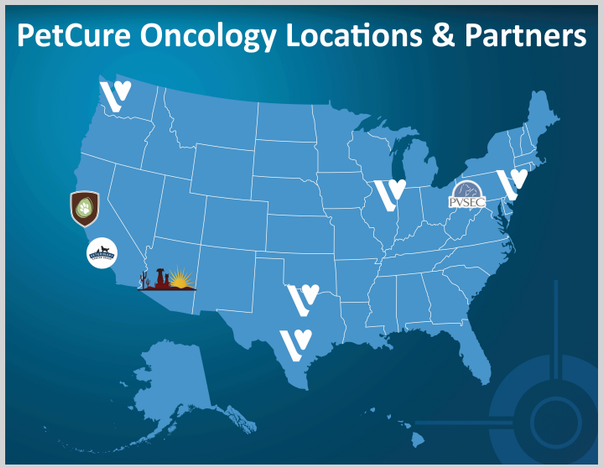
PetCure ONCOLOGY

Our full-time Pet Advocate Team is a dedicated group of veterinary technicians with oncology-specific experience. They are committed to supporting both veterinarians in the cancer care path and pet families navigating through the cancer treatment journey.

If you have a patient with diagnosed or suspected cancer, the Pet Advocate Team is here to support you. Whether you have a question, want to connect with a board-certified radiation or medical oncologist, or are ready to make a referral, **contact us at:**

PetCureOncology.com
833.VET.HERO (833.838.4376)
Petcure.PetAdvocate@ThrivePet.com

PetCure Oncology Locations & Partners



We understand. We commit. We will help.

Cytology or Biopsy?

Cytology is a minimally invasive diagnostic tool that may be performed without sedation. Use this test for suspected tumors where tumor grade is not used for prognosis/ treatment recommendations, or in cases where you and the client just need to know what the tumor is. Round cell tumors and epithelial tumors that exfoliate may be sampled this way.

Potential tumor types appropriate for fine needle aspirate cytology:

- Apocrine gland anal sac adenocarcinoma (AGASACA)
- Ear canal tumor - ceruminous gland adenocarcinoma
- Fatty tumors - lipoma, infiltrative lipoma, liposarcoma
- Kidney tumors
- Lymphoma
- Lymph nodes (metastatic disease)
- Mast cell tumor (MCT)
- Nasal tumor with superficial involvement
- Oral tumors
- Salivary gland tumor - adenocarcinoma
- Soft tissue sarcoma - may not exfoliate - does NOT rule out a cancer diagnosis if the cytology is negative
- Solitary plasmacytoma

Biopsy involves removing a tissue sample from the patient and submitting it for histopathology. This technique is especially useful for less friable tumors (sarcomas), when tumor grading is recommended, or if cytology collection is not possible.

Consider a biopsy to obtain a diagnosis for suspected tumors such as:

- Cutaneous/subcutaneous tumors
- Mast cell tumor (MCT) - grading is prognostic
- Nasal tumors - rhinoscopic or blind alligator forceps (do NOT sample deep to level of medial canthus)
- Oral tumors
- Soft tissue sarcoma (STS) - grading is prognostic

If a fine needle aspirate cytology does not return a diagnosis, internally located tumors may be sampled during exploratory surgery or via trucut biopsy with ultrasound guidance:

- Gastrointestinal tumors
- Hemangiosarcoma
- Kidney tumors
- Liver tumors
- Lung tumors
- Splenic tumors

Suspect cancer?

Here are four easy steps to start the staging workup process for your oncology patient

Most pets will need these tests within 30 days of advanced cancer treatment

1 Cytology /Biopsy

To confirm the presence of cancer & identify the cancer type

2 Baseline Lab Work

Including CBC, serum chemistries/electrolytes, urinalysis

3 3-View Chest X-Rays

Along with board-certified radiology read to rule out metastasis

4 Abdominal Ultrasound?

Strongly recommended IF the pet:
- Is suspected to have metastatic disease
- Is geriatric (8+ yrs)
- Is of a breed predisposed to cancer

The leaders in radiation therapy for pets supporting your care for patients with cancer

PetCure ONCOLOGY

Cancer Care Pathways for Radiation Therapy

Initial diagnostics for pets with suspected cancer - a tool for doctors and staff

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Use this grid to help guide you through the baseline diagnostics that your cancer patients will need based on their suspected or confirmed diagnosis.

For information on active clinical trials, visit PetCureOncology.com/ClinicalTrials

Tumor type	Clin. Path. abnormalities	Met check	Abd U/S	Other tests	Notes
Adrenal gland tumors (adenocarcinoma, pheochromocytoma)	None specific, but may present as Cushingoid, Addisonian, or values with NSF	Yes	Yes; may see lumbar/pelvic met dz on abdominal radiographs as well	Blood pressure for pheo along with urine metanephrine / normetanephrine concentration if clinical signs not clear; baseline cortisol and ACTH stim. if clinical symptoms warrant.	Prophylactic treatment with phenoxybenzamine prior to RT or surgery
Apocrine gland anal sac adenocarcinoma (AGASACA)	+/- ↑serum Ca	Yes	Yes; may see lumbar/pelvic met dz on abdominal radiographs as well	pTH and iCa panel if warranted clinically	Surgery to cytoreduce if possible, followed by RT/chemotherapy
Brain tumor (meningioma, glioma, etc.)	None specific	Yes	+/- *(see Definitions section following the Grading/Staging section)		Meningioma may be visualized on CT; other brain tumors may require MR imaging
Canine nasal tumor	None specific	Yes	+/- *		RT is the standard of care
Feline nasal lymphoma (LSA)	Review blood work/UA for concurrent renal disease	Yes	Yes, FNA cytology if renal subcapsular hypoechoic nodules/abnormal lnn. are visualized	FNA cytology of locoregional lymph nodes	RT of some form with concurrent chemotherapy – refer for chemotherapy consultation as well
Feline oral squamous cell carcinoma	Review blood work/UA for concurrent renal disease	Yes	If older or concurrent G.I./renal disease	FNA cytology of locoregional lymph nodes	
Heart base tumor (hemangiosarcoma, chemodectoma)	None specific, or anemia due to hemorrhage	Yes	Yes	EKG, echocardiogram	May present with pericardial effusion, cardiac tamponade
Hemangiosarcoma	One or more of the following: anemia, thrombocytopenia, schistocytosis, increased nRBC, and neutrophilia	Yes	Yes	nternal locations - recommend sampling by a radiologist under ultrasound guidance due to cavitation/risk of hemorrhage	Most common locations - cutaneous, right atrial appendage, splenic
Histiocytic sarcoma (previous terminology - malignant histiocytosis)	Second leading cause of pancytopenia (dogs); increased liver enzymes, hypoalbuminemia, hypocholesterolemia +/- hypercalcemia	Yes	Yes - abdominal lymph node, splenic, and hepatic involvement possible	Consider bone marrow aspirate cytology, especially for pancytopenia	Treatment is often with chemotherapy +/- palliative RT for mass lesions
Mast cell tumor (MCT) Grade 1/Low Grade 2	None specific	Yes	+/- *	FNA cytology of locoregional lymph nodes	These patients are typically treated with surgical excision, or with RT to follow surgery if complete excision is not possible
Mast cell tumor (MCT) High Grade 2/Grade 3, or aggressively behaving	None specific	Yes	Yes, FNA cytology on abdominal lnn., liver, spleen	A. FNA cytology on locoregional lnn. B. Submit malignancy panel (C-Kit, Agnor, Ki-67, etc.)	These patients are treated typically with surgery and chemotherapy; pRT for mass lesions
Multiple myeloma (MM)	+/- ↑serum Ca	Yes	+/- *	Full body radiographs (bony lesions), Bence Jones proteinuria or monoclonal gammopathy in serum (both by electrophoresis), bone marrow assay	Bolded diagnostic criteria at left are prognostic. Most often treated with chemotherapy/oral prednisone
Oral malignant melanoma (OMM)	None specific	Yes	+/- *	FNA cytology of locoregional lymph nodes	May receive canine melanoma vaccine during RT
Oral tumors in general - acanthomatous ameloblastoma (AA), fibrosarcoma (FSA), other sarcoma, squamous cell carcinoma (SCC), solitary plasmacytoma	None specific; check for monoclonal gammopathy (blood or urine electrophoresis) to screen for multiple myeloma (MM) for plasma cell tumors	Yes	+/- *		
Osteosarcoma (OSA)	↑ALP = negative prognostic indicator	Yes	+/- *	Technetium-99 scintigraphy NOT likely rewarding (7.8% concurrent OSA lesions found)	Amputate if sound on three legs/controlled osteoarthritis with oral analgesics and follow-up chemotherapy. SRT can be utilized when limb sparing is essential. Median survival time of 9-12 months has been observed, compared with 6 months with amputation alone.
Plasma cell tumors not MM - Solitary plasmacytoma of bone, solitary extramedullary plasmacytoma, nonosseous plasmacytoma	Check for monoclonal gammopathy (blood or urine electrophoresis) to screen for multiple myeloma (MM)	Yes	+/- *	Screening for MM via full body radiographs, Bence Jones urine proteins or monoclonal gammopathy in serum (both by electrophoresis), bone marrow assay	Locations may be in bone, oral cavity, cutaneous, rectal
Prostatic tumors (carcinoma, transitional cell carcinoma)	None specific	Yes	Yes	If no definitive subtype is given by the histopathologist, consider additional IHC stains	Addition of RT may double expected survival time of NSAID/chemotherapy alone, but has not been studied as sole therapy
Soft tissue sarcoma (STS)	None specific	Yes	+/- *	If no definitive subtype is given by the histopathologist, consider additional IHC stains	Grade 1 = 10-14% chance metastasis (namely, to the lungs); Grade 2 = 20%; Grade 3 = ~40% – refer for chemotherapy consultation as well Risk of recurrence for closely excised tumors increases with tumor grade.
Thyroid carcinoma	TH and TSH assessed prior to therapy	Yes	+/- *	U/S guidance for FNA cytology to avoid hemorrhage	CT scan from base of tongue to base of heart for planning
Transitional cell carcinoma (TCC)	None specific	Yes	Yes	Urine BRAF assay for screening; biopsy sample by traumatic urinary catheterization +/- ultrasound guidance - percutaneous aspiration of a urogenital mass is HIGHLY recommended against, as tumor growth through the aspiration tract has been observed in previous patients.	Location in the urinary bladder apex may be amenable to surgery followed by chemotherapy; addition of RT may double expected survival time of NSAID/chemotherapy alone, but has not been studied as sole therapy