VETCT
CONSULTANTS IN TELEMEDICINE

TELEMEDICINE REPORT: Oncology

Report number: TELE-XXX Report date: XXXX

Referring Veterinarian: XXXX

Referring Practice: XXXX

Email address: XXXX

Owner: XXXX Patient: XXXX

Species: Feline Breed: Exotic Shorthair Sex: Female Neutered Age: 15 years, 6 months

Associated cases: VETCT-XXXX

Clinical History:

A 14.5 year-old neutered female presented for left 3rd mammary gland tumour. Incisional biopsy reported revealed high-grade mammary gland carcinoma. Chest radiography revealed multiple structural interstitial pattern without clear mass margin. Abdominal u/s revealed 3 x liver hyperechoic solitary masses. All liver masses are in right lateral liver lobe size: 0.6x0.5cm, 0.2x0.3cm, 0.3x0.3cm. CBC, Biochem: WNL. No cat flu or sign of pneumonia. CT aims for carcinoma metastatic check. Thoracic CT images interpreted by Dr. Julien Labruyère were consistent with numerous nodules situated in multiple lung lobes with an accompanying tracheobronchial lymphadenopathy.

Date: 13/07/2015

Diagnostic interpretation:

Given the incisional biopsy report in conjunction with Marker's signalment alongside her abdominal and thoracic imaging reports it is highly probable that she has stage IV (distant metastatic) mammary carcinoma. The pattern of disease would be considered classic for metastasis of this type of tumour with pulmonary nodules as well as pleural lesions representing the most common intra-thoracic pattern, hepatic metastases has also been reported. Whilst metastatic disease is, as already mentioned exceptionally likely in this case, definitive diagnosis would rely upon tissue sampling. The hepatic lesions are described as being relatively small therefore ultrasound guided aspiration may be challenging, however, depending on the confidence of the sonographer could be attempted. The lesion observed in the left caudal lung lobe is slightly larger and

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given its location may also be amenable to ultrasound guided fine needle aspiration (FNA) for cytological interpretation. Cytologic assessment has a relatively high likelihood of yielding confirmation of metastatic disease if indeed this is present, standard mild risk of iatrogenic pneumothorax and haemorrhage (running coag times prior to FNA could be considered) following aspiration applies. Another approach to confirm metastasis would be palpation of the regional draining lymph nodes (I would assess both axillary and inguinal nodes bilaterally as normal lymphatic drainage is frequently perturbed when the mammary glands contain neoplastic tissue) and if the nodes are palpable FNAs should be submitted for cytology. If further tissue sampling is not pursued then a presumptive diagnosis of metastatic mammary carcinoma is entirely reasonable.

Conclusions:

In the case of locally confined feline mammary carcinoma (i.e. gross tumour is contained within the mammary tissue and local draining lymph nodes) aggressive surgery, being either unilateral or bilateral chain mastectomy with local draining node resection is considered to be "gold standard" therapeutically. In Marker's case I would be reluctant to recommend radical surgery as given the likely extent of the disease surgery will not achieve removal of gross neoplastic tissue and therefore its efficacy will be hindered. Debulking surgery could be considered if the disease within the mammary gland appears to be causing Marker pain or discomfort, for example if the affected gland is ulcerated. If surgery were to be performed I would ensure that Marker's owner(s) is aware that this is a purely palliative procedure. As Marker appears to be suffering from systemic neoplastic disease then systemic therapy is indicated if Marker's owner wishes to pursue further treatment. Sadly, high-grade metastatic feline mammary carcinoma does not carry a favourable prognosis, however multiple treatment regimens have been described with variable levels of success reported.

Additional comments:

Doxorubicin based protocols have historically been accredited with the highest probability of disease response in cats suffering from non-resectable mammary carcinoma. Decreases in tumour volumes in 50% of patients when doxorubicin is combined with cyclophosphamide (doxorubicin is given at 20-30 mg/m^2 diluted in 0.9% sodium chloride, by slow intravenous infusion every 3 weeks and cyclophosphamide is given by mouth at either 100 mg/m^2 for 3 concurrent days every 3 weeks or at 50 mg/m^2 for 4 concurrent days every 3 weeks) have been reported. Frequent monitoring of haematologic parameters for myelosuppression and biochemical parameters for renal disease is indicated (doxorubicin is nephrotoxic in cats, I would also perform a basic urinalysis prior to embarking on treatment with dox). Both these drugs are cytotoxic therefore the appropriate health and safety guidelines must be adhered to when clinical staff and Marker's owners are either handling such agents or when exposed indirectly to these drugs within Marker's body fluids as they are eliminated for the body to different extents via multiple mechanisms and body systems. Whilst tumour responses are seen in approximately half of the cats treated with these protocols durable responses are unfortunately not anticipated, median survival times tend to be reported in the range of 3-6 months. Doxorubicin may also be used as a sole agent for cats such as Marker and more recently intravenous mitoxantrone has also been reported as a systemic therapy, the latter drug however was used as an adjuvant to surgical therapy and was not used alone for gross non-surgical disease. Other options that could provide theoretic palliation against advanced feline mammary carcinoma could include NSAIDs such as oral meloxicam at a standard dose, low dose "metronomic" cyclophosphamide and tyrosine kinase inhibitors, such treatments have not been extensively trialled for feline mammary carcinoma and as such it is hard to definitively recommend these options, however they do have the potential advantage of being easier to administer and could be considered less aggressive forms of treatment. Nonetheless various recommendations exist for

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monitoring cats that are undergoing treatment with these drugs to help avoid and/or manage any potential associated adverse events. If further treatment is pursued and you would like more information regarding these treatment protocols please do not hesitate to contact me. The primary goal of treatment of patients with advanced disease, as is the case for Marker, is to maintain a good quality of life. Systemic therapy can achieve this and may also extend life expectancy, however there is always a (usually small) risk of side effects and as such owners need to be aware of the goals and expected outcomes as well as realising that it is also acceptable to decide against pursuing such treatments.

Reporting Oncologist:

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