

## Letter From the President

Jenna Encheff, PT, PhD, CMPT, CERP

In October, I was able to attend the Strategic Planning Meeting for the Academy of Orthopedic Physical Therapy in La Crosse, Wisconsin. This meeting was a gathering of the AOPT Officers, Directors, Committee Chairs, SIG Presidents, and AOPT staff to review and discuss the Mission, Vision, and Goals of the AOPT, and revise and add, if needed, to best serve our members, clients, and community. One of the main points of discussion and themes this year was inclusion. As the largest Section/Academy of the APTA, it is imperative that our members and the physical therapy community at large know that we strive for diversity in all aspects of our Mission, Vision, and Goals. As a new-ish officer of the Animal Rehabilitation Special Interest Group, I must say that I felt immediately welcomed by this group of passionate professionals. My input regarding the AOPT Strategic Plan as it may apply to animal rehabilitation was taken into consideration thoughtfully and respectfully, and I absolutely felt as if I had a voice for the over 400 members of the ARSIG. As those of us who treat animals continue to strive for inclusion and support in each of our respective states and practice acts, please know that the AOPT does support our mission and inclusiveness. The below patient case highlights the importance of animal rehabilitation.

## A Vestibular Case Study

Kaitlyn Arnsdorf, PT, DPT

### Signalment

**Name:** Sassy

**Age:** 14 years

**Breed:** Golden Retriever

**Sex:** Female, spayed (after having 3 litters)

**Working/sporting history?** Competed in agility, obedience, and field trials until age 11.

**Clinical presentation (brief history of the problem):** Sassy presented with insidious onset of spontaneous nystagmus and a head tilt to the right on March 10, 2019 (10 days prior to initial evaluation by physical therapy on March 20, 2019). Sassy was seen by her regular veterinarian 2 days after onset and was prescribed Dramamine to manage vestibular symptoms. Sassy's vet referred her to rehabilitation to help manage her head tilt, nystagmus, and difficulty walking without consistent loss of balance (LOB).

### March 20, 2019 – Evaluation

**Subjective:** Observation: alert and responsive with significant head tilt to the right, spontaneous nystagmus has resolved without use of Dramamine (indicating it is now appropriate to begin vestibular rehabilitation).<sup>1</sup>

#### Objective:

**Gait assessment:** No lameness noted but decreased cervical dissociation due to significant muscular guarding in right shoulder and neck, and head tilt present throughout gait cycle. Significant

unsteadiness noted during transition from stance to swing phase with decreased stance time on the right vs. left.

**Modified Clinical Test of Sensory Interaction in Balance (MCTSIB):** eyes open hard surface: no LOB.

Eyes open on compliant surface: mild LOB and increased postural sway requiring contact guard assist (CGA) from physical therapy.

Eyes closed on firm surface: mild LOB and increased postural sway requiring CGA from physical therapy.

Eyes closed on compliant surface: patient unable to balance without maximum assist from physical therapy.

**Active Range of Motion (ROM):** Decreased cervical rotation ROM bilaterally, with left showing greater restriction than right and decreased cervical extension.

**Passive ROM:** Decreased right shoulder flexion and extension (flexion > extension).

**Neurological testing (all appropriate neurological testing, results, and meaning of the outcomes):** Diminished upregulation of vestibular system, as seen by MCTSIB testing; deep pain and light touch sensation intact.

**Treatment:** Manual therapy consisted of dorso-ventral mobilizations to cervical spine and passive ROM of bilateral shoulders.

**Assessment:** Due to the patient's inability to perform diagonal leg lifts without LOB, the exercise was regressed to single leg lifts. Once she became comfortable and showed increased stabilization with single leg lifts, then diagonal leg lifts were reinstated.

Owner given diagonal leg lifts, cervical and bilateral shoulder ROM as home exercise program (HEP).

**Problems:** Decreased balance, decreased cervical and right shoulder ROM.

**Goals:** Increase stability on stable surfaces → progress to unstable surfaces, increase cervical and shoulder ROM.

**Plan:** Plan to focus on improving upregulation of vestibular system in upcoming sessions as well as focusing on reducing hypomobility of the cervical spine. Owner given diagonal leg lifts and cervical and bilateral shoulder ROM as HEP.

### March 27, 2019 (visit 2)

**Subjective:** Owner states she noticed improvement in Sassy's neck after her first physical therapy session.

#### Objective:

**Manual intervention:** Passive ROM to bilateral shoulders, instrument-assisted soft tissue mobilization (IASTM) to cervical paraspinals, active ROM cervical rotation, dorso-ventral mobilizations to cervical spine.

**HEP:** Owner given balancing on disc with front feet for 30 seconds working up to 1 minute, cervical and bilateral shoulder ROM.

**Gait:** No longer displays head tilt, head continues to be lowered.

**Assessment:** Was able to progress balance training to unstable surface as owner was diligent about doing narrow base of support training in the form of diagonal leg lifts, with only occasional LOB. Sassy showed some reluctance with exercise and had increased postural sway but improved with each set.

**Remaining problems and goals:** Hypomobile lower cervical spine and right shoulder, decreased balance.

**Plan:** Continue therapy once a week.

#### April 7th, 2019 (visit 3)

**Subjective:** Owner states she notices Sassy slowing down when having to make turns or coming in from the yard; in the dark she is unsteady.

**Objective:**

**Manual intervention:** Passive ROM and stretching to bilateral shoulders, IASTM to cervical paraspinals, active ROM cervical rotation, dorso-ventral mobilizations to cervical spine.

**HEP:** Owner given balancing on disc with front feet for 1 minute, cervical and bilateral shoulder ROM.

**Gait:** No head lowering this session; decelerates more than normal with turns and deviates from trajectory.

**Assessment:** Decreased hypomobility noted in cervical spine in this session indicating increased muscle length and decreased guarding of cervical paraspinals as well as improved joint play confirmed with increased tolerance and mobility noted during dorso-ventral mobilizations. Progressed duration of unstable surface training with front legs and Sassy had no LOB in this session requiring assistance from the physical therapist. She is also demonstrating improved upregulation of the vestibular system due to her improved gait pattern and ability to balance for brief durations on an unstable surface without LOB and with diminished cranio-caudal sway.

**Remaining problems and goals:** Progress balance exercises to all 4 limbs on unstable surface.

**Plan:** Continue therapy until patient can tolerate being on a compliant surface without visual feedback (ie, blindfolded) and have no LOB.

#### April 15th, 2019 (visit 4)

**Subjective:** Owner states Sassy played fetch for the first time since her onset of vestibular system without loss of balance and was almost running at her normal speed.

**Objective:**

**Manual intervention:** Stretching shoulders, IASTM to dorsal, cervical musculature.

**HEP:** Balancing on disc with all 4 feet for 30 seconds working up to 1 minute, cervical active ROM, bilateral shoulder stretching.

**Gait:** gait pattern unremarkable, turns have normalized in terms of speed and trajectory deviation.

**Assessment:** Sassy showed increased balance this session and was able to stand with all 4 feet on discs with only one instance of LOB requiring assistance from physical therapy. Plan to increase duration and then progress to reduced visual feedback in order to force full reliance on vestibular system to improve balance when Sassy is in dark or dimly lit settings. Sassy is also maintaining improvement in cervical and shoulder ROM between sessions.



**Remaining problems and goals:** Add in blindfold next session.

**Plan:** Transition to an independent HEP next session due to owner traveling with her dogs for competition and being textbook compliant with exercises.

#### April 22, 2019 (visit 5)

**Subjective:** Owner states Sassy is doing great; she does not notice any deficits anymore.

**Objective:**

**Therapeutic exercise:** Balancing on discs with all 4 feet and blindfolded for 30 second intervals.

**Manual intervention:** Stretching to bilateral shoulders, cervical soft tissue mobilization, and active ROM.

**HEP:** Diagonal leg lifts on foam or disc surface, balance on foam with blindfold until reaching 1 minute without LOB.

**Gait:** Unremarkable gait pattern.

**Assessment:** Sassy has shown dramatic improvement compared to her initial evaluation and is no longer exhibiting a head tilt, or restricted cervical or shoulder ROM. She now exhibits a normalized gait pattern with both trotting and walking, as well as during directional changes and in dimly lit environments. Her balance has returned to normal and she shows proper upregulation of her vestibular system during compromised visual and somatosensory situations, such as when she is blindfolded and on a compliant surface. She did show some noted mild LOB when blindfolded on foam toward end of duration, however.

**Remaining problems and goals:** None.

**Plan:** Since all goals have been met and the owner is independent with a HEP, she will be discharged from the structured rehabilitation program.

#### Discussion:

**Veterinarian feedback:** Sassy's veterinarian seemed extremely pleased with Sassy's progress and was very surprised she was able to recover as quickly as she did, especially without medication. She asked if she could refer more vestibular patients to physical therapy in the future.

- **How do you feel physical therapy made a difference in this particular case?**

I think physical therapy made a tremendous impact in this case, and was what allowed Sassy to make a quick and full recover. I think without therapy she would have been reliant on medicines much longer to keep her condition stable and developed orthopedic issues with her neck and shoulders secondary to compensating for lack of balance and upregulation of vestibular system.

- **What is your speculation of the case if the patient did not receive physical therapy?**

If this patient did not receive physical rehabilitation, I do not think she would have returned to her prior level of function given her age and level of impairment.

- **What could have been altered in the physical therapy care of this case?**

I feel good about the outcome of this case and would not

really change anything at this time. I might have added a weighted vest in the very acute stages to see if that helped, but I was hesitant to try that given her level of head tilt and restricted shoulder ROM.

• **Were there any barriers to the outcome of the case?**

The patient went on an 8-week trip to compete with her other dogs, which is why therapy was transferred to a HEP sooner than it may have been, but the great majority of the goals had been met by that time.

**REFERENCE**

Han BI, Song HS, Kim JS. Vestibular rehabilitation therapy: review of indications, mechanisms, and key exercises. *J Clin Neurol.* 2011;7(4):184–196. doi:10.3988/jcn.2011.7.4.184.

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