

History of the Case

Name: Mocha Burgess

Age: 8.5 yo

Breed: Akita

Sex: Female

Altered: Yes

Dog's lifestyle/occupation: Home pet and family dog

Brief history of dog's family history: Owner has owned since puppy and is currently living with 4 owners.

Brief history of problem in which dog is referred for:

About a month ago she was outside at night and she all of a sudden couldn't get up. We took her to the ER that night. She was brought to Dr. Jones and an MRI was completed. Two days prior she was walking in the woods and she slipped 3-4x, but appeared fine. She has since been on a strict diet to lose weight. She has been improving slowly and we have been doing exercises that the DVM gave us with the HLs. She has been lying on both sides. We have a lot of hardwood floors and have put in runners for her.

Interventions (i.e. medication, restrictions, exercise, rest, etc.):

▪ **Medication:**

1. Carprofen 150mg evening of 2/20/18
2. Buprenorphine morning of 2/21/18
3. Gabapentin

Referring veterinarian's diagnosis: Bi HL paraparesis, multiple degenerative intervertebral discs w.out significant compression, possible FCE/ANNPE as cause for acute signs on 2/20/18

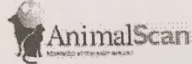
Test Results:

- **MRI:** See Report on next page

Surgery: None

Past medical history: None

MRI Report:

	AnimalScan
MRI Report February 22, 2018 - 08:04	
Patient Name: BURGESS MOCHA	Clinic: SNHVRH
Owner: DAVID	ADVM: JONES
Species: CANINE	Modality: MRI
Breed: AKITA	Patient ID: A73004
Age: 8	Gender: SF
Exam: T3-SACRUM	Exam Date: 02.21.2018

History:
Mocha, an 8.5 year old female-spayed Akita, was presented to SNHVRH's Neurology service on 2/21/18. On the evening of 2/20/18, Mocha went outside unsupervised (fenced yard) and was found unable to stand shortly thereafter. Mocha has otherwise been healthy recently. Mocha received 150mg carprofen the evening of 2/20/18 and was given buprenorphine at 9:40am prior to transfer to SNHVRH.

Radiographic Findings:
Standard multiplanar MR images of the thoracolumbar spine are reviewed. The study includes T2, STIR and pre- and post-contrast T1 images made prior to and following intravenous administration of gadolinium contrast.

On the T2 and FLAIR images, the spinal cord has uniform normal appearing intermediate signal intensity appropriate segmental diameter. On the STIR and post-contrast fat suppressed images, abnormal areas of meningeal, parenchymal or epidural enhancement are not identified. Additionally, no areas of spinal cord swelling are identified. There are multifocal chronic appearing intervertebral disc herniations that are seen since T6-7, T9-10, T11-12, T13-L1, L2-3 and L4-5. None of these result in clinically significant spinal cord compression.

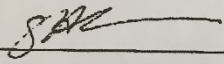
There are greater chronic appearing disc. The cauda equina nerves are dorsally displaced on the right. No change in size or signal intensity. L7-S1 causes mild-to-moderate narrowing. Foramina stenosis is not seen in associated spine, there are varying degrees of moderate articulations. Multifocal spondylosis deformans.

Conclusion:

1. No macroscopic thoracolumbar spinal cord compression.
2. Multifocal degenerative intervertebral disc herniations.
3. Mild impingement on the cauda equina nerves with evidence of neuropathy.

AnimalScan	Patient: BURGESS MOCHA
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Given the clinical presentation, an ischemic event affecting the thoracolumbar spinal cord could be considered. A small percentage of these do not result in signal intensity or size change in the spinal cord, especially in the early phases. Another cause for this clinical presentation is not identified. CSF analysis could be considered to exclude the possibility of microscopic diseases, but these are considered unlikely. With an ischemic event, clinical improvement would be expected within the initial 24-72 hours. If there is stasis or progression of the clinical signs, a repeat MRI may be needed.


Shannon Holmes, DVM, MSc, Dip. ACVR

Evaluation

March 21, 2018

Observation

Overweight, flat topline, skin intact

Palpation

No tenderness

Posture

- **Standing:** Wide BOS, hips extended, weight shifted fwd, difficulty standing still
- **Sitting:** Prefers R side sitting, but shifted to other side 2x during evaluation

Functional Mobility

- **Stand > Sit:** Poor eccentric control, increased FL use, RH tendency to adduct causing R side sitting, max assistance required to get HL in proper position
- **Sit > Stand:** Difficulty completing, increased FL use, able to complete independently, max assistance required to get HL in proper position

Gait Assessment

- **Walk:** Ataxic, reciprocal gait, stiff Bi HL w. minimal joint movement of hips/stifles/hocks, independent for 20sec
- **Trot:** NA

PROM

Bi HL and FL WNL

Flexibility

Mild Bi HS tightness, Bi FL extension tightness

Circumference Measures

NA

Neurological testing

- **Deep pain responses:** NA, will complete nv
- **Flexor withdrawal:** NA, will complete nv
- **CP s:** NA, will complete nv
- **Tail wag:** Intact
- **Active movement:** Intact
- **Contenance:** Owners report Mocha is continent
- **Knuckling at gait:** None noted

Pain

2-3/10 (Matthews, K.A., Pain assessment and general approach to management, Management of Pain, The Veterinary Clinics of North America, Small Animal Practice, July 2000, p. 729-755)

Assessment

Mocha is an 8.5 yo SF Akita with Bi HL paraparesis, multiple degenerative intervertebral discs w/out significant compression, and possible FCE/ANNPE as cause for acute signs on 2/20/18. She presents w. Bi HL weakness, decreased HL WB, ataxic gait, difficulty with positional transitions, resolving paresis of the hind end, and sensitivity of hind limbs and trunk. Due to these deficits, she would benefit from skilled physical therapy 1-2x/wk for 10-12 wks to return functional mobility. Please see below for PT Goals and treatment strategies.

Problems

Hind limb paresis & weakness

Core & trunk weakness

Ataxic gait

Decreased overall mobility with difficulty in positional changes

Minimal atrophy of Bi HL musculature

Decreased muscle flexibility

Poor Functional Strength

Potential for reoccurrence

Overweight

Goals

1. Improve flexibility of Bi FL/HL to WNL
2. Minimize ataxic gait
3. Encourage WBing of Bi HL in stand and sit positions for increasing trunk stability
4. Increase balance reactions in all positions
5. Regain muscle strength of Bi HL
6. Increase motor control from stability postures into mobility patterns of positional changes and gait
7. Develop home exercise program (HEP)
8. Educate owners regarding neuro-facilitation methods and sensory motor re-education
9. Promote neuro-regeneration and active movement return via developmental process of stability postures into controlled locomotion.

Treatment Plan

Massage throughout shoulders and Bi HL

Neuro-facilitation techniques to promote active movement

Encourage weight shifting and weight bearing onto Bi HL towards gait patterning

Mobility training at proper sitting posture and rising from sit and recumbent positions

LASER use to decrease pain, inflammation, and improve neuro-regeneration healing

Therapeutic exercises for strengthening Bi HL

Underwater treadmill progression to increase strength, WBing, flexibility, and endurance

Develop Home Exercise Program of owners carrying out ROM, Massage, neuro facilitation and stretching exercises

Harness use for safe transfers and gait training for walking at home as tolerated

Slowly allow dog to walk independently in small supervised area of house on nonslip flooring x 5 min intervals, as tolerated up to 4 times a day

Owner education re: Neuro-plasticity and care plan for paresis

Actual History of Treatment

March 21, 2018 (Eval)

Eval completed, Harness Fitting with a Help 'Em Up Harness for front/hind end, owners to complete exercises reviewed today for HEP.

March 29, 2018 (visit 1)

Subjective She's doing well. She seems a little better each day. The husband babies her at home though. He'll pick her up and use towel to have her walk around. Not walking on leash but she roams yard.

Objective **UWTM:** 20in water height, 1.2mph, 5min, independently
LASER: T/L-spine, Rx area 300cm², Dosage 10J/cm², Total Dosage 3000J, Continuous, Rx Time 5min
See Flow Sheet

Assessment Tolerated UWTM very well, but had difficulty exiting. She tripped over the lip. She did better if turned around then walked out slowly. Tolerated exercises well, but fatigued easily. Able to do 6 sit > stands then laid down. Difficulty with shake paw, but able to do them slowly.

Plan Increase controlled leash walking by 5 min 3-4x/day. Complete exercises reviewed today for HEP. Review shake paw nv before progressing exercises. Improve standing tolerance. Decreased assistance at home w. activities unless Mocha requires it.



Hip Extension Stretch

April 10, 2018 (visit 2)

Subjective She's doing well. She seems to be making steady progress. I don't think she's getting much for walks, but she is still walking around the yard on her own. The owner reports doing sit <> stands. Weight loss seems to be going well.

Objective **UWTM:** 19.5in water height, 1.2-1.6 mph, 10min, independently
See Flow Sheet

Assessment Tol UWTM very well. Increased Bi HL WB and step length. Improved tolerance for sit to stand. Is now able to do 8 without resting. Paw shakes were better, but only able to maintain for 4 sec. Overall improvement noted.

Plan Controlled leash walking 5-10min around the yard. Continue same exercises at home. Progress to exercises nv as tolerated.

April 19, 2018 (visit 3)

- Subjective** She's been doing really well. While owners were on vacation Mocha was walked 2x/day for 10min each time and the HEP was completed by the dog sitter.
- Objective** **UWTM:** 17in water height, 1.3-1.6 mph, 15min, independently
See Flow Sheet
- Assessment** Tol UWTM very well. Topline is getting flatter. Improved WB in Bi HL. Tol ex well.
- Plan** Increase controlled leash walking to 15min and complete exercises reviewed today for HEP. Review same exercises nv and progress if appropriate.

April 24, 2018 (visit 4)

- Subjective** She's been doing well. Have been hearing a clicking noise from her back end as she walks. Still giving her gabapentin. Walking 15min 2x/day. HEP going well. Doing the couple of stairs onto the deck now.
- Objective** **UWTM:** 17in water height, 1.5-1.7 mph, 20min, independently
See Flow Sheet
- Assessment** Tol UWTM and ex very well. Decrease difficulty getting up and down. Able to carry head higher. Poor spinal flexibility R>L.
- Plan** Increase controlled leash walking to 20min 2x/day, including uneven terrain practice. Complete spinal flexibility exercises Bi at home w. nose towards hind end. Continue same HEP.



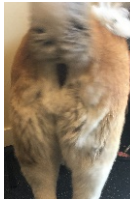
Cavaletti

May 09, 2018 (visit 5)

- Subjective** She's been doing really well. Been very active. We were up in Maine so she got to walk on the beach and in the water. Owners have been doing the couple of stairs on the deck better and have been walking Mocha 20min 1x/day. "She has been getting back to normal." HEP going well.
- Objective** **UWTM:** 17in water height, 1.7-2.0 mph, 25min, independently
Ther Ex/HEP: Not completed secondary to owner being late to the appointment.
- Assessment** Tol UWTM well and has a good stride with improved WB Bi HL. There was less shaking in the hind end during the session. Mocha continues to hold head up higher.
- Plan** Progress to balance and stability exercises nv.

May 16, 2018 (visit 6)

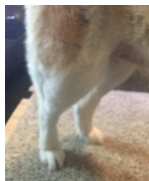
- Subjective** She's doing really well. Has been walking daily, including a few 25-30min walks on a trail that had some hills and objects to step over. Owners notice she wants to spend more time outdoors and she chased a squirrel, which she hasn't done in a long time.
- Objective** **UWTM:** 16in water height, 2.0 mph, 25min, independently
See Flow Sheet
Weight: 122 lbs
- Assessment** Bi HL inconsistently shake, changing sides throughout session. Is PWB Bi HL L>R, changing sides throughout session. Owner reports a significant weight reduction of at least 15 lbs since last being weighed at the DVM. Hind end continues to be atrophied. While sitting there is improved eccentric control initially, then the hind end lowers quickly w. Bi hip flex and stifle/hock ext.
- Plan** Re-eval nv. HEP same with a focus of even WB of Bi HL and elevating the head. If time allows nv, do either UWTM or stability ex.



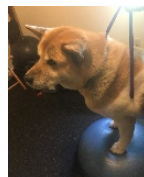
LH PWB

May 23, 2018 (visit 7)

- Subjective** Working on getting her head higher. She has more energy and is more active. The owners reports hearing a clicking in the back after 20min of walking. She made it up the stairs
- Objective** **UWTM:** 16in water height, 2.0 mph, 15min, independently
See Flow Sheet
Re-assessment: CPs=All 4 limbs WNL, R stifle crepitus, Bi stifle ROM=55deg (Mocha resisted Bi ROM), T-L junction tenderness, Bi HL shaking, even weight distribution while standing during most of the session in the HL.
- Assessment** Improved sitting posture. Mocha sat square x2 during session and frequently did side sitting, without preference to a side. Improved standing posture with better weight distribution in the HL with increased weight shift toward the hind end. Improved topline but continues to have core weakness. Shaking of the hind limbs was consistent throughout session.
- Plan** Recommended to owner to continue PT for 1x/wk for 3 weeks to improve strength of the hind limbs and core, stability, Bi stifle ROM, and spinal tenderness.



Wobble board



Bosu

