Feline Meningioma: Clinical signs and treatment options

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- Most common brain tumor in cats, typically 10 years or older
- Common Clinical Signs: altered mentation, circling and difficulty walking, blindness, and seizures
- MRI is needed to confirm the diagnosis and location of the tumor
- Surgery is the treatment of choice for accessible tumors
    - In > 90 % of cats who undergo surgery, clinical signs resolve, and morbidity and mortality are low – only ~10% have regrowth of their tumor in their lifetime
- Radiation therapy can eliminate/minimize symptoms for up to approximately 2 years

Meningioma is the most common brain tumor in cats[1]. They are slowly growing tumors – the vast majority are considered "benign" but cause clinical problems because they form space-occupying masses within the cranial cavity, where expansion is limited by the skull. A major objective of therapy is the elimination of the tumor mass and/or mass effect. Malignant (anaplastic) meningiomas in the cat are rarely recognized[2]. Most feline meningiomas grow in the forebrain. Cats tend to be older at the time of their diagnosis (12-13 years). The clinical signs of the tumor are variable and depend on the location of the tumor; behavioral changes are common – altered mentation, circling, ataxia, blindness, pacing and loss of balance are common clinical signs. Seizures may be the only clinical sign.

A diagnosis is made based on advanced imaging (i.e., MRI). Once a diagnosis is made, then a discussion of treatment options is appropriate. In general, treatment options include medical management (e.g., drug/chemotherapy), radiation therapy and surgery. Systemic chemotherapy efficacy is limited for brain tumors – the blood brain barrier serves as a barrier to the entry of most of those drugs. The mainstay of medical management is oral steroids - glucocorticoids can temporarily diminish the mass effect by reducing the peritumoral vasogenic edema. This is a palliative treatment that often improves clinical signs in the short term, but does not change the size or growth rate of the tumor itself.

Radiation therapy (RT) can be used in the treatment of brain tumors, including meningioma, that are not surgically accessible. A recent study evaluated the response to RT in cats that had brain tumors - The median overall survival time was 515 days for all tumor types combined[4]. Longer survival times were seen in cats with meningioma compared to gliomas.

For cats with surgically accessible meningioma, surgical excision has been shown to offer the longest survivals, and in many cases is essentially curative. A recent, multi-institutional study examined survival times in cats who underwent surgery for meningioma. One hundred and twenty-one cats were included in this study[5]. The study showed a low perioperative mortality of

only 6%. Six cats were eventually euthanized due to confirmed regrowth of the tumor, with an additional 3 suspected to have re-growth based on a recurrence of clinical signs. Thus, a total of 16/121 cats (12%) died as a direct consequence of the surgery or tumor regrowth causing progressive neurologic signs. Cats that lived for more than 1 month postoperatively had a median survival of over 3 years (38 months).

Importantly, most of these long-term survivors (45/54) did not die from tumor regrowth; many cats in fact went on to die of age-related causes – diseases frequent in geriatric cats such as cardiac disease, systemic neoplasia, and chronic renal disease. Additionally, although the median age of the cats in this study was 12 years, the survival times still exceeded 3 years, thus age should not prohibit the clinician from recommending surgery for treatment of meningiomas in cats.

For cats with compatible clinical signs or confirmed meningioma, referral to a neurologist for consultation and/or diagnostics should be strongly considered, as the clinical outcome with surgery can be quite good. In the majority of cases, perioperative morbidity and mortality are low, the survival times are long, and the quality of life is high. And while surgical excision may represent the most definitive treatment for feline meningioma, for clients unable to pursue such treatments, it should be remembered that medical management often provides adequate resolution of clinical signs and allows the cat and the owner to have good quality time together, which can be very comforting to an owner suddenly faced with a pet with neurological disease.

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