Oral presentations

RESULTS

Differential expression of the C-X-C Motif Chemokine Ligand 12 (*CXCL12*) between the M and NM OMMs suggests that canine OMM metastasis is mediated by interaction between *CXCL12* and *CXCR4*. Increased expression of Apolipoprotein B mRNA Editing Enzyme Catalytic Subunit 3A (*APOBEC3A*) in the M OMMs may be indicative of *APOBEC3A*-induced double-strand DNA breaks and pro-metastatic *APOBEC3A*-mediated hypermutation. DNA double strand breakage triggers activation of the DNA damage response network and two members of the Falconi anaemia DNA repair pathway show elevated expression in the M OMMs.

RT-qPCR analysis validated the greater than two-fold differences in expression between M and NM OMMs observed for 3 genes (*APOBEC3A*, *CXCL12* and *RPL29*). A Linear Discriminant Analysis classifier featuring the 3 genes was estimated to categorise M OMMs as metastasising with an accuracy of 94% and NM OMMs as non-metastasising with an accuracy of 86%.

STATEMENT (CONCLUSIONS)

Metastasis-associated differences in gene expression may highlight genes that constitute targets for anti-metastasis treatments, and that may be effective as predictive biomarkers of OMM metastasis.

Strontium 90 plesiotherapy in the treatment of eyelid squamous cell carcinoma in cats

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OBJECTIVES

Squamous cell carcinoma (SCC) is the most common tumour in cats' eyelid. Aggressive surgery is the treatment of choice, but in some cases a more conservative approach could be considered. Strontium 90 plesiotherapy (Sr90) is a form of radiotherapy targeting superficial tumours. The aim of this study was to describe response, outcome and tolerance of eyelid SCCs treated with Sr90.

METHODS

The clinical database was searched for cats diagnosed with SCC located on an eyelid and treated with Sr90. The response to the treatment was evaluated every 4–6 weeks initially and then every 3 months. Descriptive statistics were applied on data collected.

RESULTS

Eight cats were treated with Sr90 between 2014 and 2017, six as a primary and two as adjuvant treatment. Four cats received a single dose between 100–120 Gy and four cats five fractions in 10 days to a total dose of 140 Gy. Five of six cats treated with primary Sr90 achieved complete response (CR) and one partial response (PR) for an overall response rate of 100%. The five cats achieving CR were free of disease after a median of 17 months, while the cat with PR did not present evidence of progression at 18 months. One cat treated with adjuvant Sr90 was free of disease at 17 months, while the other one died in clinical remission 9 months post-treatment. Acute and late side effects were minimal.

STATEMENT (CONCLUSIONS)

Sr90 provided good local control in this small cohort of cats and was well tolerated.

Correlation between BRAF variant V595E and histological grade in canine transitional cell carcinoma

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OBJECTIVES

Mochizuki et al. (PLoS ONE 2015a, 10(6):e0129534; PLoS ONE 2015b, 10(12):e0144170) found BRAF mutation (Variant c.1784T > A) in 67–75% canine transitional cell carcinomas (TCCs). Maeda et al. detected BRAF mutation in 54.5% of TCC cases (BMC Cancer 2018). In our recent publication the mutation was found in 22 out of 31 (71%) canine TCC cases (Tierärztl. Prax. 5/2018). The objective of the present study was to investigate the correlation of BRAF variant V595E and histological grading of TCC.

METHODS

Biopsies from 92 dogs with TCC were routinely processed for histopathology and graded into low grade or high grade, according to Meuten & Meuten (2017). DNA-isolation from paraffin embedded material was performed with the use of commercially available sets. Exon 15 was examined for the presence of the BRAF variant c.1784T > A by TaqMan® SNP Assay.

RESULTS

64/92 TCCs were classified as high grade and 28/92 as low grade. BRAF mutation was found in 33/64 (51.5%)

of the high grade and in 12/28 (42.8%) of low grade TCCs.

STATEMENT (CONCLUSIONS)

BRAF variant analysis is a new, highly specific diagnostic test for TCC. However, it is important to note that only identification of the mutation is diagnostic. It must be taken into consideration that histologically low grade TCCs showed the mutation in only about 40% of the cases. Further studies of clinical outcome are ongoing to evaluate the prognostic relevance of this finding. Additional factors, such as breed and anatomical site of the neoplasm may also influence the prevalence of BRAF mutation.

Ki67 index in canine dermal mast cell tumours: do we only identify proliferating mast cells?

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OBJECTIVES

Ki67 index is considered to be a prognostic marker for canine mast cell tumours (MCTs). High Ki67 index is associated with shorter survival times, however long-term outcomes can also be observed. Ki67 index is determined by counting the number of Ki67 positive cells but this method does not discriminate proliferating mast cells from other proliferating cells. Our objective was to

assess the "true" number of Ki67 positive mast cells in canine MCTs.

METHODS

Patnaik grade-II MCTs were stained with a double KIT/Ki67 immunohistochemistry (IHC) technique. Mast cells were defined as "KIT positive (+)" and stromal cells were defined as "KIT negative (-)" cells. Proliferating cells were Ki67+ and non-proliferating cells were Ki67-. The proportion of Ki67+/KIT+, Ki67+/KIT-, Ki67-/KIT+, Ki67-/KIT- was evaluated.

RESULTS

Twenty-one MCTs were assessed. The median percentage of mast cells per MCT was 56.3% (9.7–87.6%). Ki67 index was correlated with both proliferating mast cells and proliferating stromal cells. There was no correlation between the number of proliferating mast cells and the number of proliferating stromal cells. In seven MCTs (33%), proliferating stromal cells outnumbered proliferating mast cells. Among the eight MCTs with high Ki67, two had more proliferating stromal cells than proliferating mast cells and the percentage of proliferating mast cells was low.

STATEMENT (CONCLUSIONS)

Ki67 index can overestimate the number of proliferating mast cells and double KIT/Ki67 IHC allows to determine the "true" number of proliferating mast cells. This method might provide better prognostic information and should be prospectively evaluated in canine MCT.