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Cytology of primary nasal transmissible venereal tumour in a non-descriptive dog

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Abstract

A 5 years old non-descriptive intact male dog was brought with dullness, reduced appetite and unilateral nasal bleeding to Veterinary Clinical Complex, VC&RI, Theni. On clinical examination, animal had left side unilateral bloody nasal discharge, sneezing, dyspnoea and an elevation of nasal plane. The nasal swab impression smear revealed ciliated columnar epithelium, inflammatory cells especially lymphocytes, neutrophils and numerous round cells. The round cells had prominent nucleoli, coarse nuclear chromatin and clear cytoplasmic vacuoles. Few mitotic figures too evident in the smear. Based on the cytological examination, the animal was diagnosed as primary intranasal transmissible venereal tumour. However, the external genitalia had no obvious alterations. Treatment with vincristine sulfate weekly resulted a rapid response with improvement of the respiratory condition and total remission of the mass.

Keywords: FNAC, primary intranasal TVT, round cells, nasal bleeding

1. Introduction

Canine transmissible venereal tumour (CTVT) is the most common round cell tumour noticed in the reproductive tract of dogs (Higgins, 1966) [2]. It mainly affects the genitalia but extragenital forms are recorded rarely. Metastasis from the genital tract to various organs including nasal cavity, skin, oral cavity and facial region were reported commonly than the primary intranasal form of transmissible venereal tumour (Ojeda *et al.*, 2018) [6]. In primary intranasal TVT, bleeding nose, serosanguineous nasal discharge, swelling of the face and regional lymphadenopathy were the clinical signs evident (Papazoglou *et al.*, 2001) [7]. CTVT was well diagnosed in the impression cytology (Ganguly *et al.*, 2013) [1]. Perusal of literature revealed primary occurrence of TVT from nose found rare when compared to the secondary metastasis. In the present report, primary nasal transmissible venereal tumour in a non-descriptive male dog is described.

2. Case history and observations

The dog was presented with owner's complaint of dullness, reduced appetite and unilateral nasal bleeding to Veterinary Clinical Complex, Veterinary College and Research Institute, Theni. On physical examination, the animal had unilateral bloody nasal discharge, sneezing, dyspnoea and an elevation of nasal plane.

3. Materials and Methods

The sterile cotton swab was inserted into the nasal cavity and the smear was prepared on a clean, glass slide by rolling the swab on the slide. The air-dried smear was stained with Giemsa stain. The stained smear was examined under a light microscope.

4. Results and Discussion

The cytological examination of stained smear revealed few ciliated columnar epithelium, inflammatory cells especially lymphocytes and neutrophils and presence of numerous round cells. The round cells had prominent nucleoli, coarse nuclear chromatin with clear cytoplasmic vacuoles. The impression smear also had few mitotic figures. Based on the cytology, the animal was diagnosed as primary nasal transmissible venereal tumour. The external genitalia had no alterations. Fine Needle Aspiration Cytology is the simple, minimally invasive and easy technique for the diagnosis of transmissible venereal tumour than other methods. (Sujata *et al.*, 2018) [10].

The cytological examination of the nasal wash or impression smear from the nostrils would have been the right sample for the diagnosis of various forms of TVT in dogs. These characteristic cytological features of TVT includes the round cells, coarse nuclear chromatin, prominent nucleoli and clear cytoplasmic vacuoles, the findings were in accordance with earlier workers (Thangapandiyan *et al.*, 2018., Mohanapriya *et al.*, 2019 and Murugan *et al.*, 2019) [11, 4, 5]. The emergence of primary intranasal transmissible venereal tumour other than the genital organs was also documented (Ojeda *et al.*, 2018 and Papazoglou *et al.* 2001) [6, 7]. Without the involvement of reproductive organs, the primary oral and intranasal form of transmissible venereal tumour was also reported (Rezaei *et al.* 2016) [8]. In the primary nasal form of transmissible venereal tumour, sinus fistula and fistula of the oral and nasal cavity were reported along with the mass (Selvaraj *et al.* 2023) [9]. The finding suggests that the primary intranasal transmissible venereal tumour has to be considered for the differential diagnosis of epistaxis and nasal plane deformities in dogs. Treatment with vincristine sulfate at weekly intervals in a month showed a rapid response with improvement of the respiratory condition in the present study and total remission of the mass was appreciable (Sujata *et al.*, 2018) [10]. As that of earlier workers, complete remission of the mass and reduction of respiratory illness was well documented with vincristine therapy in the present study.



Fig 1: Primary nasal transmissible venereal tumour in a dog with elevation of nasal plane

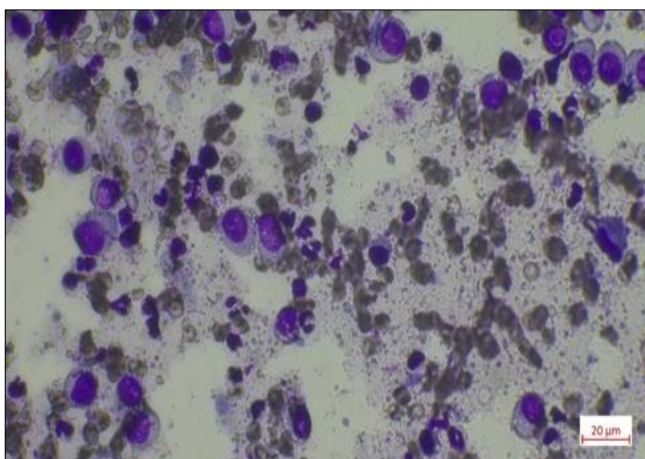


Fig 2: Cytology - round cells with cytoplasmic vacuoles, coarse nuclear chromatin and prominent nucleoli

5. Conclusion

A 5 years old intact male non-descriptive dog was brought with a primary complaint of unilateral nasal bleeding. The impression smear revealed ciliated columnar epithelium, inflammatory cells especially lymphocytes, neutrophils and round cells. The round cells with prominent nucleoli, coarse nuclear chromatin and clear cytoplasmic vacuoles. Based on the cytology, the animal was diagnosed as primary nasal transmissible venereal tumour. The dog was treated successfully and recovered uneventfully.

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