**CNS Neoplasia: TCVM Diagnosis and Treatment**

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**Disclosure:**

 Roger M Clemmons teaches at the Chi Institute in Reddick, FL, but has no other financial relationship with any company mentioned in this article.

**Objectives:**

 1. Attendees will be able to understand the methods of achieving a diagnosis of CNS cancer.

 2. Attendees should be able to describe the develop a differential diagnosis and treatment plan for CND neoplasia

Cancer represents a unique state whereby the body's healing system fails to eliminate cells with damaged or altered DNA. This allows these cells to escape the normal regulatory signals leading to uncontrolled cell growth. While most auto-immune diseases represent a failure of the healing system from an over-active immune system, cancer represents the extreme opposite, whereby the immune system is hypoactive (at least in regard to the tumor). On the other hand, both chronic immune diseases and cancer probably represent outcomes from the failure of the healing system brought about by living within a polluted environment, coupled with the genetic make-up of the dog.

While we are beginning to unravel the complex biochemistry of cancer development and have begun to understand how DNA is damaged and repaired, we still have a long way to go before the cure for cancer will be found. Spontaneous healing of cancer has been documented many times in human beings and animals, suggesting that a cure is possible. On the other hand, there is a great deal of information about the potential for preventing many forms of cancer. Most of these techniques involve the use of diet and dietary supplements. We cannot control the air we breathe, unless we do this as a whole. Using alternative means of transportation, car-pooling and clean energy production are good for the environment and for those living in it. It does pay to fool Mother Nature, she will get even in the end. We can, however, control the food our pets eat and the water they drink; thereby, reducing their pollution load. We can provide our pets with anti-oxidants and bioflavonoids, compounds which help protect DNA and the healing system. We can give them sufficient fiber in their diets to support digestion and protect the GI tract from cellular damage.

 Treatment of cancer with traditional Western medicine involves surgery (to remove or de-bulk the tumor mass), ionizing radiation (to expose the tumor to lethal doses radiation, minimizing radiation exposure to surrounding healthy tissue), and chemotherapy (to poison the rapidly growing cancer cells without poisoning the rest of the body). One or all of these methods may be employed in a given patient in an attempt to delay or prevent further cancer growth. On average, the success of Western approaches to cancer provides 1 to 18 months of relief from the cancer. While longer survival times are seen with certain forms of cancer, the long term prognosis for even the best forms of "systemic" cancer is poor to grave. The best chance for a good prognosis is for localized cancer (particularly benign lesions) which can be removed completely with surgery. When surgical removal of the cancer is not possible, or when the cancer has already spread to other organs (metastasized), control of the tumor may not be possible by conventional means and the owner must make difficult choices about the continued care of their pet. Some of these choices are very expensive. Traditional Western diagnostic methods have advanced dramatically in the last few years and provide the best chance to discover the natural of the tumor and to predict its clinical course. Advanced imaging techniques like diagnostic ultrasound, computer-assisted tomography (CAT scans) and magnetic resonance image (MRI scans) have vastly improve tumor diagnosis. Fine-needle aspirates or "true-cut" biopsies of tumors (sometimes performed in conjunction with an imaging technique) can provide cytological confirmation or histological diagnosis of the tumor type, leading to better therapeutic recommendations.

 In isolated cancers where "focused" radioablative surgery can be performed (such as in brain tumors), this can be a excellent treatment option. It is not inexpensive, but can be performed at selective veterinary medical facilities and provides stereotaxic precision to the radiotherapy. In addition, all of the radiotherapy can be done at one time, under a single anesthesia. Stereotaxic radioablation also minimizes damage to surrounding tissues. Moreover, the patient's immune system (and healing system) is not compromised outside the bounds of the tumor, allowing the patient greater potential for healing. While stereotaxic radioablation is currently limited to the brain (and, in some cases, the liver), it offers great potential for good. I am, personally, not enthralled with other forms of radiotherapy or with chemotherapy. Chemotherapy uses compounds which are toxic to the body and destroys the animal's immune system, hoping that the tumor is killed before the patient. While animals do not suffer all of the side-effects as human beings undergoing radiation therapy or chemotherapy, these treatments can still have significant and, in some cases, life-threatening side-effects in dogs. Owners must weigh the benefits and the risks carefully before making the decision to put their pet through radiation treatments or chemotherapy.

 To me, the answer to cancer lies in the immune system. This is the major reason why I have trouble with Western chemotherapy. Spontaneous remission from cancer only occurs when the patient's immune system acts to clear the cancer. Therefore, stimulation of the patient's immune system to selectively attack the cancer seems to be the key to achieving a successful outcome. New methods in immunotherapy and immune-targeted chemotherapy are likely to be the Western methods which lead to the greatest advances in cancer treatment over the next few decades.

 Traditional Eastern medicine has also been used successfully in the treatment of cancer for thousands of years, long before we understood the basic pathobiology of tumors. It is not a replacement for Western diagnosis and therapy, but may be used with Western approaches to help heal patients. When the option for Western therapy is lacking, there are Eastern therapies which can be employed to help the patient live a quality life, reducing the rate to cancer expansion or, in some cases, leading to remission of the cancer. Eastern medicine may be best suited to prevention of the development of cancer through healthy living. On the other hand, herbal medications have been shown to lead to spontaneous remissions of cancer. In some cases, these herbal products can be used in conjunction with traditional Western therapies, improving the outcome and reducing the side-effects from Western therapy alone. An integrative approach combining the best of both Western and Eastern medicine seems to be the only sensible course of action, providing the best overall care for the patient.

 Reducing risk factors for cancer, eating a properly balanced diet (free of pesticides and preservatives), drinking pure water, providing appropriate anti-oxidants, vitamins and minerals, and exercising regularly can help prevent cancer. Once cancer has been found, additional supportive measures are needed. Cancer cells utilize carbohydrates for fuel and compete for the body for amino acids. However, these cancer cells do not metabolize fats. Some data suggests that high fat diets can help the patient overcome the effects of cancer and even reduce cancer expansion. A number of herbal products can stimulate the immune system to attack cancer or block the mediators which the tumor uses to spread to other areas of the body, mediators which the tumor needs to survive. The following is a guide to the integrative treatment of cancer, using those compounds where there is scientific data to support their use in cancer management, helping the patient survive the disease.

**The Cancer Diet:**

Although eating healthy is the best tool in the fight against cancer, once cancer takes hold certain dietary changes may be help the patient fight against the effects of the cancer. Tumor cells rely heavily upon carbohydrates for their energy and rob the body of amino acids. On the other hand, tumor cells cannot utilize lipids (fats) for energy while the rest of the body can. As such, diets with increased fat content may slow tumor growth, allowing the patient to fight against the tumor. Protein content must be maintained a levels sufficient for tissue repair, but carbohydrates should be held to a minimum. For those who prefer to prepare their dogs food, the following diet contains the ingredients important for cancer patients. In addition, it supplies the important nutrients for cancer protection. For those who cannot cook for their dog, a commercial food should be of good quality, moderate protein (18-22%) content, low carbohydrate (3-13%) content, and high fat (55-60%) content. One of these is Mighty Dog Bacon & Cheese dog food. Your veterinarian can assist you in finding a food which fits these criteria and is satisfactory to your dog.

 Home cooked cancer diet: (for 60-70 pounds body weight)

8 oz Catfish

8 oz Tofu

2 tbs Virgin Olive Oil

2 Whole Carrots

½ cup Spinach

¼ cup Green Pepper

½ cup Broccoli

¼ tsp Dry Ginger

1 Raw Garlic Cloves

¼ tsp Dry Mustard

1 tab Flintstones

1250 mg Calcium

Prepare by cooking the carrots, green peppers and broccoli in the olive oil in a wok until tender, add catfish (cubed). Once catfish is beginning to cook, stir in spinach to wilt. When spinach is wilted, turn off heat and crumble tofu into the mixture. Add crushed raw garlic and the additional dry ingredient let cool and serve. Diet contains 1355 Calories with a 27/13/60 percent protein/carbohydrate/fat.

**Dietary Supplements:**

 ***Vitamins & Antioxidants:*** The vitamins and antioxidants for cancer patients are the same for all dogs, including vitamin E, vitamin C, selenium, beta-carotene, ginkgo bilboa, green tea and grape seed extract. In addition, the membrane stabilizers omega-3-fatty acids, gammalinolenic acid and coenzyme Q-10 are important for cancer patients. Many of the antioxidants help stabilize DNA and help reduce cancer development or progression. Some data suggests that antioxidants can reduce the effectiveness of radiation and chemotherapy, but this is not well documented. It may be best to stop antioxidants 3 days before radiation therapy or at the start of chemotherapy, reinstituting the antioxidants a few days later. Most of the herbal antioxidants are good for preventing cancer, too.

 ***Immunostimulants:*** **Echinacea:** American Indian medicine gave us a useful native plant that is another immune-system booster: purple coneflower, *Echinacea purpurea* and related species. The root of this ornamental plant is held in high esteem by herbalists, naturopathic doctors, and many lay-people because of its antibiotic and immune-enhancing properties. You can buy echinacea products in any health food store: tinctures, capsules, tablets, and extracts of fresh or dried roots. Although few medical doctors in America are familiar with echinacea, much research on it has been done in Germany, and the plant is in widespread use as a home remedy in Europe and America. Follow the directions for adult dosing.

**Astragalus:** Another Chinese herbal remedy with similar properties comes from the root of a plant in the pea family, *Astragalus membranaceus*. This plant is a relative of our locoweed, which is toxic to livestock. The Chinese species is nontoxic, the source of a very popular medicine called huang qi that you can buy in any drugstore in China for use against colds, flu, and other respiratory infections. Recent studies in the West confirm its antiviral and immune-boosting effects, and preparations are now available in most health food stores here. Follow the directions for adult dosing.

 ***Anti-Cancer herbs:* Cat's Claw (una de gato):** Cat's claw (name derived from the pattern of thorns found on the vines), *Uncaria tomentosa*, comes from the Peruvian rain forest and was traditional used by the indigenous people to treat cancer and arthritis. Recent studies indicate that it contains immune-enhancing substances, including several antioxidant compounds. These compounds may account for the antitumor properties reported for cat's claw. Treatments have been reported to lead to remission of brain and other tumors. While published data is lacking, cat's claw should be considered in tumors of the central nervous system. Use ¼ the adult human dose for small dogs, ½ for medium dogs and the equivalent dose in large dogs.

**Reishi and Maitake Mushrooms:** Like astragalus, mushroom extracts stimulate the patient's immune system by presenting unique macromolecules to the intestinal tract, where they alter the immune regulation by intestinal antigen processing systems. In addition, maitake mushroom extract has been shown to activate NK Killer cells which attack tumor cells and to prevent destruction of T-Helper cells. There is no known toxicity from these mushroom extracts. Use ¼ the adult human dose for small dogs, ½ for medium dogs and the equivalent dose in large dogs.

**Pau D'Arco:** This herbal extract from the inner bark of trees of the *Tahebuia genus* (found in South American rain forests) contains lapachol which has been reported to induce strong biological activity to cancer. No adverse effects have been reported with the drug. Studies with pure lapachol have not indicated that blood levels are inadequate to provide the anti-cancer and anti-inflammatory actions attributed to Pau D'Arco. On the other hand, its effectiveness may not be related solely to lapachol, but influenced by other phytochemicals in the extract. Use ¼ the adult human dose for small dogs, ½ for medium dogs and the equivalent dose in large dogs.

***Other Dietary Supplements:*** **Milk Thistle:** Milk thistle is an herbal product that help protect the liver from toxic damage. It may be useful in treating chronic active hepatitis or as a prevention of injury from other drugs. It has been used to protect the liver from damage from chemotherapy in human patients. It may help prevent damage from traditional anti-convulsants (phenobarbital). I recommend starting at 1 capsule twice a day.

**Shark Cartilage:** Mounting evidence suggests that shark cartilage has anti-angiogenic properties, reducing blood vessel development into tumors. While it is not ecologically sound to harvest sharks for their cartilage, it is hard to deny to benefit of reducing tumor blood flow in reducing tumor size and preventing distant metastasis. On the other hand, a recent study using shark cartilage in terminally ill human cancer patients showed no evidence of benefit either in tumor growth or in the quality of life of the patients. If your dog has neoplasia, you can consider using 1000-2000 mg of shark cartilage daily, taking into account that it may do nothing beneficial.

**Miscellaneous:** You may want to add Essiac tea, Wheatgrass extract, Soybean Concentrate or Chlorella (see www.wheat-grass.com) {these are not proven, only antidotal}; however, soybean concentrate contains many of the same compounds found in Tofu, in a liquid form. My feeling is that if you use the diet which is based upon Tofu for much of its protein, you do not need soy concentrates. On the other hand, this might be useful in dogs who remain on commercial dog food.

**Basic Cancer Approach:**

 Cancer remains a unique case. Sadly, in veterinary medicine the goal is to palliate not cure. This is because animals cannot tolerate the protocols used on human beings with cancer. Even so, 1 to 18 month survivals are possible in animals, representing 5-10 year survival times in human beings. My personal belief is that cancer which can be surgically removed with clean margins is the only good kind. I am not sure that radiation and chemotherapy are the best option, but owners must decide for themselves what they want to do and put their pets through. There are some things which should be done for all cancer patients regardless of whether they are treated with conventional radiation and chemotherapy. These are outlined here. Other information can be obtained at and <http://Dog2Doc.com/chi-files/Acupuncture/TCVM_Diet/TCM_5-E_Diet.ppt> about diet and herbal medications. Step in supporting cancer patients:

1. Low-Carbohydrate food (home prepared is best or use Pedigree Weight Loss Formula)
2. Canine basic antioxidant formula (Westlab Pharmacy 800-4WESTLA)
3. Canine arthritis formula (Westlab)
4. Canine cancer formula (Westlab)- -use at 2 times prevention dose
5. COX-2 inhibitor (daily- -particularly for carcinomas)
6. Melatonin at night (0.1-0.2 mg/kg, which is now included in the Canine cancer formula)
7. 5-hydroxyurea for meningiomas (50 mg/M2 every 3-4 weeks)
8. Stasis in the Mansion of the Mind formula (0.5 gm/10 lbs BID, Jing Tang 800-891-1986)
9. Max’s formula (0.5 gm/10 lbs BID, Jing Tang)

The rationale for each of these products is sound, but more than I wish to explain at the moment. Antioxidants do protect and help stabilize the immune system. Collagen support may help inhibit angiogenesis by the tumor. Mushrooms and astragalus help boost the immune system. COX-2 drugs double life expectancy with carcinomas while melatonin appears to improve survival times in all solid tissue tumors including gliomas. None of these measures will necessarily treat or cure cancer, but they will not do any harm and may provide quality of life. That is probably what is important in cancer which cannot be surgically removed.

**TCVM Patterns for Cancer:**

 Cancer in TCVM represents blood stagnation leading to a mass. It can result from excess conditions which accumulate phlegm and lead to damaged Qi and blood flow by the liver. Once the damage is done, generally the pattern of deficiency remains even if there is local stagnation. The underlying deficiencies are: Qi & Blood Deficiency and Qi & Yin Deficiency.

**Qi & Blood Deficiency:** Patients with the pattern of Qi & Blood Deficiency have a lower cell immunity response than normal. Symptoms include: hair loss; dizziness; fatigue; a thin body; shortness of breath; poor appetite; insomnia; palpitations; abdominal pain; a pale complexion; loose stools; scanty urine; a pale tongue with a white tongue coating; and a deep, thin, and weak pulse.

 **Qi & Yin Deficiency:** Patients with lung Qi deficiency may have a lower lymphocyte transformation rate and lower levels of serum immunoglobulins such as IgM and IgG. Symptoms include: sweating; palpitations; shortness of breath; insomnia; chest congestion; cough without phlegm; lassitude; dry mouth; a thin tongue coating; and a thin pulse.

**Local AP points:** Surround the Dragon (just don’t needle the actual tumor)

**Special AP points:** GV-14, ST-36, LI-4, TH-5, LIV-3

**TCM herbal:** While the following 2 herbs are my main TCVM herbals of choice in treating CNS Neoplasia, they can be redirected by adding additional formulas such as *Cervical Formula* or *Hindquarter Weakness Formula* in order to bring the medicines to the affected region of the spinal cord. In addition, *Stasis Breaker Formula* may be used as a substitute for *Stasis in the Mansion of the Mind Formula* based upon the preference of the TCVM practitioner.

*Max’s Formula:*

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| --- | --- | --- |
| **English Name**  | **Latin Name** | **Actions** |
| Bai Zhi | Angelica | Clear Wind-Cold and Relieve Pain |
| Da Huang | Rheum | Clear Stagnation/Stasis and Clear Heat |
| Jie Geng | Platycodon | Open the Upper Jiao and Transform Phlegm |
| Mu Li(Shu) | Ostrea | Soften Hardness and Clear Mass |
| Tian Hua Fen | Trichosanthes | Clear Heat and Promote Body Fluids |
| Xia Ku Cao | Prunella | Clear Liver Heat and Resolve Nodules |
| Xuan Shen | Scrophularia | Clear Heat and Cool Blood |
| Zhe Bei Mu | Fritillaria | Soften Hardness and Resolve Nodules |

*Stasis in the Mansion of the Mind Formula:*

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| --- | --- | --- |
| **English Name**  | **Latin Name** | **Actions** |
| Bai Zhi | Angelica | Warm the Channel, Relieve Pain |
| Ban Xia | Pinellia | Transform Phlegm |
| Chuan Xiong | Ligusticum | Move Blood |
| Dan Shen | Salvia | Move Blood |
| Di Long | Lumbricus | Clear Wind, Invigorate Channel |
| Gao Ben | Ligusticum | Relieve Pain |
| Ge Gen | Pueraria | Bring Qi Upward |
| Hong Hua | Carthamus | Break Down Blood Stasis |
| Jiang Can | Bombyx | Transform Phlegm, Resolve Nodules |
| Quan Xie | Buthus | Break Down Blood Stasis |
| Sheng Ma | Cimcifuga | Ascend Qi |
| Zhe Bei Mu | Fritillaria | Transform Phlegm, Resolve Nodules |

*CNS Neoplasia*

1. Dewey CW: Encephalopathies: Disorders of the Brain. In: CW Dewey (ed), A Practical Guide to Canine and Feline Neurology, Ames, Wiley-Blackwell, pp. 156-172, 2008.