalo is the structure of the cervical os, lack of skilled personnel and the high initial cost. In the present communication we report the hysteroscopic visualization of bubaline uterus.

Material and Methods

Bubaline genitalia (n=20) were collected from abattoir and placed in warm (37-39°C) Dulbecco's PBS containing 0.1% antibiotic-antimycotic for transportation to laboratory. In the laboratory, genitalia were rinsed with warm (32-37°C) 0.9% NaCl. Forward rigid oblique telescope 30°, diameter 5.5mm, length 54cm with fiber optic light transmission incorporated (Karl Storz) was used to visualize the bubaline genitalia. Genitalia were held from ventral side by inserting finger in the intercornual ligament pocket. The rigid endoscope

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was passed into uterine lumen through cervix. The uterine lumens of all twenty genitalia were examined. The pictures were saved in the AIDA compact system attached to the rigid endoscope.

Results

None of the genitalia examined were gravid. Corpora lutea were present on the ovaries attached to seven genitalia (35.0%) and indicated cyclicity in these buffaloes. Further hysteroscopic examination of the uteri revealed that there was no specific finding in the lumen and no mucus could be observed. The uterine folds were less prominent.

In four buffalo genitalia (20.0%) mature ovulatory follicles were observed. Presumably these genitalia were from animals in estrus. Endoscopic examination revealed distinct uterine folds and mucus (Fig. 1).

In 45.0% of the genitalia from buffaloes the ovaries evidenced the presence of small follicles, but no CL or mature follicles were evident. Endoscopic examination of these uteri revealed no specific findings but in I (5%) uterus hemorrhages over the musculature of the uterine wall were observed (Fig. 2 and Fig 3) without other specific change.

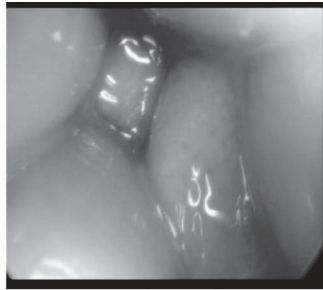


Fig 1: Hysteroscopic picture of an estrus buffalo uterus showing uterine wall folding and mucus

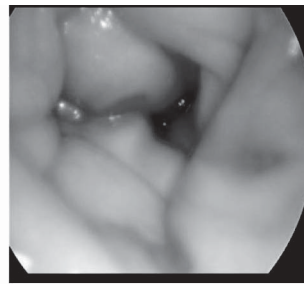


Fig 2: Hysteroscopic view of hemorrhages on the uterine wall of a buffalo.

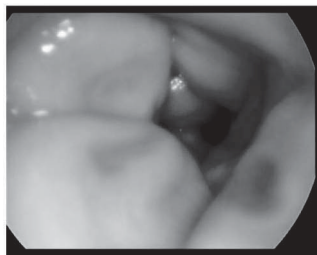


Fig 3: Hysteroscopic view of hemorrhages on the uterine wall of a buffalo (Different location).

Discussion

Endoscopy provides a technique for direct visualization of lumen of internal organs. Hysteroscopy has advantages over ultrasonography as it can visualize minor uterine pathologies like hemorrhages, small growths, ulcers etc., not easily traceable by ultrasonography. The visualization of post partum uterine infections has been done using

hysteroscopy in cattle (Mardoc *et al.*, 2007; Drillich *et al.*, 2010; Madoz *et al.*, 2010) but similar reports are unavailable for the buffalo. The endoscopic visualization of mucus and uterine folding during the present study is similar to that reported in cattle (Devine and Lindsay, 1984). However, the findings of haemorrhages during the present study are difficult to explain and need further studies. The rigid endoscope used in the present study is not commonly used in cows (Mardoc *et al.*, 2007; Drillich *et al.*, 2010; Madoz *et al.*, 2010) and instead a flexible endoscope is used for hysteroscopic examination. Studies on buffaloes using a flexible hysteroscope are suggested. It was concluded that hysteroscopic visualization of bubaline uterus can provide additional information on the internal uterine structures.

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