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Vaginal cytology in dog: Case report

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Abstract

A 2 year old female dog was presented with a clinical signs of discharge from the vagina at Veterinary Clinical Complex, Department of Veterinary Gynecology, IVS & AH, SOA, University. Vaginal cytology was collected with the help of sterile cotton swab to examine whether the animal is in heat and thin smear was prepared. The slide was fixed with methanol for 5 minutes and then stain by giemsa for 30 minutes and observed under a microscope. Based on the presence of anuclear and superficial cells it was indicated that the animal is in heat.

Keywords: Canine, vaginal cytology, microscopy, cornified cells

Introduction

Vaginal cytology is a quick, affordable and accurate way to assess estrus cycle in dogs. It is the most widely used diagnostic technique for gynecological examination in bitch (Wehrend *et al.*, 2013) [1]. Based on the cellular types, one can ascertain the bitch estrus cycle phase. There are different vaginal cells types *viz.* parabasal, intermediate, superficial and anuclear cells. Parabasal and intermediate cells are non-cornified cells whereas superficial and anuclear cells are cornified cells. Exfoliative vaginal cytology also helps us to project particular abnormal conditions during the peri-parturient and post-partum periods as well as to diagnose different reproductive stages (Roa *et al.*, 1979) [2].

Materials and Methods**Case history**

A 2 year old female dog was presented with a clinical sign of discharge from the vagina at Veterinary Clinical Complex, Department of Veterinary Gynecology, IVS & AH, SOA University.

Methods

A vaginal smear was obtained from cranial part of vagina using a clean cotton swab technique. Then, a smear was prepared in a glass slide and fix with methanol for 5 minutes. The fixed slide was stained with giemsa for 30 minutes. Washed the slide with distilled water and allowed it to dry. Observed under the microscope and evaluate vaginal smear at 100x and record the observation.

Results and Discussion

The dog was presented with a clinical signs of discharge from the vagina. Vaginal smear was taken to examine whether the animal is in heat. Microscopic examination of the sample revealed presence of majority of the cells with anuclear and superficial cells (Fig.1 & 2). Anuclear cells are large cornified cells without nucleus which undergoes degeneration to become dead anucleated cells. The findings are in accordance with Simmons and Olson, 1989 [3]. Superficial cells are the largest epithelial cells seen in vaginal smears. They are dead cells whose nuclei become pyknotic and then faded. The cytoplasm was abundant, angular and folded. Superficial cells attain their maximum at the time of estrogen peak. These findings are in accordance to those of Concannon and Digregorio, 1986 [4], Johnston *et al.*, 2001; Maneke, 2002 [5, 6].

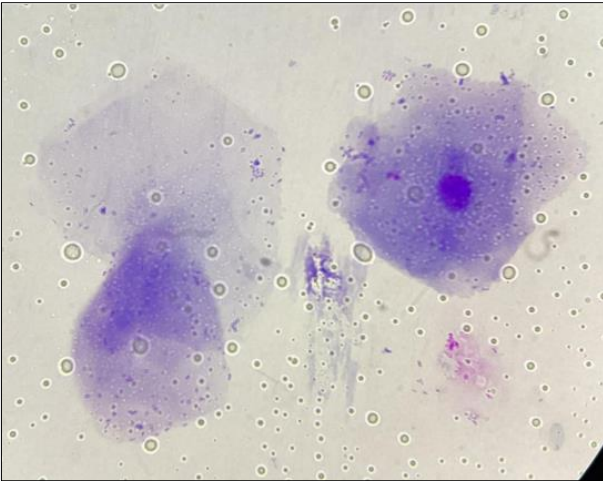


Fig 1: Anuclear cells & Superficial cells

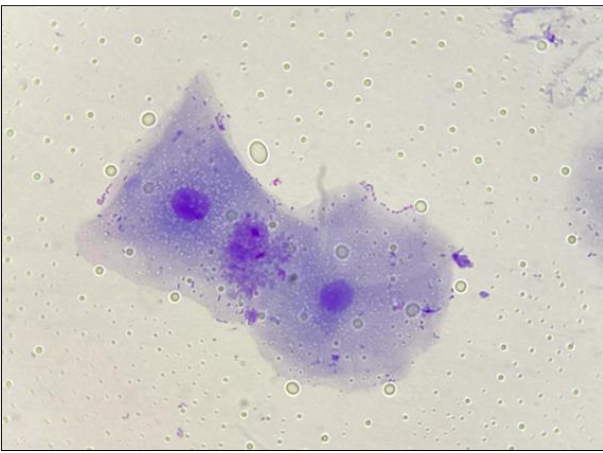


Fig 2: Superficial cells

Conclusion

Vaginal cytology is a simple, quick, affordable and accurate way to assess estrus cycle in dogs. Apart from estrus detection, it is also helpful for diagnosis of transmissible venereal tumor (TVT) in dogs. In the present study, based on the presence of anuclear and superficial cells it was indicated that the animal is in heat.

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