

## Southwest Veterinary Oncology Topic: What to Irradiate and When



Dr. Pam Jones planning a radiation case using three dimensional treatment planning software.

Radiation therapy is one of the best tools we have in the fight against cancer. Primary radiation therapy is indicated for the control of malignancies in which surgical excision would result in unacceptable morbidity and/or impaired functional results. Radiation therapy is also indicated as an adjuvant treatment

for incompletely resected tumors or in the palliative setting to provide pain relief. All of radiation therapy's benefits (and all of its side effects) are restricted to the anatomy to which it is applied. Radiation sickness is not seen in our veterinary patients as we rarely apply radiation to a large portion of the abdominal or thoracic cavity. Our ability to target the tumor and spare the normal tissues has improved dramatically, which has greatly decreased the side effects associated with therapy.

The more precisely radiation therapy can be delivered, the lower its impact on the surrounding normal tissues. Through the choice of appropriate energies of photon and electron beams and the use of advanced imaging, 3-dimensional treatment planning, conformal blocks, body cradles,

head and neck positioners, and portal imaging, malignancies can be accurately treated to high doses, while minimizing the amount of normal tissue that is included in the field. We are the only facility in Arizona with 3-dimensional treatment planning, conformal blocks, and a linear accelerator with electrons.

Acute side effects, which include all the 'itis' (mucositis, conjunctivitis, dermatitis, keratitis) will develop toward the end of therapy and completely resolve within 2-4 weeks. Supportive care, especially the use of analgesics, is imperative during this time to make certain that our patients continue to eat and interact with the clients at an appropriate level. Frequently, our patients need to be spoiled, and few of our owners ever have

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### Coming Soon to AVS!

Arizona Veterinary Internal Medicine will be adding cardiology services in August.

## AVS Monthly Continuing Education Presentation

Wednesday, August 2, 2006

### What's New in Diagnostic Imaging

Sponsored by Sound Technologies

Susan Finn-Bodner, DVM, MS, DACVR

The schedule of the program will be:

5:30 - 6:30 pm: Registration & Dinner

6:30 - 7:30 pm: Lecture

7:30 - 8:00 pm: Dessert and Questions

The courses will be held at Arizona Veterinary Specialists, 86 W Juniper Ave, Gilbert, AZ 85233, (480) 635-1110. These programs are for veterinarians only. These courses are approved for 1 CE hour by the Arizona Veterinary Medical Association (AzVMA).

The programs are free and include the dinner and lecture notes. However, seating is extremely limited and reservations will be taken on a first come – first serve basis. To register for the event, please fax the title of the requested event, your name, hospital name, phone, and e-mail address to (480) 892-0540, no later than 48 hours prior to event.

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## What to Irradiate and When (continued)

*"We are the only facility in Arizona with 3-dimensional treatment planning, conformal blocks, and a linear accelerator with electrons."*

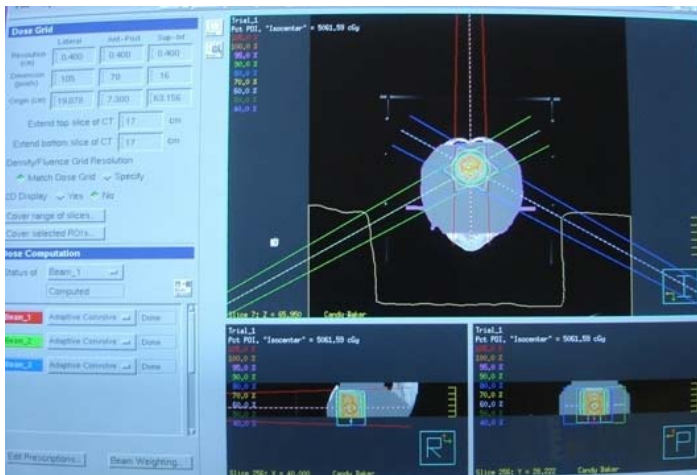
difficulty with the 'spoil them rotten' release orders.

Late side effects may develop months to years after therapy and include radioosteonecrosis, second malignancies, cataract development, and myelomalacia. Only the development of cataracts is considered acceptable as these can be removed. The goal of fractionated therapy is to keep the frequency of other late effects, which can be life-threatening, to less than 1%.

In order to safely deliver doses high enough to control malignancies, the surrounding normal tissues in the field must be protected by delivering small doses daily. **Current medical standard of care** dictates treating Monday through Friday for 3-4 weeks except for palliative regimens where total doses are kept to low levels. The fewer tumor cells we start with, the better our chances of achieving permanent control, and there is no doubt that treating in the microscopic setting greatly improves our chances.

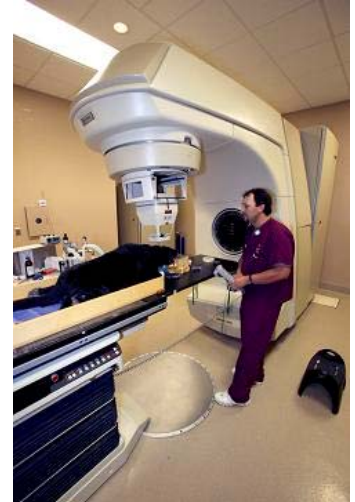
In the vast majority of cases, surgeons, radiation oncologists, and medical oncologists need to work together give our patients

The three dimensional treatment planning software calculates the precise dose to the tumor and surrounding normal tissues.



the best chance of extending their survival times significantly without impacting their quality of life. Southwest Veterinary Oncology is proud to be the only oncology practice in the state with board-certified veterinary specialists in all of these areas. That, together with our state of the art equipment and facilities, allows us to offer the highest level of care to our patients. Our goal continues to be to find every single good day there is to be had, and our priority remains our patients' quality of life.

Please contact us at our Gilbert location at (480) 635-1110, extension 2, our Glendale location at (623) 298-5354, or our Tucson location at (520)-888-3177 to speak with one of our board-certified oncologists for further information regarding radiation therapy.



Radiation Technician prepares a patient for treatment using the Linear Accelerator.

### Malignancies With >80% Control At Three Years

- Ameloblastoma (acanthomatous epulis)
- Incompletely excised soft tissue sarcomas
- Incompletely excised mast cell tumors
- Transmissible venereal tumors
- Solitary extranodal lymphomas
- Canine squamous cell carcinomas in the anterior mandible

### Malignancies With >50% Control At 1 Year

- Central nervous system tumors
- Grade II mast cell tumors with positive lymph nodes
- Apocrine gland adenocarcinomas
- Thymomas
- Incompletely excised thyroid carcinomas
- Vaccine associated sarcomas

### Malignancies With Significant Extension Of Life

- Nasal tumors
- Malignant melanomas

### Malignancies With Good Local Control Requiring Adjuvant Chemotherapy

- Hemangiosarcomas of the extremities
- Grade III mast cell tumors

### Malignancies With Variable Responses Dependent On Their Size And Location

- Canine squamous cell carcinomas
- Feline squamous cell carcinomas

### Malignancies That Benefit From Palliative Radiation Therapy

- Osteosarcoma – pain relief in ~75% of cases
- Bony metastases

### Benign Conditions With Complete Responses To Radiation Therapy

- Infiltrating lipomas
- Eosinophilic granulomas
- Perianal adenomas
- Acral lick dermatitis (without underlying bony changes)
- Sebaceous hyperplasia

## Services Offered at Arizona Veterinary Specialists

### Dentistry

- Periodontics
- Dental digital radiography
- Endodontics
- Nasal disease treatment
- Oral disease treatment
- Oral surgery
- Orthodontics
- Restoration
- CO<sub>2</sub> laser for thermoablation gingivoplasty



### Oncology

- Linear accelerator radiation therapy
- Chemotherapy
- Immunotherapy
- I-131 radioactive iodine treatment
- Cryotherapy
- Oncologic surgery
- Clinical trials

### Ophthalmology

- Biomicroscopy
- Indirect ophthalmoscopy
- Electroretinography
- Ultrasonography
- Applanation tonometry
- Fluorescein angiography
- Glaucoma treatment
- Cataract surgery
- Corneal reconstructive surgery
- Treatment of eyelid abnormalities

### Dermatology

- Allergy testing (skin testing) and immunotherapy
- CO<sub>2</sub> laser for ablation of skin tumors
- Video otoscopy
- Testing for food allergies and hypoallergenic diets
- Ear disease diagnosis and treatment
- Bacterial and fungal skin disease diagnosis and treatment
- Cytological smears and microbiologic examinations
- Ectoparasite identification and treatment
- Immune-mediated and hormonal skin disease diagnosis and treatment
- Treatments of nail and nail bed disorders
- Skin biopsy sampling and histopathology interpretation

### Radiology

- Helical CT scanning
- Diagnostic imaging
- Ultrasonography
- Radiographic interpretation
- Nuclear imaging
  - GFR Scans
  - Bone Scans
  - Thyroid Scans
  - Portocaval Shunts



### Internal Medicine

- Endoscopy
  - Bronchoscopy
  - Bronchoalveolar lavage
  - Colonoscopy
  - Cystoscopy
  - Foreign body retrieval
  - Gastroduodenoscopy
  - PEG tube placement
  - Rhinoscopy
- Endocrine disorders
- Emergency exams
- Blood and plasma transfusions
- Cardiovascular diseases
- Gastrointestinal diseases
- Genitourinary disorders
- Hepatic diseases
- Infectious diseases
- Intensive care treatment
- Immune-mediated diseases
- Nutrition consultations
- Oxygen therapy and critical care
- Pancreatic diseases
- Pulmonary diseases
- Renal disease
- Respiratory diseases
- Second opinion examinations
- Ultrasonography

### Anesthesia And Pain Management:

- Anesthetic management of high risk and critical care patients
- Development of all anesthetic protocols for surgical patients
- Extensive anesthesia monitoring
  - Blood pressure, both direct and indirect
  - Pulse oximetry
  - Electrocardiogram
  - Capnography
  - Body temperature
  - Ventilator therapy
- Pain management
  - Preemptive analgesia
  - Epidural analgesia
  - Regional nerve blocks
  - Continuous-release analgesics through intravenous infusion and/or transdermal pain patches
- Veterinary anesthesia consultation service
- Chronic pain management consultations

### Surgery

- Abdominal surgery
- Airway surgery
- Angular limb deformity surgery
- Arthroscopy
- CT Scans
- External skeletal fixation
- Fracture repair
- Neurologic surgery
- Oncologic surgery
- Oral surgery, such as maxillofacial surgery and oral fractures
- Orthopedic surgery
- Otolgic surgery
- Perineal surgery
- Reconstructive surgery
- Ring fixators
- Soft Tissue surgery
- Thoracic surgery
- Tibial Plateau Leveling Osteotomy (TPLO)
- Triple Pelvic Osteotomy (TPO)
- Total Hip Replacement (THR) both cemented and cementless procedures available



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## Arizona Veterinary Specialists

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For more information visit our website at  
[www.azvs.com](http://www.azvs.com)

Questions or comments?

E-mail us at [editor@azvs.com](mailto:editor@azvs.com)

## AVS MISSION STATEMENT

To enhance the quality of our patients' lives, to strengthen the human-animal bond, and to provide a safe and stimulating work environment for all of our team members.

## AVS CORE VALUES

### INNOVATION

We will strive to discover and share knowledge that will continuously improve the veterinary profession.

### EXCELLENCE

At Arizona Veterinary Specialists, our standard is excellence in all that we do and the way in which we do it.

### COMPASSION

The spirit of all our relationships will be driven by compassion.

### PATIENT CARE

We are committed to providing compassionate, ethical, and quality care to our patients. We treat them as if they are members of our own families.

### INTEGRITY

We will conduct ourselves in a manner that will instill confidence and trust in all of our interactions.

### SERVICE

Service is the cornerstone of Arizona Veterinary Specialists. We will strive to meet and exceed the expectations of the community we serve.

## AVS Specialty Practices



Check our website for a photo tour of our facility

[www.azvs.com](http://www.azvs.com)

### Southwest Veterinary Surgical Service

David L. Bone, DVM

Diplomate, American College of  
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Bradford C. Dixon, DVM, MS

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Diplomate, American College of  
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### Southwest Veterinary Oncology

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### Arizona Veterinary Dentistry and Oral Surgery

Kenneth F. Lyon, DVM

Diplomate, American Veterinary  
Dental College

Peter D. Bates, DVM

### Arizona Veterinary Imaging

Susan Finn-Bodner, DVM, MS

Diplomate, American College of  
Veterinary Radiology  
(starting 7/31/06)

### Eye Care For Animals

Lisa M. Felchle, DVM

Diplomate, American College of  
Veterinary Ophthalmology

Sara Calvarese, DVM

Andrew Greller, DVM

Joanna Duckworth, DVM

### Dermatology Clinic For Animals

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Diplomate, American College of  
Veterinary Dermatology

Kimberly S. Coyner, DVM

Diplomate, American College of  
Veterinary Dermatology

John C. Angus, DVM

Diplomate, American College of  
Veterinary Dermatology

Anthea E. Schick, DVM

Amy Shumaker, DVM

### Arizona Veterinary Internal Medicine

Janet K. Bailey, DVM

Practice limited to  
Internal Medicine

Whit M. Church, DVM

Practice limited to Cardiology  
(starting 8/21/06)