

SPONTANEOUS SKIN TUMORS IN DOGS AND CATS, SQUAMOUS CARCINOMA

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Abstract: Cutaneous cancers in pets have a constant development every year. In this investigation we purposed a study of canine skin tumors; detailing squamous carcinoma; and their correlations with breed; sex; age; and localization. In the same time was appreciated malignancy; based on microscopically images; especially nuclear aspect; cell homogeneity grade; the presence and grade of keratinisation; atypical mitosis; and cell polymorphism. In a period of 10 years had been diagnosed 597 animals with different tumor types; from these 202 being cutaneous neoformations; in carnivores were diagnosed 178 cases (88;3%) with cutaneous tumors. Squamous carcinoma had been diagnosed in 12 carnivores; respectively in dog 11 cases and 1 case in cat. The breeds diagnosed with squamous carcinomas were: Schnauzer (3 cases); stray dogs (2 cases); and one case for the following breeds: Rotweiler; Spaniel Cocker; German Brack; Doberman; and Fox Terrier. The localisation of squamous carcinoma was: legs – 4 cases; head region – 3 cases; and in cervical; scapula; dorsal and croup regions – 1 case for each region. Utilizing histological criteria for malignancy degree appreciation were established the following: squamous carcinoma with accentuated polymorph cells and increased number of mitosis (4 cases); squamous carcinomas with intense keratinisation (3 cases); squamous carcinomas with a reduced keratinisation (4 cases).

INTRODUCTION

The highest incidence of skin tumors is encountered in dogs; horses; cattle and cats; with an increased diversity of tumor types (1; 2). In specialty literature it is mentioned variable incidence of different cutaneous tumor types; such us: in cats; from 340 cutaneous tumor types; basal carcinoma represented 26%; with a mean age of 10;3 years; mast cell tumor represented 21%; with a mean age of 8;6 years; squamous carcinoma had been encountered in 15;5%; with a mean age of 11;6 years; fibrosarcoma had been encountered in 15% from cases; with a mean age of 10;2 years. Mast cell tumor was the only tumor diagnosed in animals smaller than 1 year (4).

Madewell and Theilen (5) find that from a total of 908 canine skin tumors; 330 (36;3%) had an epithelial origin; and 578 (63;7%) had mesenchymal origin. From epithelial tumors; the authors identified the following tumor types: squamous carcinoma 5;6%; papilloma 1;9%; basal cell tumors 3;1%; sebaceous gland adenoma 6;6%; sebaceous gland adenocarcinoma 0;3%; trichoepithelioma 1;7%; pilomatricoma 1;0%; sweat gland adenoma 0;1%; sweat gland adenocarcinoma 0;2%; nonspecific tumors of the annexes; adenomas 9;1%; adenocarcinomas 5;6%. Mesenchymal tumor types established from the same authors were: lipoma 34;4%; liposarcoma 0;1%; mast cell tumors 9;0%; melanoma and melanocytoma 4;7%; fibroma 2;2%; fibrosarcoma 1;7%; hemangioma 2;9%; hemangiosarcoma 0;8%; neurofibroma 0;4%; histiocytoma 2;9%; hemangiopericytoma 10;9%. Also; there were diagnosed tumors with a lower incidence of 1%: venereal tumors; lymphoma; leiomyoma; and myxoma.

Squamous carcinoma is a high malignancy degree tumor; frequent associated with solar dermatosis; and with old animals. The most affected breeds; which have an increased sensibility; are: Caniche; Dalmatian; Beagle and white English Bull Terrier. Generally; the white color determines an increased sensibility.

From a total of 202 ocular neoplasms; Jubb et al. (6) find 2% squamous carcinomas. An increased incidence of canine squamous carcinoma is encountered in lips; ears; and nose; mainly associated with non pigmentation of those regions. Squamous carcinoma encountered in ventral abdominal region had been diagnosed as an actinotumor.

Cutaneous cancers in pets have a constant development every year. In this investigation we purposed a study of canine skin tumors; detailing squamous carcinoma; and their correlations with breed; sex; age; and localization. In the same time was appreciated malignancy; based on microscopically images; especially nuclear aspect; cell homogeneity grade; the presence and grade of keratinisation; atipic mitosis; and cell polymorphism.

MATERIAL AND METHODS

The study had been realized on 10 years period of time; being studied the samples obtained from the necropsy or surgical biopsies. The samples were fixed in neutral buffered 10% formalin; processed by paraffin technique; than sectioned to 3-4 μ m and stained by haematoxilin-eosin and trichrom Masson methods.

From a total of 523 tumors diagnosed in dogs and cats; 178 had a cutaneous localization. From those 12 were squamous carcinomas.

The study noticed the following aspects: breed; age; sex; skin color; region of the skin affected by squamous cancer; and presence of the metastases. Each sample had been examined microscopically; being appreciated histological malignancy parameters.

RESULTS AND DISCUSSIONS

In our study; realized on 10 years period of time; were diagnosed 597 cases with tumors in different animal species; from these 202 were cutaneous neoplasms; representing 33;8%. From 202 cutaneous neoplasms; 178 had been encountered in carnivores (dogs and cats).

Presentation of the results:

- in carnivores were diagnosed 178 (21%) cutaneous tumors from 597 neoplasms encountered in different animal species and in different locations;
- the total number of cutaneous tumors diagnosed in different species was 202; from those 178 being cutaneous neoformations encountered in carnivores; representing 88%;
- in dog had been encountered 11 squamous carcinomas; and just one in cats;
- incidence of squamous carcinomas regarding the sex: in females 6 cases; respectively 62%; and 3 cases in males; representing 38%;
- the age with the highest incidence was between 4 and 6 years; encountered in 6 cases; representing 67%;
- in Schnauzer breed was diagnosed 3 squamous carcinomas; and in stray dogs were diagnosed 2 cases;
- localization of squamous carcinomas was in the following regions: legs – 4 cases; head region – 3 cases; and in cervical; scapula; dorsal and croup regions – 1 case for each region;

Histopathology exam established diagnose and malignancy degree; considering some parameters; such us: cell polymorph aspect; keratinisation degree; mitotic index; and other criteria. The microscopically aspects had been characterized depending by two categories:

- carcinomas with several and large keratotic pearls; obvious cell differentiation and low or mean mitotic index; these aspects characterize tumors with a reduced or mean malignancy degree.

- carcinomas represented by non differentiated cells; large; atypical and multinucleated cells; with an increased mitotic index; aspects that characterize a high malignancy tumors.

Our dates; although obtained on a reduced number of cases; are similar with the results obtained by other authors. Squamous carcinoma has an incidence of 5% from skin tumors (5); with a frequent localization in legs (1; 2). The malignancy characteristics of squamous carcinoma had been the base of a malignancy scale; which had been made by appreciation of keratinisation degree; morphological aspects of the tumor cells; and mitosis (3). These criteria were utilized by us to establish the malignancy degree. Laboratory studies regarding the reaction of bearing organism to carcinomas had been effectuated by Jun and Johnson (7); which noticed that ships with squamous carcinomas have a significant reduced blastogenic response of peripheral lymphocytes; to fitomitogens and squamous carcinoma extracts; once with a developed mature tumor. These findings denote that the organism react in case of presence by squamous carcinomas.

CONCLUSIONS

- In a period of 10 years had been diagnosed 597 animals with different tumor types; from these 202 being cutaneous neoformations; in carnivores were diagnosed 178 cases (88;3%) with cutaneous tumors.
- Squamous carcinoma had been diagnosed in 12 carnivores; respectively in dog 11 cases and 1 case in cat.
- The breeds diagnosed with squamous carcinomas were: Schnauzer (3 cases); stray dogs (2 cases); and one case for the folowing breeds: Rotweiler; Spaniel Cocker; German Brack; Doberman; and Fox Terrier.
- The localisation of squamous carcinoma was: legs – 4 cases; head region – 3 cases; and in cervical; scapula; dorsal and croup regions – 1 case for each region.
- Utilizing histological criteria for malignancy degree appreciation were established the following: squamous carcinoma with accentuated polymorph cells and increased number of mitosis (4 cases); squamous carcinomas with intense keratinisation (3 cases); squamous carcinomas with a reduced keratinisation (4 cases).

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