Cancer Pain Management

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Cancer Pain Management for Small Animal Patients

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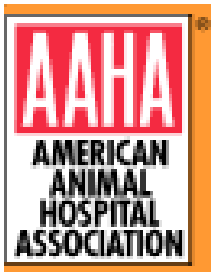
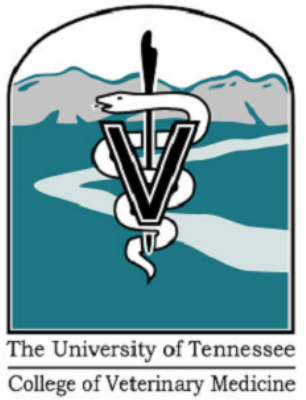




Pain in Cancer

- Cancer is often a painful disease
- 1/3 of all human cancer patients report pain (60-90% with advanced cancer)
- 70-90% can achieve “good” pain control
- pain is often more feared than death
- extension of these same concerns by owners to their pet’s cancer

Cancer Pain Fundamentals

- Understand the disease and extent
- Recognize the cause and importance of each pain
- Consider diverse management options
- Staged pain management approach
- Titrate, adjust and balance care to maintain the most appropriate control

Specific Concerns

- Acute cancer related pain -
  - surgical oncology, radiation therapy
- “Chronic” pain -
  - pain of metastasis, treatment related pain
  - palliative care and terminal cancer pain
- “Pain in dying” -
  - aspects of suffering and the psychology of cancer

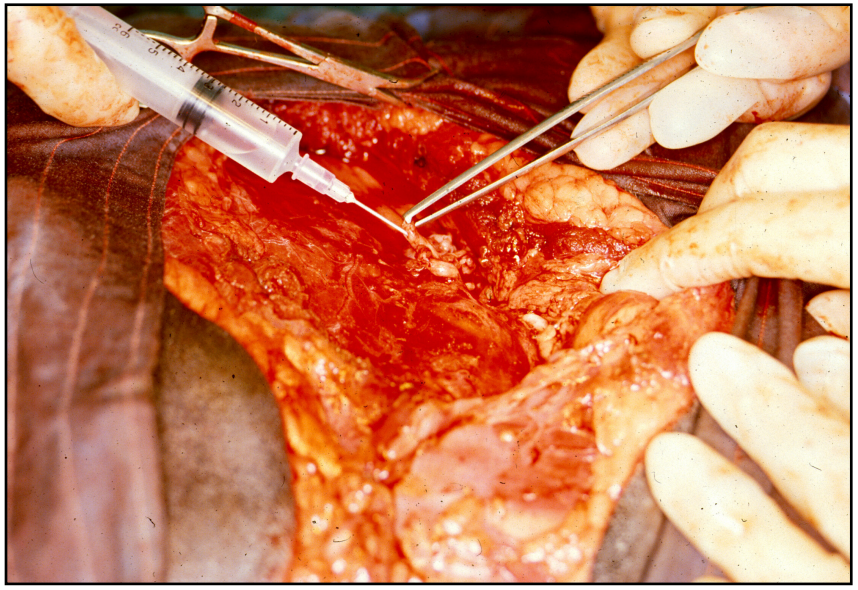
Analgesia in Cancer Surgery

- Pre-emptive, balanced and adequate analgesia
- Value of local anesthetics in surgical oncology
- Mandibular alvelolar block -
  - lower lip and gum

Analgesia in Cancer Surgery

- Pre-emptive, balanced and adequate analgesia

- Value of local anesthetics
  in surgical oncology
  lidocaine + bupivacaine
  rapid onset + long duration

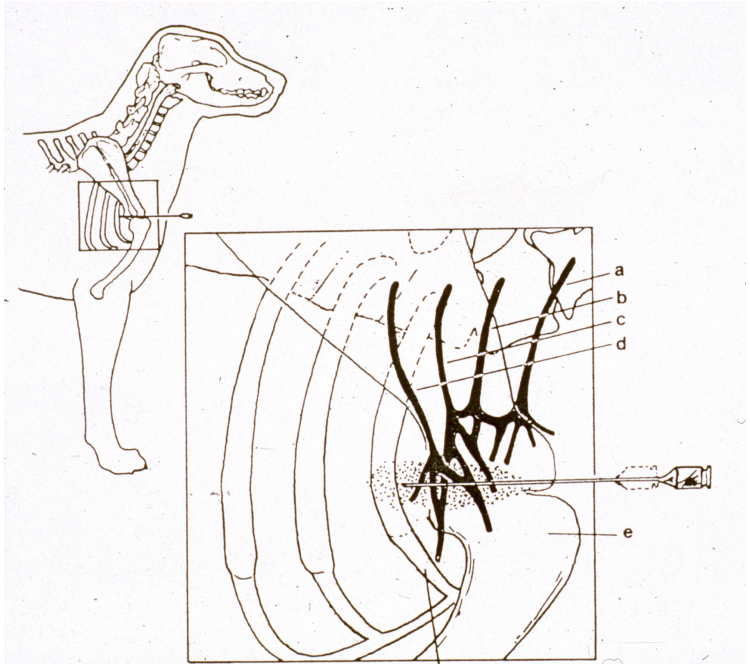


- Injection of nerve sheath
  prior to transection in this forelimb amputation

Analgesia in Cancer Surgery

- Pre-emptive, balanced and adequate analgesia

- Value of local anesthetics
  in surgical oncology
  lidocaine + bupivacaine



- Brachial Plexus nerve block
  effective distal to elbow - distal limb only

Clinical Assessment

- History - comprehensive
- Examine sites of pain and dysfunction thoroughly
  - (may need analgesics!)
- Use appropriate diagnostic tools
  - (Radiography, Ultrasound, CT, MRI, Nuclear Scintigraphy)

Clinical Assessment

- Evaluate extent of disease - extent of pain
- Treat the pain early and aggressively to fully gain control early
- Watch for the development of tolerance and side effects - Then deal with these…

  Problems can be managed, without resorting to pain for the patient!

“Acute” cancer pain

- Associated with tumor involvement
  - compression, erosion, nerve compromise
  - paraneoplastic syndromes
- Surgery or other procedures
- Importance of operative pain management
  - Often the first opportunity that we have
  - Preemptive analgesia prevents pain syndromes

“Chronic” cancer pain

- More difficult to diagnose and to treat
- Longer duration, less well defined onset
- Increase with tumor progression
- Subside during periods of tumor regression
- Associated with a negative quality of life

  Often characterized by behavior changes: anxiety, depression, anorexia, sleep disturbances

  “She’s just not been herself.”

Types of pain in cancer:

- Somatic Pain
- Visceral Pain
- Neuropathic Pain
- Inflammatory Pain

Somatic Pain in Cancer

- More acute and specific in nature
- Nociceptor activation: sharp, aching, throbbing or pressure-like
- Metastatic bone pain, postsurgical pain, musculoskeletal pain

Visceral Pain in Cancer

- Less well localized pain
- Nociceptors of thoracic, abdominal or pelvic viscera yield referred pain
- Diffuse gnawing or cramping, aching or throbbing

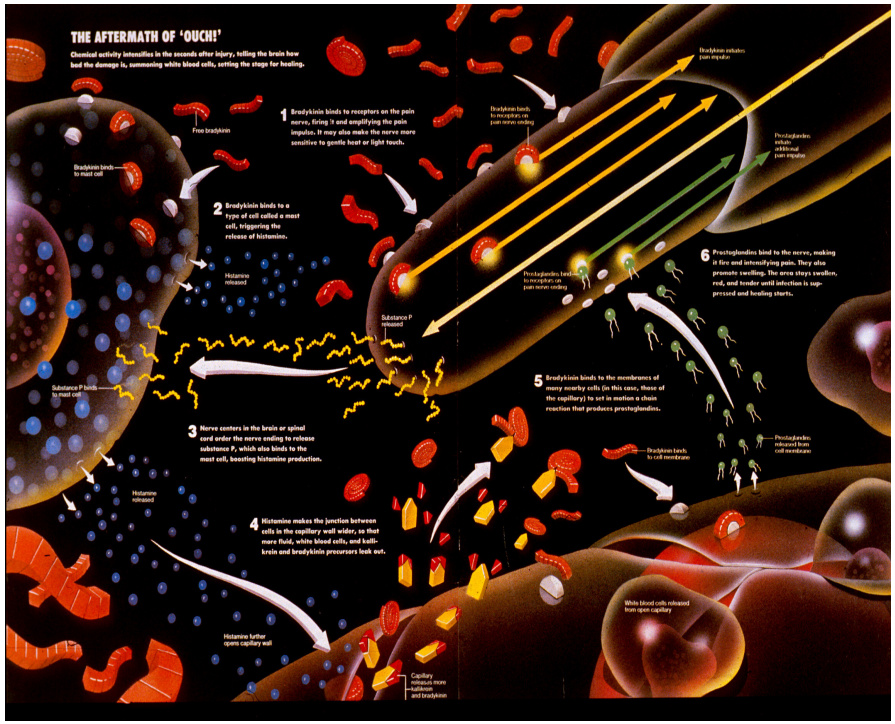
Neuropathic Cancer Pain

- Central or peripheral nerve involvement
- Infiltration or compression of nerves
  - nerve root, brachial plexus or lumbosacral nerve sheath tumors
  - nerve damage by surgery, radiation therapy
  - phantom limb syndrome
- Corticosteroids, decompression, neurolysis

Inflammatory Mediators

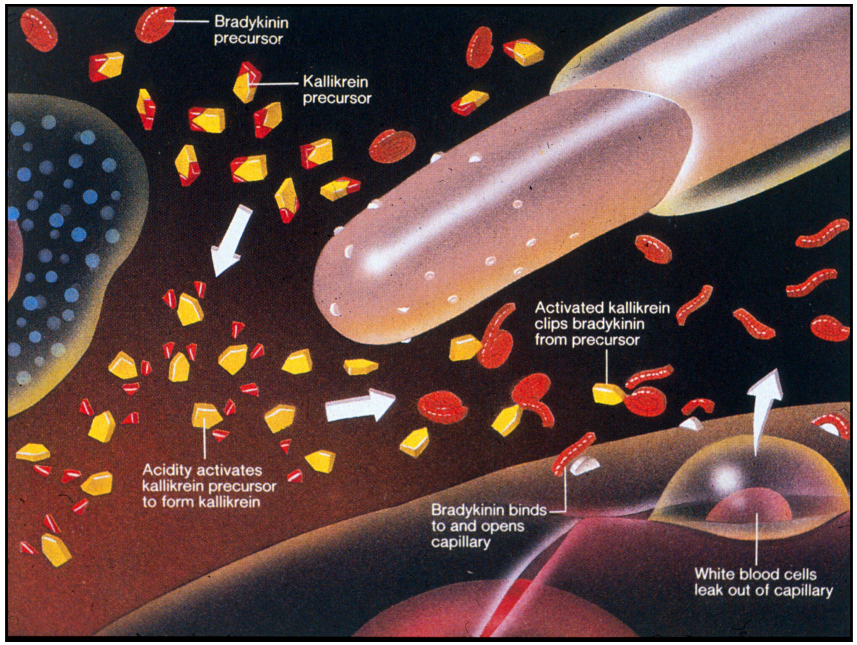
"Alogenic" mediators:

- Histamine, serotonin, bradykinins, leukotrienes, prostaglandins
- These are the forces of darkness!
- The mediators of death, disease and debilitation!



Inflammatory Cancer Pain

- Treatment of paraneoplastic syndromes
- NSAID's
- Corticosteroids



Paraneoplastic Syndrome

- Loretta and Susie
  - 11 yr old Plott Hounds
  - Guess which of these pups has the renal adenocarcinoma?
- Symptomatic and supportive therapy

Primary Therapy

- Tumor removal or reduction
- Surgery, Radiation therapy, Chemotherapy
- Treat paraneoplastic syndromes, infections
- Prognosis, costs, quality of life are focal issues determining willingness to treat

Curative or Palliative

- Tumor removal/ Reduction
- Definitive therapy / Supportive care
- Amputation / Limb sparing surgery
- Perioperative analgesic therapy
- Combined strategies:
  - surgical excision, radiation therapy, chemotherapy, immunotherapy

WHO Treatment Strategy for Cancer Pain

- Relies on intensity and severity rather than the mechanism or etiology
- Individualized and titrated management
- Escalation of analgesic strategies
- Three (or four) levels of intervention
  - mild, moderate, severe, (refractory)

WHO Analgesia Ladder

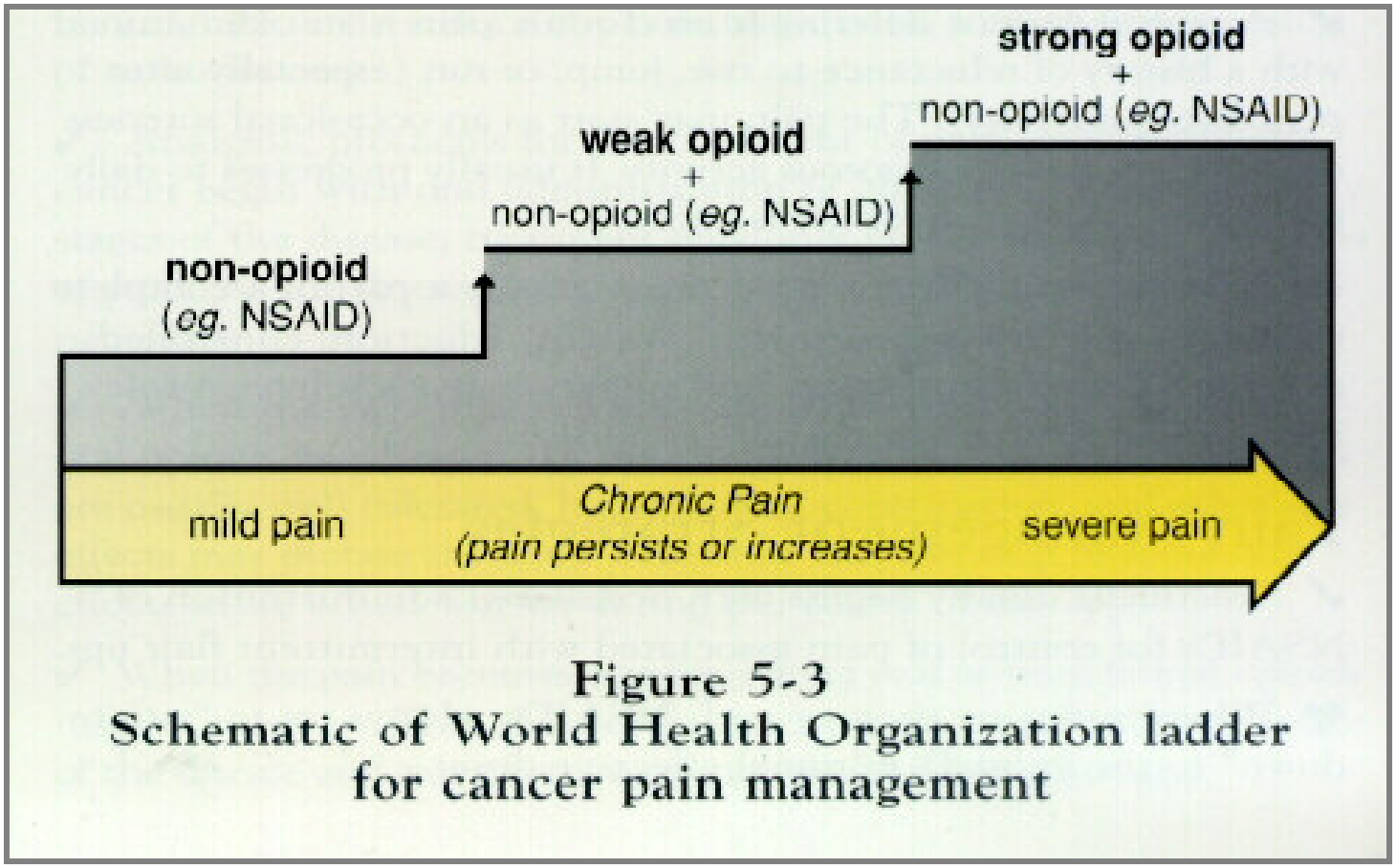


Figure 5-3
Schematic of World Health Organization ladder for cancer pain management

Step one - Mild Pain

- NSAID's, acetaminophen (dogs only!)
  - aspirin, phenylbutazone, naproxen, piroxicam, meclofenamic acid
  - carprofen (Rimadyl), etodolac (Etogesic), deracoxib (Deramaxx), meloxicam (Metacam), tepoxalin (Zubrin), Previcox, etc.
    - many individual options for dogs and cats
- +/- adjuvants (some are GI protective)
  - misoprostol, H_2 blockers, H^+ blockers

Step two - Moderate Pain

- NSAID's plus mild opioids, many options
- Add low dose weak or partial agonist opioids
  - acetaminophen plus codeine, aspirin plus codeine
    - 30 or 60 mg codeine plus 300 mg aspirin or acetaminophen (dogs only)
  - Partial agonists (buprenorphine)
  - Agonists/Antagonists (butorphanol) controversial
  - Tramadol (Ultram tablets)
- +/- adjuvants: as above (NSAID's plus mild opioids) and…
  - antiemetics, antihistamines, corticosteroids, stool softeners, mood elevators, tranquilizers
  - These and others as needed - Always individualize therapy

Step three - Severe Pain

- Stronger opioid, perhaps added to NSAID
- morphine may be the best choice
  - sustained release oral formulations
    - 0.5 to 3.0 mg/kg, BID, variable bioavailability
  - tablets, syrups, suppositories
- fentanyl transdermal
  - transdermal patches (Duragesic) - extralabel
- +/- adjuvants as needed

Fentanyl (Duragesic) patches

- Strictly "off-label"
- Can be very useful for providing a consistent (basal) level of strong opioid analgesia
- Alternative to sustained release oral morphine
- Precautions important

Step four - Refractory Pain

- terminal pain patients
- alternative routes of delivery
  - neuroaxial, continuous infusions
- alternative analgesics
  - NMDA antagonist, alpha-2 agonists
  - GABA-pentin (Neurontin)
- interventions
  - blocks, neural stimulations (TENS), neurolysis
- euthanasia

Cancer Pain Fundamentals

- Understand the disease and extent
- Recognize the cause and importance of each pain that is recognized
- Consider diverse management options
- Staged pain management approach
- Titrate, adjust and balance care in order to maintain the best quality of life

Unwanted drug effects

- anticipate, monitor and manage
- monitor for toxicities - CBC, chemistries
- sedation frequently occurs early in pain therapy
  - wait for a few days for tolerance, reduce dose
- constipation
  - stool softeners, bulk laxatives
- GI toxicity of NSAID's
  - monitor for loss of appetite, etc.
  - change drugs, protect with misoprostol, etc.

Palliative Care Includes Planning for Death

- Progression of disease may lead to:
  - unmanageable pain
  - unmanageable drug-effects
- Toxicities from therapy
- Concurrent diseases
- Euthanasia is a part of cancer care

Terminal care - "hospice care"

- Can be the most appreciated part of our interaction with the owners and animals

- When the time comes…euthanasia relieves pain and suffering

Maintain Quality of Life

- Appetite
- Activity
- Involvement
- Function

Case study: Tesla - 133355

- 8 year old male

- Rottweiler
  (and a very nice one too!)
- Lame, with swelling of distal left antibrachium
  Owner first noticed this late in April

Case study: Tesla - 133355

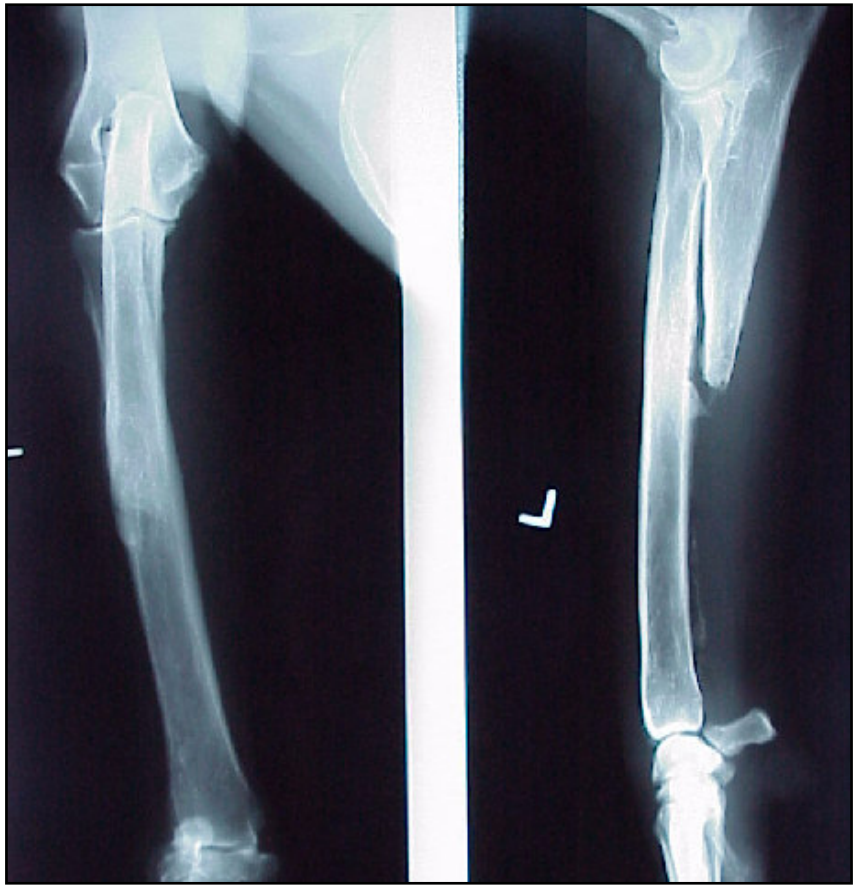
- Osteoblastic/osteolytic mass in distal ulna
  - Radiograph on April 27
  - Refer and confirm on May 8
- Biopsy confirmed osteosarcoma
  - Biopsy on April 28
- Otherwise in good health
  - Hx rear lameness, poor tolerance for carprofen

Tesla - 133355

- Limb-sparing ulnectomy
  - resection of mid-body of left ulna and styloid May 9
- Operative analgesia:
  - morphine (pre and post), brachial plexus block
- Sent home on antibiotics and Rimadyl (now tolerated)
  - carprofen 100mg q12h
- Scheduled for chemotherapy (cisplatin) and rechecks…

Tesla - 133355

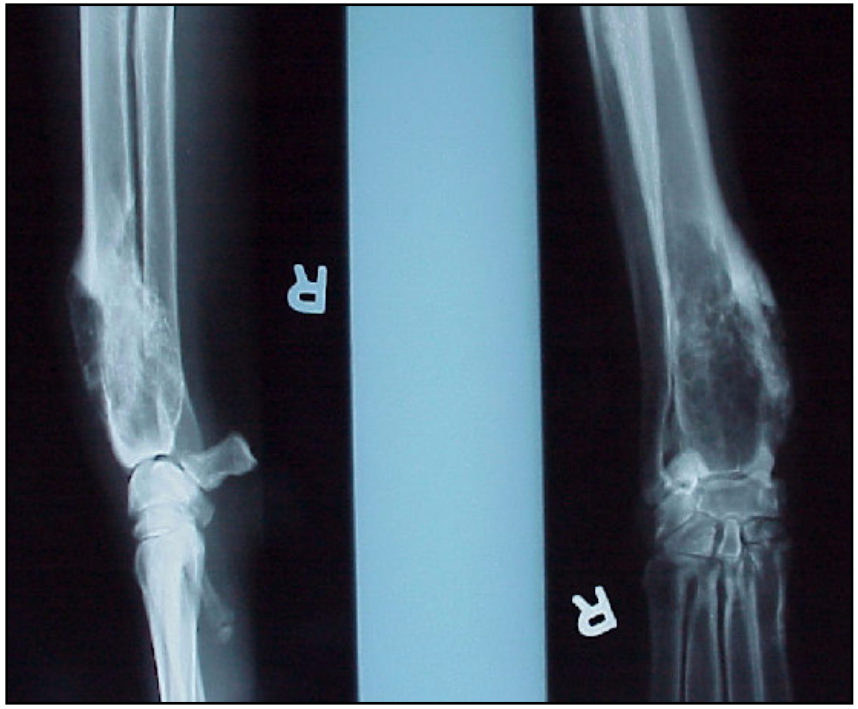
- Left forelimb functionally sound (August 11)
- Radiologists suspect some forces of darkness are at work…
- But not a problem as far as Tesla is concerned
- Pain management rated “good” by owners with the NSAID and no adverse effects

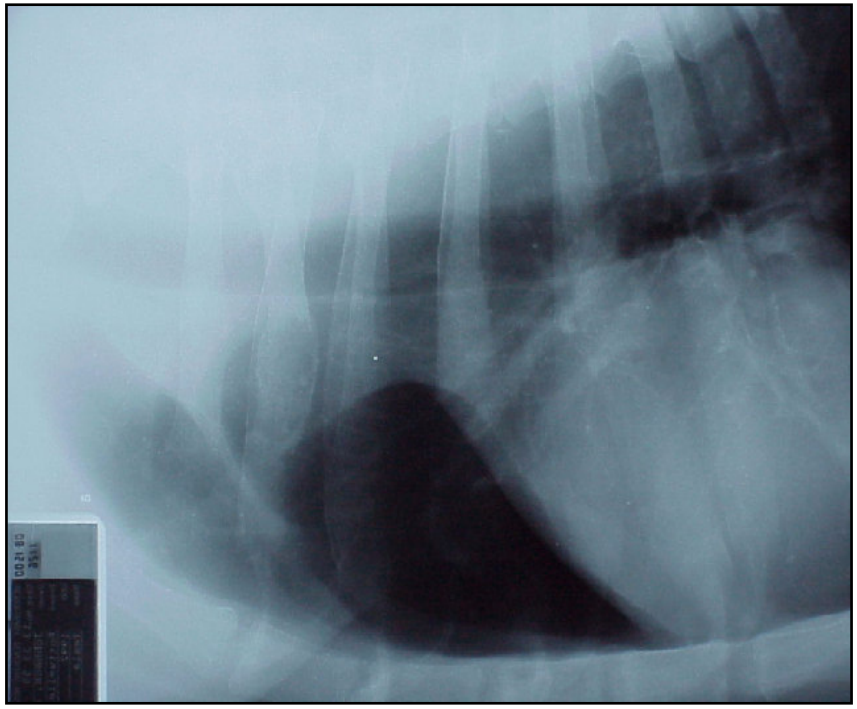


Tesla - 133355

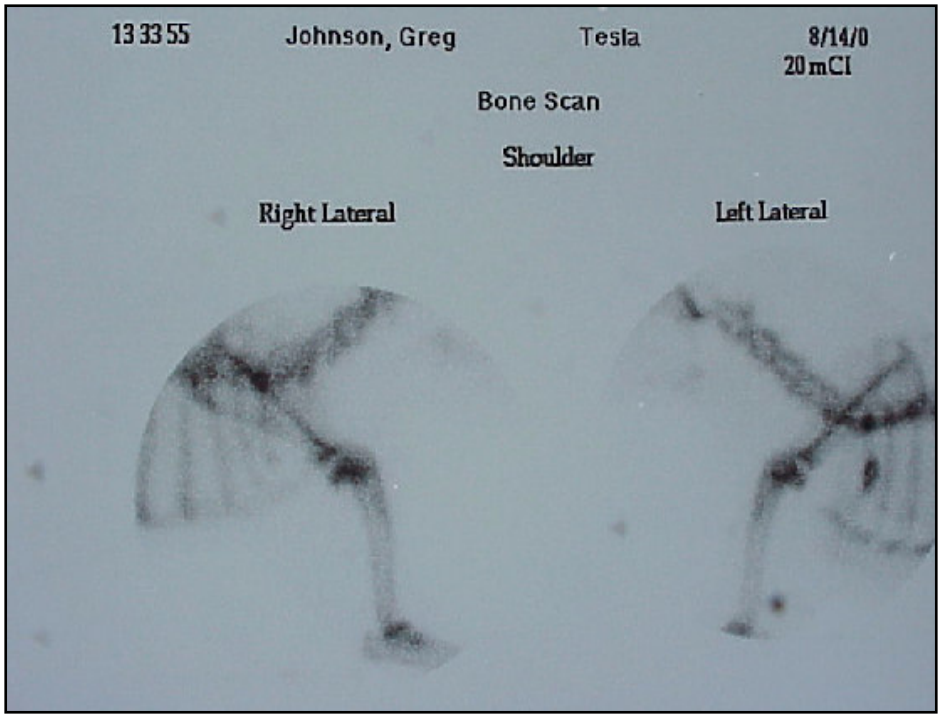
- Radiography at rechecks and chemotherapy sessions ultimately revealed bony lesions involving right forelimb and ribcage
- Bone scan (scintigraphy) confirmed metastatic disease
- Pain management still rated as “good” by owners with no adverse effects

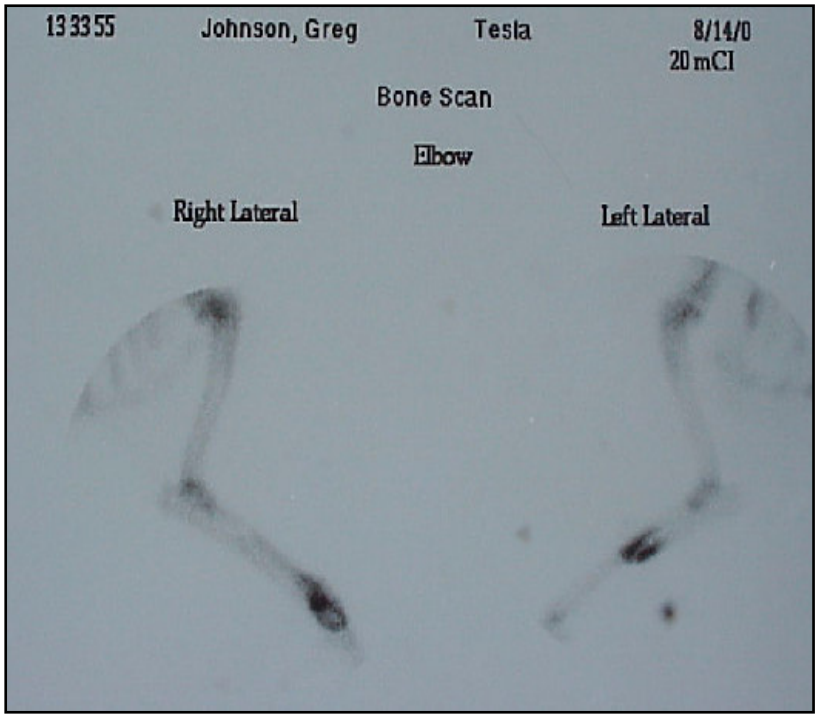
Tesla - 133355 Radiographs on August 11 & 15





Tesla - 133355

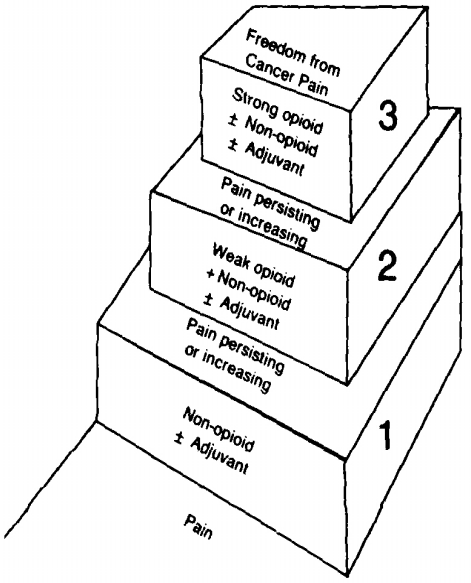




Bone scan (scintigraphy) confirmed metastatic disease August 14

Tesla - 133355

- Disseminated OSA
- No further chemotherapy
- Continue analgesics
- Last visit to UTCVM
  - August 15
- Periodic consultations with referring DVM for management of Tesla's cancer pain



(WHO, 1986)

Tesla - 133355

- Now four months post ulnectomy (September)
- Lameness, lethargy now reported
- Rimadyl is no longer providing adequate analgesia
- Morphine sustained release tablets added
  - 30 mg q12h added to the Rimadyl
    - (Sedation was noted at the initial 60 mg dose)
    - (Evidence for bioavailability in this dog)
  - Excellent results, active and happy dog

Tesla - 133355

- Morphine SR 30 mg q12h
- Rimadyl 100 mg q12h
- Consistent pain relief - reported as “very comfortable” for an additional 3 months after the addition of oral morphine-SR
- Effective pain control returned Tesla to his role in the human-animal bond as a fully functional pet

Tesla - 133355

- January 13 - nine months after diagnosis
- Presented for acute deterioration (two days) weakness and lethargy, pale mucous membranes, development of increased swelling/edema
- Owner elects euthanasia
- Termination of the human-animal bond by euthanasia calls for the utmost sensitivity and skill
  - That topic deserves another discussion!

Cancer Pain Management

Center for the Management of Animal Pain