

Advanced Pain Management in Dogs and Cats



 BluePearl
Pet Hospice



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Agenda

More than NSAIDs and opioids

Pharmaceuticals

Non-pharmaceutical options

Case examples

Questions



DISCLAIMER

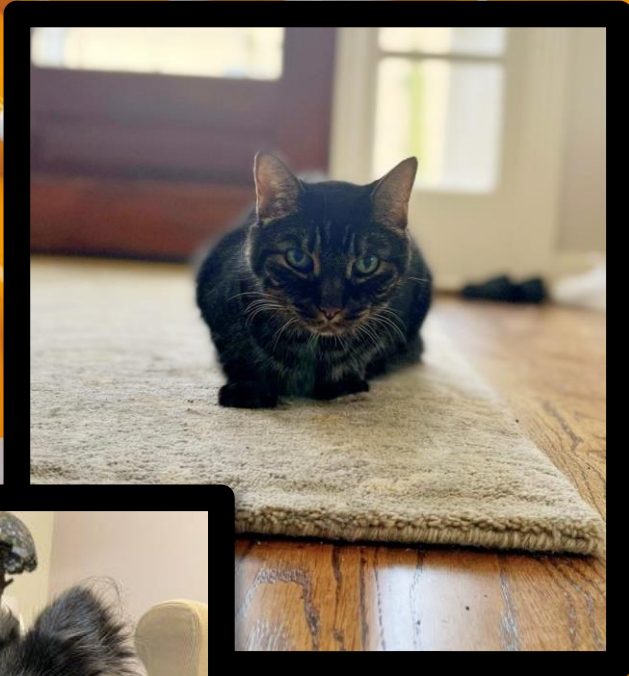
I have no conflict of interest in this presentation.

Some of my recommendations include off-label usage of medications. These are used in the best interest of our patients and many times anecdotal in nature.

**PAIN MANAGEMENT IS MORE
THAN NSAIDS AND OPIOIDS...**



**BUT WE STILL NEED
THEM!**



NSAIDs:

- Staple for arthritis management
- Dogs: carprofen, meloxicam and grapiprant
- Cats: low dose meloxicam, robenacoxib
- Piroxicam and meloxicam:
Anti- neoplastic properties

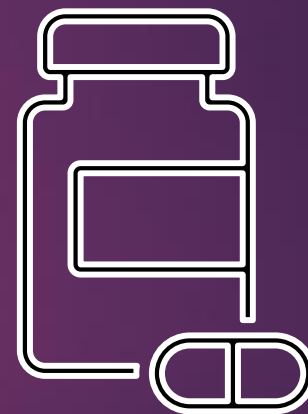
Opioids:

- Buprenorphine (most often used opioid in our practice for pain management)
- Still useful and necessary
- Want to strive for opioid sparing

Steroids:

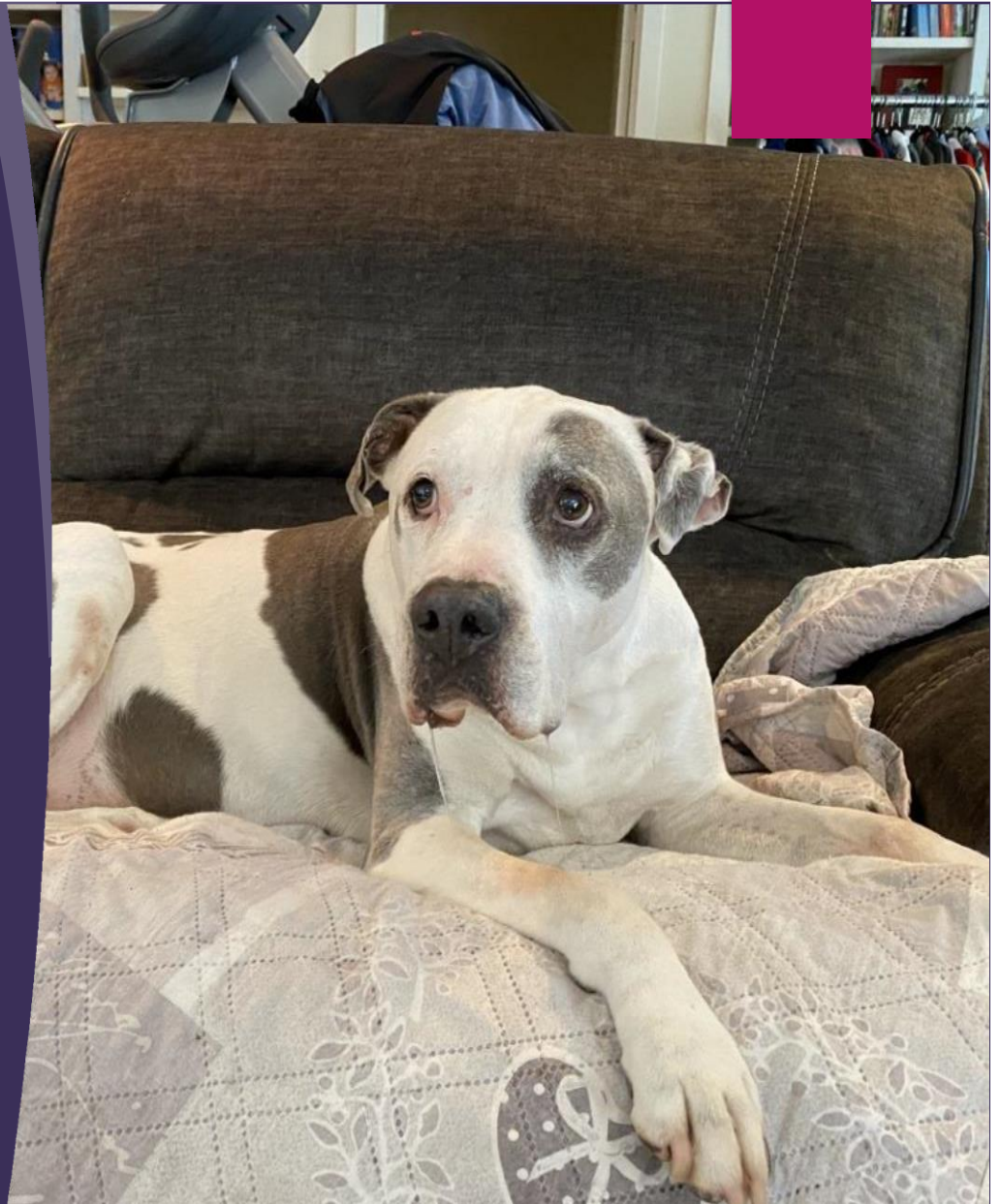
- Prednisone, prednisolone, dexamethasone
- Anti-inflammatory of choice:
Some animals with co-morbidities

Pharmaceuticals



Gabapentin

- ❖ Low and slow dosing
- ❖ Recommended dosing if naïve to the medication:
 - ❖ Start at 3-5 mg/kg per dose
 - ❖ Start with dosing once daily at night/bedtime
 - ❖ Increase to twice daily after 3-7 days depending on patient and pain level
- ❖ Side effects: sedation, ataxia
- ❖ Clients can be hesitant to try this medication again if their dog was prescribed a high dose and experienced sedation and/or ataxia
- ❖ Patient dependent
- ❖ Wide safety margin



NMDA Receptor Antagonists



How do they work?

When to use them?

Two drugs:

Amantadine

Ketamine



Amantadine

- ❖ Oral administration
- ❖ Best for chronic pain; would not choose for early OA
- ❖ Third in line for chronic arthritis after NSAID and gabapentin May take 2-3 weeks to see a difference, but some respond faster (even within a few days)
- ❖ Can be used in conjunction with ketamine
- ❖ Starting dose: 3-5 mg/kg IN THE MORNING; then q12h after 3-7 days of morning dosing
- ❖ For severe pain cases, consider q8h
- ❖ Side effects: Diarrhea, agitation





Ketamine



- ❖ SQ administration; dogs and cats
- ❖ Subanesthetic dose; In addition to oral medications
- ❖ Can be used in conjunction with amantadine
- ❖ Dose recommendation: 0.25 - 0.5 mg/kg SQ every 1 to 4 weeks
- ❖ Side effects: Sedation, dissociation (uncommon at this dose)
 - ❖ **GIVE BETWEEN THE SHOULDER BLADES**
- ❖ Excellent for use in osteosarcoma patients, chronic IVDD, and end-stage OA
- ❖ Anecdotal!

Before and after ketamine injection



Naltrexone

- Opioid antagonist
- Good oral bioavailability
- Low dose
 - Recommend start at 0.1 mg/kg
 - Plumb's: No low dose recommendations
 - Once daily in the evening; can increase up to q8h
- Chronic neuropathic pain
- Used in people for chronic neuropathy
- Use for: chronic lick granulomas, degenerative myelopathy
- *New use in animals – stay tuned!



Acetaminophen/acetaminophen combinations

- ❖ Acute on chronic pain
- ❖ DOGS ONLY (never in cats – Tylenol is toxic for cats!)
- ❖ Osteosarcoma
- ❖ End stage arthritis
- ❖ Breakthrough pain
- ❖ For hydrocodone 10 mg/acetaminophen 325 mg:
 - ❖ Our recommendation:
 - ❖ Dose by the acetaminophen at 10 mg/kg PO q6-8h (up to 15 mg/kg is safe)



Solensia (frunevetmab)

Monoclonal antibody therapy

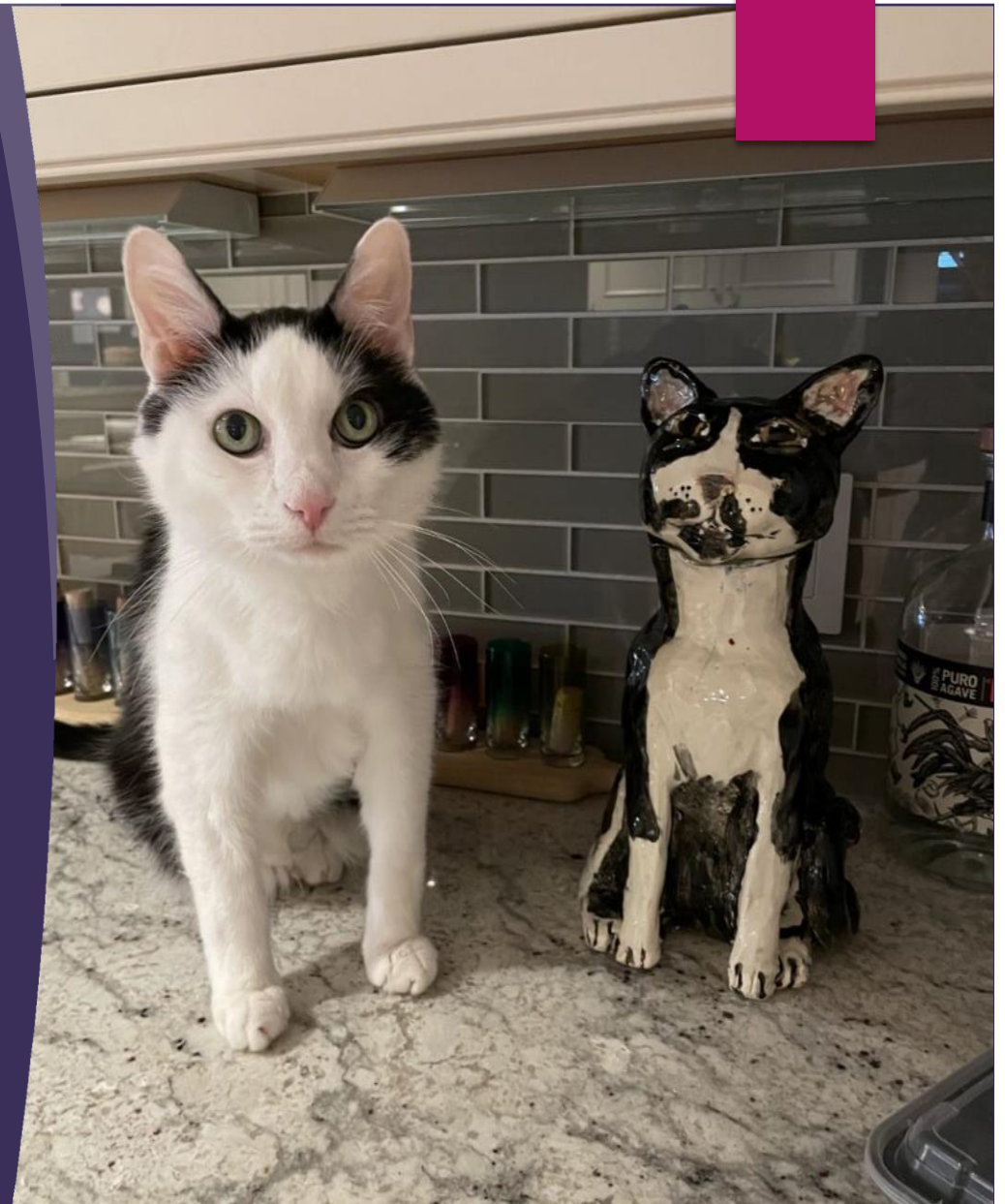
Once monthly injection

Recommend at least 3 months of therapy prior to discontinuing

EXPENSIVE

Side effects:
Itching at the injection site,
possible worsening CKD

*New therapy –
so far we see positive results!



Librela (bedinvetmab)

Canine monoclonal antibody-anti-NGF

I have not currently used in any patients

Recent lecture shows that some are seeing positive results

Anyone used it yet??



Adequan (PSGAGS)

Disease modifying osteoarthritis drugs

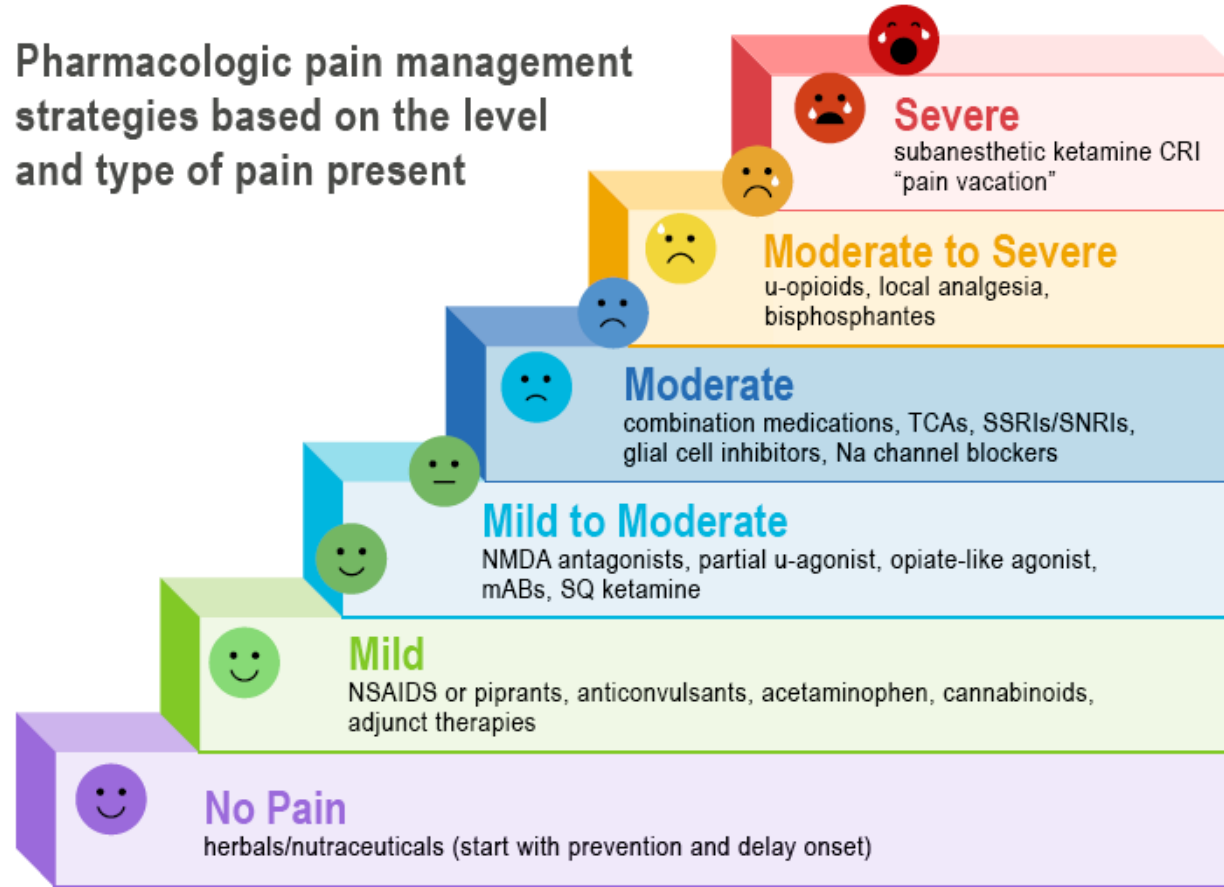
Used at label dose of 4.4 mg/kg SQ twice a week for 3 weeks.

Off label use giving SQ, have owners give at home, increase compliance.

Off label feline use same dosing



Pharmacologic pain management strategies based on the level and type of pain present



Alternative (non-pharmaceutical) modalities



Supplements

Assisi Loop (tPEMF)

Laser therapy

Acupuncture

Massage

Heat therapy



Case Examples

SIGNALMENT

HISTORY

DIAGNOSIS

MEDICATIONS
AND THERAPIES



"Sweetness"

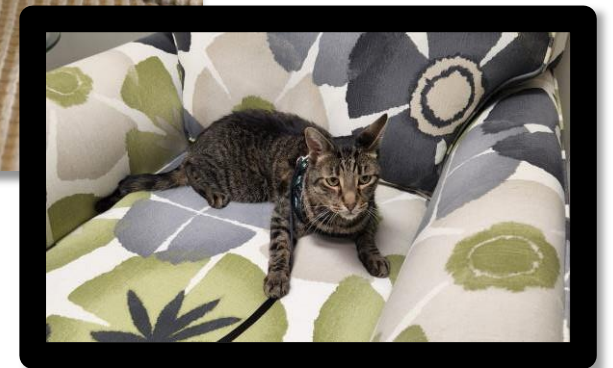
- Signalment: SF Golden Ret.; 12y; ~50 lbs
- History: RF lameness 9/2022; diagnosis of OSA on 12/5/2022
- Diagnosis: Right scapular osteosarcoma
- Elected hospice care on 12/13/2022
- Treatments and medications:
 - Original plan from pDVM: Carprofen, gabapentin,
 - Additional medications: Amantadine, hydrocodone/acetaminophen, ketamine injections weekly
- Euthanasia 5/1/2023



Ladybug and Sweetness

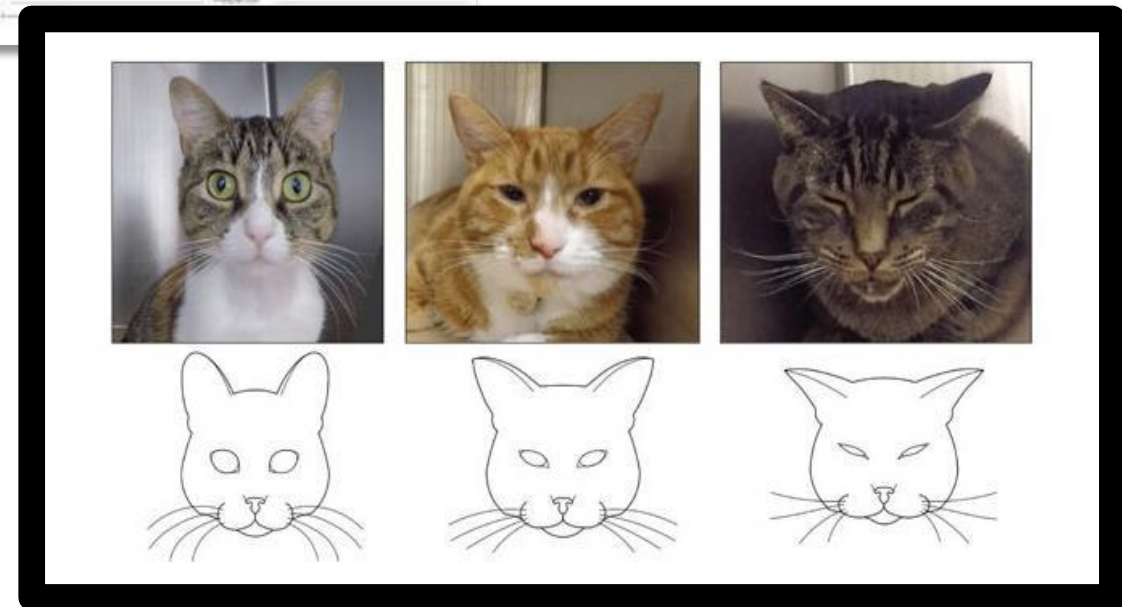
"Zodiac"

- Signalment: 7y MN feline, 9 lbs
- History:
Previous trauma — pelvis healed without surgical intervention
- Diagnosis: Chronic OA



"Zodiac" (cont'd)

- Treatments and medications:
 - Ongoing treatment for 2 years
 - Original plan:
 - Meloxicam 1-2 times per week, Adequan (twice per week for 4 weeks), gabapentin q12h, Cosequin daily
 - Current regimen:
 - Meloxicam two times per week, Cosequin daily, gabapentin AM, Antinol daily, Solensia q4weeks



Acute on chronic pain episode



"Ceilidh"

- Signalment: 12y, SF Golden Retriever, 85 lbs
- Care duration: 5/2021 --> peacefully euthanized at home 2/2023
- History: Hospice care elected after cancer diagnosis; euthanasia due to arthritis almost 2 years later



BEAP Pain Scale for Dogs

Many signs of chronic pain are non-specific.
Make sure to see your vet to rule out other diseases as a cause of these signs.



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0		<input type="checkbox"/> B: Breathing normally <input type="checkbox"/> E: Eyes bright and alert <input type="checkbox"/> A: Walks normally on all four legs; no lameness present <input type="checkbox"/> A: Engages in play and all normal activities	<input type="checkbox"/> A: Eating and drinking normally <input type="checkbox"/> A: Happy; interested in surroundings and playing; seeks attention <input type="checkbox"/> P: Comfortable at rest and during play; perky ears and wagging tail <input type="checkbox"/> P: Enjoys being touched and petted; no body tension present
1-2		<input type="checkbox"/> B: Breathing normally <input type="checkbox"/> E: Eyes bright and alert <input type="checkbox"/> A: Walks normally; may exhibit very subtle lameness when walking <input type="checkbox"/> A: May show first signs of being just a little slower to lie down or rise up (subtle)	<input type="checkbox"/> A: Eating and drinking normally <input type="checkbox"/> A: Happy and engaged, may seem a little more subdued with some "off" moments interspersed with normal behaviors <input type="checkbox"/> P: May show occasional shifting of position; tail may be down just a little more, ears slightly flatter <input type="checkbox"/> P: Enjoys being touched and petted; no body tension present
3-4		<input type="checkbox"/> B: May pant intermittently <input type="checkbox"/> E: Eyes slightly duller in appearance; can have a slightly furrowed brow <input type="checkbox"/> A: Noticeably slower to lie down or rise up; may exhibit lameness when walking <input type="checkbox"/> A: May be slightly unsettled and more restless; difficulty getting comfortable; shifting weight	<input type="checkbox"/> A: Appetite more finicky, such as wanting only treats or "people" food <input type="checkbox"/> A: Subdued; engages less or does not initiate play <input type="checkbox"/> P: Difficulty squatting or lifting leg to urinate, subtle change in posture; tail more tucked and ears more flattened <input type="checkbox"/> P: Does not mind touch except on painful area; turns head to look where touched; mild body tension
5-6		<input type="checkbox"/> B: Panting often noted, possibly with an increased breathing effort <input type="checkbox"/> E: Dull eyes, worried look <input type="checkbox"/> A: Very slow to rise up and lie down; hesitation with movement; difficulty on stairs; reluctant to come when called; more obvious lameness <input type="checkbox"/> A: Not eager to interact but may be in tune with surroundings; obvious lameness when walking; may lick painful area	<input type="checkbox"/> A: Will frequently lose appetite <input type="checkbox"/> A: Anxious or restless; unable to settle or sleep well <input type="checkbox"/> P: Abnormal weight distribution when standing; difficulty posturing to eliminate; arched back, tucked belly; head hanging low; tucked tail; frequently shifts positions; ears more flattened <input type="checkbox"/> P: Pulls away painful area when touched; moderate body tension when being touched
7-8		<input type="checkbox"/> B: Faster breathing rate with more noticeable effort; frequent panting episodes common <input type="checkbox"/> E: Dull eyes, may also have distressed look <input type="checkbox"/> A: Obvious difficulty rising up or lying down; will not bear weight on affected leg; avoids stairs; obvious lameness <input type="checkbox"/> A: Avoids interaction with family or environment; will often "go off" or hide; may frequently lick painful area	<input type="checkbox"/> A: Loss of appetite; may not want to drink <input type="checkbox"/> A: Agitated, fearful, worried, reclusive, potentially aggressive <input type="checkbox"/> P: Tail tucked, ears flattened or pinned back; abnormal posture when standing; more hesitant to move or stand <input type="checkbox"/> P: Significant body tension when painful area touched; may vocalize in pain; guards painful area by pulling away or changing position
9-10		<input type="checkbox"/> B: Panting; increased breathing rate and effort <input type="checkbox"/> E: Dull eyes; may have panicked look <input type="checkbox"/> A: May refuse to get up; may not be able to (or willing to) take more than a few steps; will not bear weight on painful limb <input type="checkbox"/> A: Difficulty in being distracted from pain, even with gentle touch or soothing voice	<input type="checkbox"/> A: No interest in food or water <input type="checkbox"/> A: Extremely depressed or minimally responsive ("flat out"); may vocalize in pain; in distress at rest <input type="checkbox"/> P: Prefers lying position or being on side; flat or pinned ears; may prefer to be very tucked up or stretched out <input type="checkbox"/> P: Severe body tension when touched; will not tolerate touch of painful area; becomes fearful when other areas that are not painful are touched

Specific behaviors or physical changes I see:

Breathing: _____ Appetite: _____
 Eyes: _____ Attitude: _____
 Ambulation: _____ Posture: _____
 Activity: _____ Palpation: _____

"Ceilidh" (cont'd)

➤ Diagnosis:

- Hepatic carcinoma
- Bilateral CrCL SX with secondary OA

➤ Bilateral coxofemoral OA

➤ Treatments and medications:

- Oral: grapiprant, amantadine, gabapentin
- Acupuncture and laser therapy
- Weekly SQ ketamine

"Luminou"

- Signalment: 18.5 y FS Ragdoll, 5.5 lbs
- History: Sought care for CKD in 10/2021 (video 12/2021)
- Diagnosis: CKD, aortic stenosis, OA
- Not easily medicated
- Pain management plan:
 - Originally: Adequan loading dose, laser therapy, transdermal gabapentin
 - Currently: Adequan weekly, laser therapy, Solensia monthly



Questions?



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