

## “Lily” – A Case Study

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## History

- Lily is a 4 year old Female/spayed Maltese with a history of Bilateral luxating patella.
- October 23, 2006- That morning at home, Lily appeared disoriented and ataxic, ate normally, but later vomited. She began knuckling in the Right Fore with extension of the Right Hind limb. The patient then began shaking and vocalizing, followed by rapid progression to R side paresis. Patient was taken to the emergency clinic.

## Emergency Clinic Presentation

- BAR
- CN exam- Slight positional nystagmus
- Gait- Non-ambulatory tetraparesis (R>L, some motor function evident in LF and LH limbs, but non in R side)
- Reflexes- Normal patellar reflexes, normal withdrawal reflexes in B rear, reduced withdrawal (and no deep pain) in RF, normal withdrawal in LH
- Postural reactions- deficits in all limbs
- Palpation- Mild neck discomfort (tense with palpation)

## Emergency Clinic Diagnostics

- CBC- normal
- Biochemical profile- ALKPhOS and ALT slightly elevated ( Liver)
- Spinal tap- mild inflammation
- MRI- Lesion revealed within spinal cord in the caudal cervical region with edema within the spinal cord at the site.
- Toxoplasma, Ehrlichia Canis, Lyme, RMSF, Rickettsii, Distemper, Neospora caninum and Cryptococcus titers submitted- all negative

## Emergency Clinic

- DD- Suspicion of inflammatory lesion (i.e.- meningoencephalomyelitis), but other causes not ruled out (i.e.- infarct).
- TX- Prednisone  
Clindamycin

## Rehab- Initial Evaluation

- October 31, 2006- (8 days post onset)
- Observation- Lily cannot stand or sit. Head and neck carriage is low and guarded. RF carpus held in flexion. When assisted with a sling, Lily attempts to advance all limbs except RF, but is unable to bear full weight on own.
- Range of motion measurements- WNL for Both Fore and Both Hind
- Proprioception and Voluntary Movement- Absent in RF, diminished in all other limbs (R>L)
- Deep pain present in all limbs, though decreased in RF
- Cervical mobility- Side to side restricted (R>L), Up and down are Within Normal Limits (WNL)

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## Rehab- Plan

- An aggressive treatment plan with day-long visits scheduled two to three times per week
  - Acupuncture
  - E-stim
  - Hydrotherapy
  - Soft tissue work
  - Chiropractic
  - Ultrasound
  - Therapeutic Exercises
- Home exercise program, BID-TID
  - Massage
  - Biscuit Stretches
  - Passive ROM
  - Walking

## First week of treatment

- Serious subluxation of C6 - 7 vertebra noted and adjusted
- EAP- GB 20 & 21. SI 3, BI 11 & 25
- Paraspinal E-stim used for pain control
- Ultrasound used on lateral cervical muscles, followed by cervical stretches
- Soft tissue massage
- Standing and weight shift exercises
- Hydrotherapy- standing and hand-over-paw walking
- Results- Improved head/neck carriage, more active, improved cervical motion, decreased pain. Patient able to move into sternal from R side lateral.

## Second week of treatment

- EAP- SI 3, TH 5, GB 21, GB 20, BI 11, 25, 28 & 40.
- Chiropractic- C6 – 7 adjusted
- RX- Jin Gu Die Shang Wan Chinese herb for injury
- Continued E-stim, ultrasound and massage treatments. Continued stretches, standing, sitting and weight shifting exercises.
- RF beginning to show signs of increased tone.
- Results- Decreased cervical muscle spasms, patient attempting to stand, and when assisted to stand patient can maintain position for 2 seconds, RF beginning to show signs of innervations. Patient making efforts to sit up and crawl.

## Third week of treatment

- Continued EAP- SI 3, GB20, GB 21, BL 11, 21 & 25.
- Chiropractic- adjusted C6 – 7 and T13 – L2
- Noticeable atrophy of Right Fore(RF).
- Continued with rehab treatments and exercises as in previous weeks, but e-stim was added to RF biceps and triceps to strengthen muscles.
- Results- Patient sitting up on own. Can maintain stand for 30 seconds. Patient trying to use RF but limb collapses under her weight. Sent patient home with RF splint to help stabilize limb.

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## December

- Chiropractic and EAP once during month
- Continues with rehab twice weekly
- Increased RF triceps tone
- Results- Lily is able to walk and moderately advance RF with minimal weight bearing. However as she progresses, she is learning that she can ambulate faster by 'tripoding.' Owners instructed in triceps massage/stretch and exercises to resist triceps contracture and encourage use and weight bearing in RF.

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## January and February

- Continued rehab twice weekly in January and then weekly in February. Continued massage, ROM and E-stim of triceps. Exercises focused on patterning of walking and increased weight bearing.
- Triceps contracture worsening and inhibiting advancement and weight bearing in RF
- Client to travel frequently over next few months

## April - October

- Patient brought for rehab once in April, once in May, once in September and twice in October.
- RF triceps contracture continues, but Lily will use and weight bear through RF but usually only on non-slippery surfaces and only when relaxed and slow or distracted. Patient shows improved ambulation when RF carpus is booted and tightly wrapped to add support.
- Client instructed on teaching Lily a 'paw' command (like "shake") to encourage active extension of R shoulder forward.



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