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To cite this article use either
DOI: 10.1111/vnj.12063 or Veterinary Nursing Journal Vol 28 pp284–287

Feline nasal lymphoma

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ABSTRACT: This article visits the subject of nasal lymphoma in cats, its incidence, presenting signs, treatment options and nursing care. Lymphosarcoma, or lymphoma, is a systemic, round cell cancer, which arises from lymphoid tissues. Whilst multicentric lymphoma is more commonly diagnosed in dogs, it is more usual for cats to present with a specific anatomical site affected. Lymphoma is the most commonly diagnosed cancer in the nasal cavity, although nasal lymphoma is a relatively uncommon tumour. Nasal lymphoma is termed an extranodal lymphoma, commonly affecting older cats, and representing 5 - 10% of anatomic-specific lymphoma cases. Presenting signs are a consequence of the anatomical location of the tumour and its local effects. Diagnostics for nasal lymphoma follow a stepwise approach to initially establish a general health profile of the individual patient, as well as more specific modalities, including advanced imaging. A variety of treatment options may be employed and will depend on the grade and stage of the tumour, as well as any patient-specific factors. Nursing care of these patients may involve assistance with diagnostics, administration of prescribed treatments, comfort management, nutritional planning and/or assisted feeding and providing owner advice/support.

Lymphosarcoma, or lymphoma, is a round cell tumour which arises from lymphoid tissues. It is a commonly diagnosed haemopoietic tumour, arising in the bone marrow, thymus, lymph nodes & spleen, but may occur in any lymphoid cells. Lymphoma is a systemic disease which, depending on the tissue/body system affected, may be quickly progressive and fatal without treatment.

Signs may have a rapid onset which, depending on which anatomic site is involved, may be localised or generalised. Associated paraneoplastic syndromes may also account for presenting signs. Lymphoma may affect any breed type at any age, but middle-aged to older individuals are the most commonly affected.

Whilst multicentric lymphoma is more commonly diagnosed in dogs – and although cats may suffer from the multicentric form – it is more usual for them to present with a specific anatomic site affected. Gastrointestinal lymphoma is the most commonly diagnosed form of lymphoma in cats, but any body system may be affected – renal, CNS, mediastinal, extranodal and nasal.

The aetiology of lymphoma is unknown, but retroviruses FeLV and FIV are known risk factors in the cat.

Nasal lymphoma

Lymphoma is the most commonly diagnosed cancer in the nasal cavity, although nasal lymphoma is a relatively uncommon tumour (< 1% of all feline neoplasms).1 Nasal, paranasal and nasopharyngeal forms have been described.

Nasal lymphoma is termed an extranodal form of lymphoma, commonly affecting older cats (average 10-12 years old), and representing five to 10 per cent of anatomic-specific lymphoma cases; but any age group may be affected. FeLV & FIV are not often concurrently diagnosed.

Presenting signs are the consequence of the anatomical location of the tumour and its local effects. Early signs include anorexia +/- weight loss, nasal and ocular discharge (usually unilateral), sneezing and epiphora (**Figure 1**). Other signs may include stertor, dyspnoea, epistaxis, buphthalmos and facial deformity.

A methodical and thorough clinical work-up is necessary to arrive at a diagnosis, enable advice to be given to owners on prognosis, and plan for appropriate treatment of each individual. Feline nasal lymphoma is generally considered to have a good prognosis when treated appropriately.

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Figure 1. Signs of nasal lymphoma can include nasal +/- ocular discharge. (Image courtesy of Dr Chiara Penzo.)

Treatment may take the form of chemotherapy +/- radiotherapy, used with curative or palliative intent, alongside symptomatic treatments as required in order to ensure comfort and good quality of life.

Differential diagnoses for the common clinical signs include infectious or inflammatory causes, foreign body, polyp, stenosis, trauma, different forms of neoplasia (e.g. carcinoma), or other systemic illness.

Diagnosis

When working up cases, the patient should be considered as a whole, with diagnostics including a full blood profile and urinalysis in the first instance. Whilst not diagnostic for nasal lymphoma, haematology and biochemistry performed on these patients may show mild-moderate anaemia, neutrophilia, thrombocytopenia and/or hyperproteinaemia.

Other unrelated changes – those consistent with life stage such as renal or hepatic insufficiency or thyroid dysfunction – may also become evident, and will impact on management of the patient. For example, if a patient is found to have concurrent renal disease, whilst that has limited influence in the tumour status, it would affect decisions on whether/how to administer general anaesthesia, or on the nursing care and feeding plan.

Imaging, whilst unable to provide a histological diagnosis, is important. Good quality skull radiographs or computed tomography (CT) images provide information on the extent of disease, bony/turbinate involvement and/or destruction, and may help differentiate between rhinitis, foreign body and neoplasia (**Figure 2**).

Magnetic resonance imaging or contrast CT are useful for examining soft tissues. Imaging should be performed in advance of tissue collection to prevent morphological distortion.

Diagnosis of nasal lymphoma may be suspected on cytology, but a biopsy sample is necessary to confirm diagnosis. Biopsy collection for histology is usually performed via rhinoscopy. Forced retrograde flushing of the affected nasal cavity may also provide useable tissue samples.

Histopathology allows naming and grading of the tumour and may provide morphologic information, facilitating more accurate prognosis. Nasal lymphoma may take various histological forms and immunohistochemistries may be performed.

Although nasal lymphoma often behaves – and is routinely treated – as a local disease, systemic involvement is occasionally seen. So when any diagnosis of lymphoma has been reached, determining the extent of local lymph node and organ involvement is standard before commencing treatment – this is known as 'staging'.

Staging for nasal lymphoma includes sampling of any palpably abnormal lymph nodes, survey thoracic radiographs (a minimum of two orthogonal views), abdominal ultrasound, including sampling of any morphologically abnormal tissue. Staging assists with the decision-making process and may help identify unrelated or concurrent problems and can have an influence on prognosis or treatment planning.

Prognosis

Prognosis is generally good, but depends on the tumour grade and stage, chosen course of treatment and various patient-specific factors, such as response to treatment and concurrent illness. Texts quote median survival time as 1.5 years, with some recent studies reporting survivals varying between four to 40 months.[1]

Cats with nasal lymphoma and concurrent FeLV or FIV carry a poor prognosis.

Treatment

In general, nasal tumours respond well to local radiotherapy. Treatment protocols for nasal lymphoma use megavoltage radiation therapy, at an average total dose rate of 25-45 Gy, given over multiple fractionated treatments. Each treatment requires a general anaesthetic. Radiotherapy induces complete remission in most cases, but will not control systemic disease.

Successful treatment of nasal lymphoma often uses a combination of radiotherapy and single- or multi-agent chemotherapy. Haney et al., (2009) concluded that all options were likely to result in a good outcome and that there were no significant differences in survival times among cats treated with radiotherapy or chemotherapy alone, or a combination of the two.[2]

Lymphoma is a highly chemo-sensitive tumour type. Therefore, cytotoxic drug

Figure 2. Radiographs can provide information on extent of disease, bony involvement and may differentiate between rhinitis, foreign body and neoplasia. (Image courtesy of Dr. Chiara Penzo.)

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therapy is often part of the treatment plan – especially if radiotherapy is not practical or accessible. Chemotherapy can induce a rapid response/remission and improve patient quality of life.

There is no agreed standard of care and various protocols are described, including a 26-week LCHOP protocol (which utilises rotating doses of L-asparaginase, vincristine, cyclophosphamide, doxorubicin & prednisolone); so-called maintenance protocols, such as COP (vincristine, cyclophosphamide and prednisolone) protocols; single agent chemotherapy, lomustine (CCNU), for example; or prednisolone alone.

Studies show little difference in survival between protocols – whether relatively short but intensive chemotherapy protocols (LCHOP) are used, as opposed to longer-term (COP), or single-agent (lomustine).[3]

Whichever pathway is chosen, the patient's individual needs should be taken into account and owners carefully counselled in advance of commencement of therapy regarding what to expect, how their pet is likely to respond, potential side effects, cost, time commitment, health and safety issues, home nursing and chances of remission/survival.

Regardless of which modality is employed, treatment plans should include appropriate analgesia, attention to nutrition +/- other palliative care measures to ensure optimal comfort and quality of life for individual patients.

Nursing considerations

Patient handling

It goes without saying that we have a responsibility to treat all patients in our care in a respectful way which does not cause fear or involve force or coercion. This is particularly relevant when handling cats which have any kind respiratory compromise.

These patients are often anxious and are teetering on the edge of collapse owing to the effort of coping with the stressful environment of the hospital, on top of their clinical condition; so great care is needed.

Ensure slow, gentle handling in a quiet environment, allow the patient to have control over how things progress, and take breaks. There is much to say on the subject of patient handling and it is covered in depth elsewhere in this issue.

Chemotherapy administration and safety

A full discussion of chemotherapy safety is beyond the scope of this article, therefore only a brief overview will be given.

A number of studies have shown multiple potential dangers to staff handling cytotoxic drugs – including increased chromosomal alterations, hepatotoxicity and abnormal reproductive outcomes associated with exposure to various chemotherapeutic drugs.[4, 5] For these reasons, it is important that written safety protocols be established and followed by all staff, as well as pet owners.

Chemotherapy should only be administered by trained, experienced and qualified staff. Personal protective equipment (PPE) should be worn to administer, assist with, clean up after chemotherapy, as well as to handle contaminated waste (**Figure 3**). In an ideal world, the use of a laminar flow fume hood is advocated for drug preparation, but failing that, employing a closed sealed administration system, such as Phaseal (Becton Dickinson, BD Worldwide) should be used, as a minimum.

Although the beneficial effects of chemotherapy against the cancer, in skilled hands, generally outweigh the potential side effects, almost all anti-cancer drugs have side effects. Toxicities may manifest at any time during chemotherapy treatment – commonly affected body systems include those with rapidly dividing cells – the gastrointestinal tract, bone marrow, skin/haircoat.

Figure 3. Personal protective equipment should be worn to administer, assist with, and handle chemotherapy contaminated waste

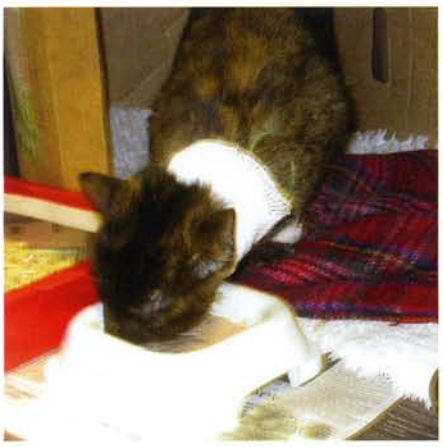

Figure 4. The placement of feeding tubes allows stress-free administration of medication, fluids and nutrition to patients. Oesophageal tubes are a good option and allow the patient to eat if desired

A good knowledge of the drugs and their likely side effects is essential in order to nurse these patients. As with all things, prevention is better than cure.

Nutrition & feeding

Nasal lymphoma patients are often inappetent owing to their inability to smell appetising food as a consequence of a blocked nose; and patients with respiratory compromise are often unwilling to eat because they cannot eat and breathe at the same time.

Cats may be anorexic if they feel unwell as a result of their disease or its treatment (chemotherapy may alter gustation and radiotherapy may induce stomatitis). Therefore, if provision of a diet with an appetising aroma and taste fails to stimulate intake, feeding tubes (oesophageal, for instance) are a good option (**Figure 4**).

The placement of feeding tubes allows stress-free administration of medication, fluids and nutrition to patients either in the hospital setting or at home. Tube feeding should be instigated before significant weight loss/cachexia occurs.

Comfort management

Comfort management is central to maintaining quality of life and compassionate care and requires that patients are kept as free as possible from the adverse effects of their cancer and its treatment.

Any tumour may cause pain – as can related diagnostic procedures; therapeutic procedures, such as chemotherapy and radiotherapy – although they may be considered palliative and pain-relieving

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in themselves. In addition to this, the patient may suffer from pre-existing chronic pain, such as arthritis.

Pain should be managed through constant re-evaluation, tailoring of analgesic protocols to address the patients changing needs, using multi-modal pharmacological analgesia and dedicated nursing care, both at home and in the hospital.

General

Keeping the facial area clean and clear of discharges is important, as feline patients with respiratory compromise may not groom. If the patient is 'accepting', then gentle daily grooming may improve comfort. Application of topical ophthalmic treatments may be required.

Fear and stress, as well as learned patient expectation, should also be taken into account and managed, especially in view of the multiple/repeated treatment experiences these patients must undergo.

Other factors to consider

When assisting with diagnostic procedures that involve flushing in the nasopharyngeal area, remember to secure the patent's airway whilst they are anaesthetised. Discuss this with the attending clinician as part of anaesthesia planning. Suctioning any excess fluid from the buccal cavity prior to recovery and having suction on stand-by is advisable.

Supportive care for the owner

Owning a cancer-bearing pet may be stressful and many owners may be 'suffering' too. By keeping up to date with the case, nurses will be able to give clear information to owners on their pet's disease process and answer questions on treatment options, health and safety and nursing advice.

Giving owners some simple, practical home nursing information can help make them feel more in control of the situation. It is also important to ensure that owners feel confident to call the clinic if they are worried about their pets at any time. vn

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