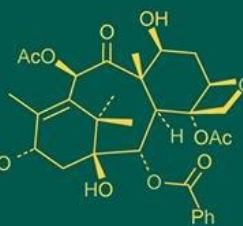


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Cytological and histopathological diagnosis of sebaceous gland adenoma in canines

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Abstract

The study was aimed to know the incidence, cytological and histopathological diagnosis of Sebaceous gland tumors occurring in dogs. This study was performed at Veterinary laboratory diagnostics, veterinary clinical complex, C.V.Sc, Rajendranagar, PVNRTVU. In a period of one year study, 200 tumor cases were diagnosed by performing FNAC & biopsy out of which 25 cases of sebaceous gland adenoma tumors were recorded (12.5%). Animals suspecting for Sebaceous gland adenoma had generalized growths all over body on hairy regions of skin, ranging from 1-2 cms in size, lobulated, elastic consistency and no pain was evinced. On cytology sebocytes showed various degrees of pleomorphism with clear cytoplasmic vacuoles. Microscopical examination of biopsy samples revealed neoplastic sebocytes that are arranged in lobules separated by fibro collagenous stroma and vacuolations in the cytoplasm.

Keywords: Skin tumors, sebaceous gland, histopathology, cytology, adenoma

Introduction

Cutaneous neoplasms are frequently recorded in dogs worldwide (Ashraf and Mohamed 2016) [2]. In dogs, sebaceous gland tumors represent the third most common type of skin tumors, accounting for 21.35% of all cutaneous epithelial tumors (Scott and Anderson 1990; Vail and Withrow 2007) [8, 9]. Collagen rich non neoplastic and neoplastic lesions are reported in canine skin. They include fibromas, nodular dermatofibrosis, collagenous hamartomas, fibroadnexal hamartoma, dermatofibromas and fibrosarcomas (Mikaelian and Gross 2002) [5]. Very few reports are available on cytology and histopathological lesions of sebaceous gland adenoma in canines and this constitutes the aim of this study.

Materials and Methods

Sebaceous gland tumors in dogs was studied based on total number of tumor cases diagnosed at Veterinary Clinical Complex, College of veterinary science, Rajendranagar, Hyderabad, Telangana, India for a period of one year that is from year 2022 to 2023. In a period of one year study, 200 tumor cases was diagnosed by performing FNAC & biopsy out of which 25 cases of sebaceous gland adenoma tumors were recorded (12.5%). Diagnosis was suggested based on FNAC technique and confirmatory diagnosis was done using biopsy in 10 animals. Fine needle aspiration cytology was performed using a 22- Gauge needle attached to 2 ml syringe under sedation with diazepam (0.25 mg/kg, IV, Diazem, Lori) and ketamine HCl (5 mg/kg, IV, Aneket) and cytology was performed Form the mass by holding the mass between the fingers and inserting at periphery of the mass, applying negative pressures with plunger of syringe at least 3-4 times at different angles of the tumor. Two smears were prepared for each tumor, after air-drying of smears they were stained with Giemsa stain (BN Kumarguru *et al.* 2021) [3]. All slides were examined under light microscope with 40x and 100x objectives. The biopsy samples were taken by incisional biopsy procedure and were fixed in 10%formalin and processed routinely for section cutting (3-4 micron) following paraffin embedding and were stained with hematoxylin and eosin. The stained slides were examined under high power and oil emulsion microscopy (Patel *et al.* 2019) [7].

Results and Discussion

Incidence of sebaceous gland adenoma was 12.5% in 200 tumor cases, and out of which old aged male dogs, are more affected with sebaceous gland tumors. Breed wise labradors and Pomeranian breed dogs showed more affinity towards sebaceous gland adenoma. Animals suspecting for Sebaceous gland adenoma had generalized growths all over body ranging from 1-2 cms in size, lobulated, elastic consistency and no pain was evinced (Fig 1). On cytological examination sebaceous cells showed various degrees of pleomorphism with clear cytoplasmic vacuoles (Fig. 2). Nucleus is large with few areas of mitosis in the nucleus. In this study mitotic figures are less in number and as cytological differentiation of sebaceous gland adenoma is difficult to differentiate so histopathology was performed with biopsy samples (Georgeta Dinescu *et al.* 2012) [4].

Microscopically dermis of skin showed proliferation of neoplastic epithelial cells exhibiting sebocytic differentiation. Neoplastic sebocytes were arranged in lobules (Fig. 3) separated by fibro collagenous stroma. The neoplastic sebocytes had vacuolated cytoplasm with visible cell boards (Fig. 4) observed in agreement with (Athip Lorsirigool *et al.*, 2020) [1]. Cellular pleomorphism, mitotic figures were not observed, inflammatory cells are not observed in and around lobules (M. ÖZGÜR *et al.* 2005) [6]



Fig 1: Animals suspecting for Sebaceous gland adenoma had generalized growths all over body.

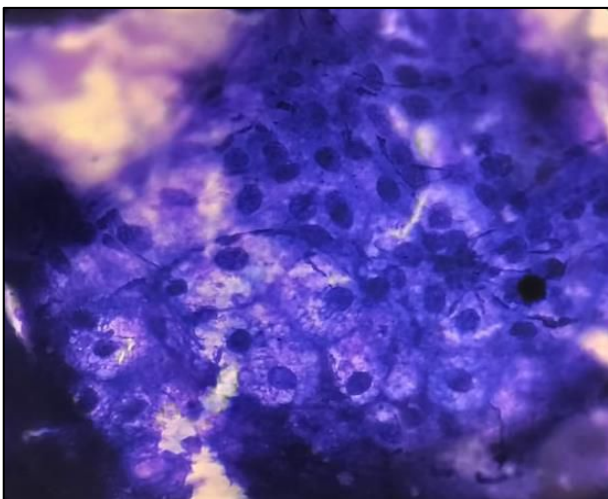


Fig 2: Sebaceous cells showed various degrees of pleomorphism with clear cytoplasmic vacuoles.

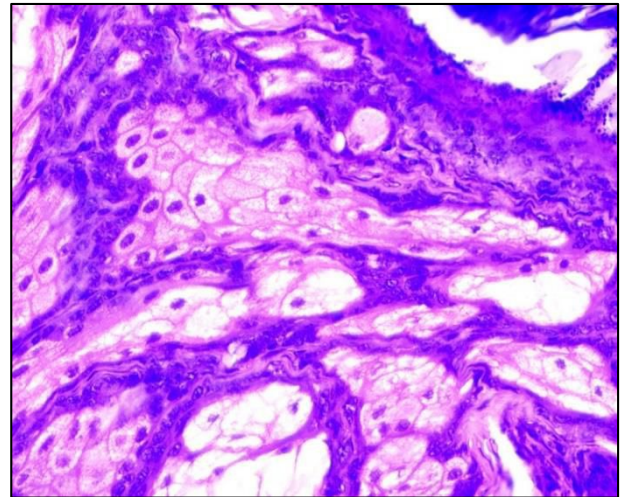


Fig 3: Sebocytes with Vacuolated Cytoplasm, 400x H& E

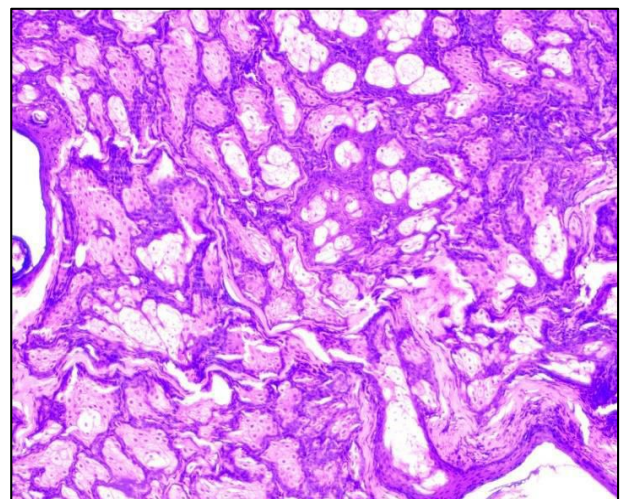


Fig 4: Sebocytes arranged lobules, separated by fibrocollagenous stroma. 100x H&E

Conclusion

Based on the cytology and histopathological findings tumors were confirmed as sebaceous gland adenomas. Following through examination of current study we infer that early diagnosis of sebaceous gland tumors at early age by performing FNAC and at possible areas diagnosis by biopsies can aid in therapeutic management to help in minimizing the risk of complications like metastasis of tumors to other organs.

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Conflict of Interest

Authors do not have any conflict of interest.

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