

**Case Study 5: Winnie – Chronic partial ACL tears, diffuse OA/DJD, IVDD
Dr. Shantel Julius, DVM**

History of Case

Name: Winnie

Age: 10 years 1 month DOB: 08-24-2007

Breed: Australian Shepherd

Sex: Female **Altered:** Spayed

Dog's lifestyle/occupation: Retired Disc Dog. Winnie competed heavily when she was younger, but now enjoys playing fetch and catch.

Brief history of dog's family history: Owners have had Winnie since she was a puppy.

Brief history of problem in which dog is referred for: Winnie was seen 10-21-2008 for intermittent lameness on her right hind limb for 2-3 weeks. The lameness was more apparent after landing from catching the frisbee. No diagnostics and no treatment other than activity restriction. Differential diagnosis was muscle strain vs partial ACL tear.

Winnie presented on 12-01-2008 for intermittent lameness on her left hind limb. Owner noted at that time that Winnie carried the leg differently and had difficulty rising from the floor after playing frisbee. Radiographs showed normal hips. No treatment prescribed. Differential diagnosis panosteitis vs soft tissue injury. Right hind lameness resolved at that point.

Winnie presented for annual exam on 11-13-2010, and when Winnie was held for an intra-nasal Bordetella vaccine she was limping on her right hind afterward. No further work-up or treatment pursued. On 06-19-2012, Winnie was seen for intermittent lameness of her right front leg for 2 weeks. The lameness occurs after exercise. On physical exam, no abnormalities noted and no lameness at that time. Radiographs were declined, and Carprofen prescribed.

Winnie was seen on 11-13-2012 for annual exam, and owner noted issues with arthritis (Winnie was 4 years old at the time), especially right front leg. At this time, owner requested information of joint supplements. On physical exam, no abnormalities noted. Discussed omega 3's, Cosequin, and NSAIDs. No medications were prescribed.

Winnie presented on 11-08-2013 for annual exam, and noted no worsening of arthritis concerns. Owner is using Synovi G daily. Owner is unsure if it is helping, but it's not hurting, therefore she will continue. Owner notes that Winnie seems stiff after activity. Current diet is Salmon. No abnormalities noted on physical exam.



Winnie presented on 11-07-2014 for annual exam, noting that previous stiffness and lameness seems to have resolved. On physical exam, Winnie is noted as seeming stiffer after flexion and extension of right hind, which resolved with walking.

Interventions:

06-19-2012 – Carprofen 50 mg PO q12hrs as needed

Referring veterinarian's diagnosis: Arthritis

Test results: None available

Surgery: None

Past medical history: See above.



Evaluation

06-22-2017 – Initial Exam/Consult

Observation: BAR. Winnie presented for evaluation for annual exam, however owner reports that Winnie has on/off lameness on her left hind, especially after swimming. Winnie usually recovers after 1-2 days.

Gait Assessment:

- Walk: Ambulates on all 4 limbs; no lameness noted at a walk
- Trot: Ambulates on all 4 limbs; slight limp on left hind at a trot; Grade 1/6 lameness (Carr, BJ; Dycus, DL. Canine Gait Analysis. *Today's Veterinary Practice* 2016; 93-100.)

PROM – affected joints with a comparison to uninvolved joints: Mild muscle loss on left hind; moderate crepitus left stifle; no pain on extension or flexion; pain on palpation of L3-4; no muscle pain; mild thickening left stifle with small medial buttress.

Neurological testing: No neurological deficits.

Pain Assessment (0-10) (using pain assessment scale from, 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): 4/10

Assessment:

- Problems:
 - Pain on palpation of L3-4
 - Crepitus and thickening of left stifle
 - Muscle atrophy left hind
 - Pain after activity
 - Stiffness
- Goals:
 - For Winnie to live a comfortable life that allows her to play.

Treatment Plan:

- Home exercises:

- None at this time
- Recommendations:
 - 4Dx Plus – declined
 - Radiographs of hips and stifles – declined
 - Activity restriction for 30 days – no ball fetch
 - Minimize swimming to only 5-10 minutes daily
 - Leash restriction – no free running
- Medical management:
 - Gabapentin 100 mg PO q8hrsx30d
- Nutraceuticals:
 - Dasuquin with MSM
 - Welactin
- Recheck in 30 days

Actual History of Treatment

Thursday, July 20th, 2017 – 1st Visit

- S: BAR. Winnie presented for evaluation for annual exam, however owner reports that Winnie has on/off lameness on her left hind, especially after swimming. Winnie usually recovers after 1-2 days.
- Q:
 - Treatments:
 - Medical management:
 - Gabapentin 100 mg PO q8hrsx30d
 - Nutraceuticals:
 - Dasuquin with MSM
 - Welactin
 - Owner education: Recommend control pain, and then discuss plan further for strengthening to support mobility. Activity restriction will be very important during this time.
 - Home plan:
 - Activity restriction for 30 days – no ball fetch
 - Minimize swimming to only 5-10 minutes daily
 - Leash restriction – no free running
 - Home exercise program:
 - None at this time.
 - Program within hospital:
 - Outpatient therapy at this time.
 - Measurable outcomes:
 - Weight: 46.1 lbs
 - BCS: 3/5
 - Observation of gait pattern, function, etc: Ambulates on all 4 limbs; no lameness noted at a walk. However, slight limp on left hind at a trot; Grade 1/6 lameness. Mild muscle loss on left hind; moderate crepitus left stifle; no pain on extension or flexion; pain on palpation of L3-4; no muscle pain; mild thickening left stifle with small medial buttress. No neurological deficits.

- Assessment:

- Progress:

- None at this time.

- Deficits remaining from initial plan:

- Pain on palpation of L3-4
 - OA/DJD of multiple joints
 - Muscle atrophy left hind
 - Pain after activity
 - Stiffness

- Assessment of barriers:

- Financial concern from owner.

- Remaining problems and goals:

- Problems:

- Pain on palpation of L3-4
 - Crepitus and thickening of left stifle
 - Muscle atrophy left hind
 - Pain after activity
 - Stiffness

- Goals:

- For Winnie to live a comfortable life that allows her to play.



- Plan:

- Recheck in 30 days to assess pain and make strengthening plan.

Thursday, August 17th, 2017 – 1st Visit

- S: BAR. Winnie presented for recheck evaluation of lameness. Owner has been restricting activity for a month. Owner does not think she notices a lameness at this time, but Winnie has not been allowed to be active.

- O:

- Treatments:

- Medical management:

- Gabapentin 100 mg PO q8hrsx30d

- Manual Intervention:

- Performed distraction of bilateral carpi and hocks
 - Cranial and caudal glides of bilateral carpi and hocks
 - End feel of carpus mildly painful
 - End feel of hock mild discomfort

- Owner education: It will take time to improve Winnie's strength and mobility. Winnie likely has bilateral hock, carpus, and stifle arthritis. The stifles are likely chronic partial ACL tears. At this time, Winnie has stable joints, therefore surgery is not warranted, as it will not make Winnie any better than she already is. The hope is to strengthen Winnie's core, spinal muscles, hind limb muscles, and shoulders in order to provide Winnie with more comfort, strength, and mobility.

- Home plan:

- No ball fetch until further notice
 - Minimize swimming to only 5-10 minutes daily
 - Leash restriction – no free running

- Home exercise program:
 - Massage 4-7 times per week – gentle strokes, followed by working out knots, followed by myofascial release
 - Balance work – standing square lift opposite front and hind limbs, careful not to lift too high, and hold for 10 secs. Then switch sides. Repeat 3 times. Ideally perform 4-5 days/week.
 - Strengthening – have Winnie stand on something ~1-1/2 feet tall, placing her forelimbs on, while standing square. Using a treat, push her head back, making she is fully weight bearing equally on her hind limbs. Hold for 30 secs, adding 15 secs per week. Goal = 2 mins without a break. Ideally perform 4-5 days/week.
 - Stretch – after exercises, do cookie stretches nose to hip, nose to back feet; repeat each location, on both side 3 times. Ideally perform daily.
 - Controlled walks – walk for 10 mins each day. Increase 5 mins per week.
 - Manual therapy – gentle distraction of the carpus and hocks, followed by cranial and caudal glides, based on owner comfort level. Perform 3 times once daily.
- Program within hospital:
 - Outpatient therapy at this time.
- Measurable outcomes:
 - Weight: 45.1 lbs
 - BCS: 3/5
 - Goniometry:
 - RF: Carpus 190/38; Elbow 165/38; Shoulder 170/51
 - LF: Carpus 200/38; Elbow 170/38; Shoulder 170/60
 - RH: Hock 180/40; Stifle 180/50; Hip 160/55
 - LH: Hock 180/32; Stifle 165/32; Hip 160/48
 - Goniometry post-manual therapy:
 - Carpus bilateral flexion 32
 - Thigh circumference:
 - Left hind thigh circumference: 31 cm
 - Right hind thigh circumference: 31.5 cm
- Observation of gait pattern, function, etc: Ambulates well. Mild muscle loss LH; mild crepitus left stifle; no pain on extension or flexion; no pain on palpation of L3-4; no muscle pain; mild thickening left stifle with small medial buttress; mild thickening with medial buttress to RH with mild crepitus; decreased ROM of bilateral carpi and hocks. No neurological deficits.
- Assessment:
 - Progress:
 - Improved pain and mobility.
 - Deficits remaining from initial plan:
 - OA/DJD of multiple joints
 - Muscle atrophy left hind
 - Assessment of barriers:
 - Remaining problems and goals:
 - Problems:



- Crepitus, medial buttress, and thickening of left stifle
 - Decreased thigh circumference of left hind compared to right hind, however suspect overall decreased muscle mass of bilateral hind limbs
 - Decreased ROM bilateral carpi and hocks
 - Thickening and medial buttress on right stifle
- Goals:
 - For Winnie to live a comfortable life that allows her to play.
- Plan:
 - Recheck 4 weeks to hopefully add in controlled ball play once establishing range of motion of carpi and hocks.

Monday, September 25th, 2017 – 3rd Visit

- S: BAR. Winnie presented for recheck evaluation of lameness. Owner has been restricting activity, for the most part since last visit. Owner does not think she notices a lameness at this time, and Winnie seems comfortable. Owner takes Winnie for a 10-20 min walk daily. Owner has not been doing manual therapy, other than distraction of hock and carpus. Owner has been performing massage. Owner is happy with Winnie's improvement and comfort. Owner has been giving Gabapentin q12hrs.

- O:
 - Treatments:
 - Medical management:
 - Gabapentin 100 mg PO q24hrs until gone
 - Use Carprofen as needed for acute pain episodes
 - Manual Intervention:
 - Performed distraction of bilateral carpi and hocks
 - Cranial and caudal glides of bilateral carpi and hocks
 - No pain noted
 - Owner education: It will take time to improve Winnie's strength and mobility. The hope is to strengthen Winnie's core, spinal muscles, hind limb muscles, and shoulders in order to provide Winnie with more comfort, strength, and mobility.
 - Home plan:
 - Ok to swim as desired
 - No dock diving at this time
 - Home exercise program:
 - Massage 4-7 times per week – gentle strokes, followed by working out knots, followed by myofascial release
 - Balance work – standing square lift opposite front and hind limbs, careful not to lift too high, and hold for 10 secs. Then switch sides. Repeat 3 times. Ideally perform 4-5 days/week. Activate left gluteal muscles prior to standing on left hind.
 - Strengthening – have Winnie stand on something ~1-1/2 feet tall, placing her forelimbs on, while standing square. Using a treat, push her head back, making she is fully weight bearing equally on her hind limbs. Hold for 30 secs, adding 15 secs per week. Goal = 2 mins without a break. Ideally perform 4-5 days/week.



- Bow to stretch carpus and elbows. Repeat 3 times. Perform 4-5 days/week.
 - Side steps – gently lure Winnie to do side steps, about 10 steps left and 10 steps right. Repeat 3 times. Perform 3-4 days/week.
 - Sit to stand – perform sit to stand (better if you can do a kick back) daily prior to meals. Repeat 3-4 times.
 - Stretch – after exercises, do cookie stretches nose to hip, nose to back feet; repeat each location, on both side 3 times. Ideally perform daily.
 - Controlled walks – walk for 10 mins each day. Increase as able.
 - Start to roll Frisbee on the ground for retrieves. Do this for 4 weeks prior to starting basic catches.
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 - Program within hospital: Outpatient therapy at this time.
 - Measurable outcomes:
 - Weight: 46 lbs
 - BCS: 3/5
 - Goniometry:
 - RF: Carpus 220/40; Elbow 155/28; Shoulder 180/50
 - LF: Carpus 200/40; Elbow 175/35; Shoulder 170/40
 - RH: Hock 180/30; Stifle 170/45; Hip 170/40
 - LH: Hock 170/35; Stifle 165/45; Hip 165/45
 - Thigh circumference:
 - Left hind thigh circumference: 32.5 cm
 - Right hind thigh circumference: 32.5 cm
 - Observation of gait pattern, function, etc: Ambulates well. Mild muscle loss LH; mild crepitus left stifle; no pain on extension or flexion; no pain on spinal palpation; no muscle pain; mild thickening left stifle with small medial buttress; mild thickening with medial buttress to RH with mild crepitus; more comfort on extension and flexion of carpus and hocks.
- Assessment:
 - Progress:
 - Improved strength, muscle mass, pain, and mobility.
 - Deficits remaining from initial plan:
 - OA/DJD of multiple joints
 - Assessment of barriers:
 - Remaining problems and goals:
 - Problems:
 - Crepitus, medial buttress, and thickening of left stifle
 - Overall decreased muscle mass of bilateral hind limbs, however equal circumference at this time
 - Thickening and medial buttress on right stifle
 - Goals:
 - For Winnie to live a comfortable life that allows her to play.
- Plan:
 - Recheck as needed for comfort.

