

Prevalence of Mast Cell Tumour in Dogs in Chennai

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Abstract

The present study was carried out to assess the prevalence of mast cell tumours in dogs presented at Madras Veterinary College Teaching Hospital, Chennai for five months (July 2024- November 2024). A total of 802 cytological smears prepared each from the nodule of different breeds of dogs were referred to the Centralised Clinical Laboratory, Madras Veterinary College, Chennai for cytological examination. The overall prevalence of mast cell tumour was found to be 2.86 %, of which, females showed a higher prevalence (56.52 %) compared to males (43.47%). Among various age groups affected, an increased prevalence was recorded in dogs belonging to more than six years of age (56.52%), followed by 0-3 years (26.08%) and 4-6 years (17.39%). Non-descript breeds showed the highest prevalence (52.17 %), followed by Labrador Retriever (34.78%), and Golden Retrievers, Boxer and Pug (4.34 % each).

Keywords: Chennai, Dog, Mast cell tumour, Prevalence,

Mast cell tumour (MCT) also known as mastocytoma, the most common haematopoietic neoplasm accounts for 16 to 21% of all cutaneous tumours encountered in dogs (Pierini *et al.*, 2019). The tumour composed of mast cells appears as small, demarcated, single or multiple growths that may infiltrate the adjacent tissues and metastases to the distant organs, namely lymph nodes, skin, spleen, liver, and lungs. MCTs can develop in any part of the body but mostly affect the torso, limbs, head, and neck. Research data about the epizootological studies on MCT in dogs are scanty. Hence the present work was undertaken to study the prevalence associated with MCT in dogs in Chennai.

A total of 802 cytological smears were prepared each from various breeds of dogs presented at Madras Veterinary College Teaching Hospital, Chennai were referred to the Centralised Clinical Laboratory, Madras Veterinary College, Chennai for cytological examination. The present study was conducted for five

months (July 2024- November 2024). The cytological smears were air dried and stained with Leishman and Giemsa cocktail stain for microscopic examination as described by Garbyal *et al.* (2006). The risk factors such as age, sex, and breed associated with MCT in dogs in Chennai were analyzed.

On microscopic examination of 802 smears, 23 samples showed cytological features suggestive of mast cell tumour (Fig. 1&2) with an overall prevalence of 2.86%.

MCT was observed in 13 females and 10 males, and thus females revealed a higher prevalence (56.52%) than males (43.47%). The highest prevalence was recorded in dogs aged more than 6 years (n=13;56.52%), followed by 0-3 years (n=6 ; 26.08%) and 4-6 years (n=4; 17.39%). MCT was observed in 12 non-descript breeds (52.17%), eight Labrador Retrievers and Golden Retrievers, Boxer and Pug (4.34 %). each.

The present study recorded an overall prevalence of 2.86 %. In contrast to the present findings, Smiech *et al.* (2018) reported a high prevalence of 17.8% of all

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skin tumours examined in dogs and 16 to 21% of all cutaneous tumours encountered in dogs (Pierini *et al.*, 2019). There is no association observed in the occurrence of MCT among the sexes in the present findings agreed with that of Shoop *et al.* (2015). The highest prevalence observed in dogs aged more than six years during the present study agrees with the observations of Śmiech *et al.* (2018) who also noticed an increased incidence in older dogs compared to the younger ones. Similar findings were also recorded by Pierini *et al.* (2019) who also observed the median age of MCT in dogs was 6.22 years. An increased prevalence of MCT in non-descript

breeds in this study was in accordance with that of Pierini *et al.* (2019). Śmiech *et al.* (2018) reported the highest prevalence in Labrador Retriever, Boxer, French Bulldog, American Staffordshire Terrier, and Shar-pei while the lowest incidence in Cocker Spaniel, German Shepherd, and Yorkshire Terrier. The Boxer and Bulldog related breeds including Bullmastiffs, Boston Terriers and Staffordshire Bull Terriers were found to be more susceptible to MCT (Mochizuki *et al.*, 2017) and the breed predisposition to develop MCT might be because these breeds of dogs belong to the same phylogenetic tree (Peters, 1969).

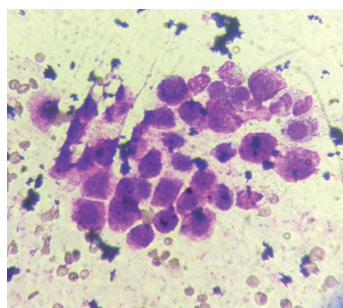


Fig. 1: Cytology- Dog –MCT L&G stain x100

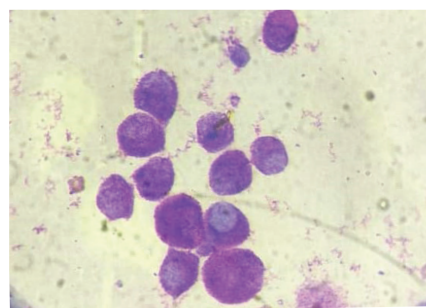


Fig. 2: Cytology- Dog –MCT L&G stain x40

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