Statistical Reflections Regarding the Significance of the Microscopic Examination in the Diagnosis of Mammary and Abdominal Neoplasias in Cats

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Abstract

76 cats were clinical examined for mammary and abdominal neoplasias. In 41 cats were performed microscopic examination. Regarding the location of the primary tumors 70 cats had mammary tumors. Isolated, six cases of primary non-mammary tumors were diagnosed following necropsy and histopathology. Following cytopathological and histopathological examinations, 14 tumor types were identified, of which 3 benign and 11 malignant. Benign tumoral types consisted of lipoma, vesical leiomyoma and mammary adenoma. Diagnosed malignant cases consisted of simple mammary adenocarcinoma, solid adenocarcinoma, compact adenocarcinoma, hepatic cholangiocarcinoma, compact carcinoma, mixed pulmonary bronchioloalveolar carcinoma, hemangiosarcoma, mammary comedocarcinoma, solid carcinoma and mixed adenocarcinoma.

Keywords: cat, examination, mammary, microscopic, neoplasias

Introduction

The importance of the neoplastic disease, brought forth by the clinical and anatomical diversity, comes from the connection between human and veterinary oncology, under the coordination of the comparative aspects. This fact created the possibility of studying and understanding the relationship between veterinary and human cancer (Hanahan and Weinberg, 2011; Hayes and Mooney, 1985; Madewell and Theile, 1987; Weijer *et al.*, 1972).

To understand cancer, we must realize that it is not a simple or a freestanding disease, rather the term "cancer" is an umbrella term that describes a large number of pathological processes whose only common feature is uncontrolled cell growth and proliferation (Argyle and Khanna, 2007; Fidler, 2003; Hanahan and Weinberg, 2011; Mendoza and Khanna, 2009). The prevalence of cancer in pets is growing steadily, for a variety of reasons, some still

being studied, and it is one of the major morbidity and mortality causes in cats and dogs (Barbara, 2008; Biller *et al.*, 2016; Dobson and Lascelles, 2011; Misdorp *et al.*, 1991). Pets with spontaneous cancer development provide an excellent opportunity to investigate many aspects regarding the disease etiology and treatment (Baba, 2002; Balint, 2010; Kusewitt and Rush, 2007).

Materials and Methods

76 cats were clinical examined for mammary and abdominal neoplasias. In 41 cats were performed microscopic examination (53,95% from total) (Figure 1) (Gavrilaș, 2016).

The certainty diagnosis of the tumoral processes in the studied cases was performed on the basis of the necropsy examination, followed by the microscopic histopathological and electron microscopic examination (Figure 2) (Gavrilaș, 2016).

Figure 1. Distribution of feline patients according to performed microscopic exams, expressed as absolute value (n.a – not available, EM – electronmicroscopy).

Figure 2. Case distribution according to necropsy exam, expressed as relative value (%) (x – cased with necropsies, n.a. – deceased without necropsy, 0 – viable cases).

Results and discussions

Regarding the location of the primary tumors 70 cats had mammary tumors (92,11% from total). Isolated, six cases of primary non-mammary

tumors were diagnosed following necropsy and histopathology (Figure 3) (Gavrilaș, 2016).

Following cytopathological and histopathological examinations, 14 tumor types were identified,

of which 3 benign and 11 malignant (Figure 4) (Gavrilaş, 2016).

Acknowledging the importance of pets and the increasingly close human – animal bonds, it is to be appreciated the fact that the care of the veterinarian towards his patient and his ability to diagnose and heal are equally important, these

qualities being equally valued by the pet owners (Weijer *et al.*, 1972).

Benign tumoral types consisted of lipoma, vesical leiomyoma (Figure 5), and mammary adenoma. Diagnosed malignant cases consisted of simple mammary adenocarcinoma (Figure 6), solid adenocarcinoma, compact adenocarcinoma, hepatic cholangiocarcinoma, compact carcinoma,

Figure 3. Case distribution according to the location of primary tumors, expressed as relative value (%).

Figure 4. Distribution of tumor types, expressed as absolute value.

Figure 5. Histopathological exam (500 μ m), HE stain. Urinary bladder. Benign neoformation characterized by spindle-shaped cells of smooth appearance. Vesical leiomyoma. FMV Cluj-Napoca.

Figure 6. Histopathological exam (500 μ m), HEM stain. Mammary gland. Tumoral edges are constituted by active tumor cells in the tumoral proliferation process and infiltrating the dermis and hypodermis. Mammary adenocarcinoma. FMV Iași.

mixed pulmonar bronchioloalveolar carcinoma (Figure 7), hemangiosarcoma, mammary comedocarcinoma, solid carcinoma and mixed adenocarcinoma (Gavrilaș, 2016; Owens, 1980).

The diagnosis of suspicious tumoral masses is set on clinical modifications found in organs (Rutteman, 2001; Vicario, 2010; Withrow *et al.*, 2013). Necropsic examination can provide important additional data on tumoral

processes, but it should always be followed by a histopathological exam for certainty (Cowell *et al.*, 2006; Meuten, 2002; Withrow *et al.*, 2013).

Conclusions

Benign tumoral types consisted of lipoma, vesical leiomyoma, and mammary adenoma. Diagnosed malignant cases consisted of simple mammary adenocarcinoma, solid adenocarcinoma,

Figure 7. Histopathological exam (100 μm), HE stain. Lung. Mixed bronchioloalveolar carcinoma. FMV Iași.

compact adenocarcinoma, hepatic cholangiocarcinoma, compact carcinoma, mixed pulmonary bronchioloalveolar carcinoma, hemangiosarcoma, mammary comedocarcinoma, solid carcinoma and mixed adenocarcinoma.

Necropsic examination can provide important additional data on tumoral processes, but it should always be followed by a histopathological exam for certainty.

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