Barral Institute Case Study
Neural Manipulation – Sciatica/Chronic Headaches

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Abstract: A case study of a 14-year-old male runner suffering with right lower extremity sciatic symptoms and chronic headaches that resolved after treatment to dura, vagus, and sciatic nerve structures with neural manipulation. This case example demonstrates the possibility of how trauma affecting a distant region can resolve with treatment using neural manipulation. Treatment of structures distant from pain site can have huge implications on symptoms resolving when using the guidance of general and local listening for treatment plan.

Key words: runner, sciatic, chronic headaches, neural manipulation, dura, vagus nerve.

Diagnosis: Sciatica and Headaches in a 14-year-old male **Date:** 10/16/2017
History: This case is a 14-year-old high school freshman that fell 3 years ago from a skateboard platform about 4 feet in the air off a half pipe ledge. At the time his X---ray's were positive for L clavicle Fx and R ankle distal fibular Fx. He did not receive any therapy at the time, just told to ice, rest and ankle brace for 6 weeks. He started having headaches shortly after that, but didn't correlate the fall with the headaches. His headaches are in temporal region and can present with pressure behind his eyes. He began having sciatic type symptoms in R LE about a year ago after a 5-hour long car ride. Then his symptoms would come on after running more than 5 miles, (especially if already tired that day) or sitting on hard surfaces for more than 15min. He had pain in R gluteal area and into hamstrings that varied from as high as 6---7/10 and low as 1/10. Headaches can get to a 6/10 as well, unsure as to any trigger other than possible hydration because they get better with drinking water. R LE symptoms lessen with rest and changing position from sitting, and self-stretches to hamstrings. He was not taking any medications and no recent imaging has been performed. He also has not slept well in past few years reporting waking up several times a night and more stomach pains after eating the past few years with no changes in symptoms with dietary changes.

Procedure & Treatments: Patient was seen for an initial evaluation and one treatment session that lasted 90 minutes and 60 minutes respectively. Session were three weeks apart. Neural techniques were used for release of L tentorium, L falx cerebri, L jugular foramen, L Vagus nerve at jugular foramen linked with it mid trigone space to esophagus and lesser curve of stomach, and ant branches with double induction on expansion phase. Also technique for ease at his L retroclaviulcar facia and mediastinum. Then re---listened and GL went to R LE glut area and LL. Treated right lumbar plexus, superior gluteal nerve, sacral plexus, piriformis off sciatic in SL with knee extension as a long lever, link with popliteal nerve and posterior tibial and peroneal nerves with elongation in expansion phase in SL and sitting. Taught HEP self-neural glides in sitting with MFR to hamstrings with knee ext/flex as long lever movement to help with release, a functional whole body dural/sciatic nerve glide in standing to be done 10---20 reps daily along with PNF prolonged holds into mass flexion and wall press for LE PNF gait patterns.

Assessment/Initial Evaluation:
Assessment revealed 5'9'' 14-year-old male approx. 130 pounds with B pronated mid and forefoot. General Listening: L cranium Local listening: L tentorium, witness positive at sagittal suture on L, Listen at RCPM pulls up to L, mastoid process post/med mobility was tighter end feel on the left all indicating L tent restriction, Manual Thermal: Projection over L cranium and R sciatic at notch.

Pre Treatment: pain in sitting 6/10. L PSIS elevated with positive jump test on L. No significant gait deviations, deep squat on R has lack of folding at R hip.

Cervical AROM R Rotation=57°L=70° and extension=58°
Functional UE NTT: R=55° and L=90°
Standing Thoracic/Lumbar Rotation R=5% L=5% Flexion=60%.
Extension Slump Dural tension test R=---75° L=---75° Flexion Slump Dural tension test R=---25° L=---15°
Hip PROM IR R=33° L=43°. Strength testing of core diagonal R=1+ L=trace. Psoas R=3 L=3+.
R Hip IR and ER B=3+ with poor core stability.

Post treatment changes: L mastoid process softer end feel, No listening at RCPM into cranium, down into dural tube on R, no vertex listening into cranium, sagittal suture witness neg, Cervical AROM R Rotation=79° L=81° and extension=90°
Functional UE NTT: R=180° and L=180°
Standing Thoracic/Lumbar Rotation R=85% L=95% Flexion=85%
Extension Slump Dural tension test R=---35° L=---30° Flexion Slump Dural tension test R=neg L=neg
Strength testing of core diagonal R=3+/5 L=3/5. Psoas R=5/5 L=5/5.
R Hip IR and ER B=4+/5 with much better stability. Post treatment pain in sitting 0/10. Improved squat mechanics at R hip. General Listening: R LE Local listening: R sciatic at post knee.

2nd Treatment session:
Patient reported sleeping much better, stomach pains and headaches have fully resolved. Still having R gluteal pain with prolonged sitting and running.
Pre Treatment gluteal pain in sitting 2/10.
General Listening: L Vagus N, then R posterior pelvis region
LL: Lumbar and sacral plexus and sciatic Nerve. Cervical Extension=72°.
Standing Thoracic/Lumbar Rotation R=50% L=90% Flexion=80%.
Extension Slump Dural tension test R=-45° L=-40°
Flexion Slump Dural tension test R=-25° L=-10°.
Strength testing of core diagonal R=3+/5 L=1+/5. Psoas R=4/5 L=4+/5.

Treatment consisted of L jugular foramen release, L Vagus nerve linked at trigone space to L mediastinum esophagus and stomach. Balanced dura in SL from C1---T8/9 and sacrum. Neural release to right lumbar plexus, superior gluteal nerve, sacral plexus, piriformis off sciatic in SL with knee extension as a long lever, link with popliteal nerve and posterior tibial and peroneal nerves with elongation in expansion phase in SL and sitting. Taught HEP self neural glides in sitting with MFR to hamstrings with knee ext/flex as long lever movement to help with release and "Bottom's up" functional whole body dural/sciatic nerve glide in standing to be done 10---20 reps daily along with PNF prolonged holds into mass flexion and wall press.

Post Treatment changes: Cervical AROM Extension=90°.
Functional UE NTT: R=180° and L=180°.
Standing Thoracic/Lumbar Rotation R=85% L=100% Flexion=95%.
Extension Slump Dural tension test R=---30° L=---20°
Flexion Slump Dural tension test R=neg L=neg.
Strength testing of core diagonal R=5/5 L=4---/5. Psoas R=5 L=5.
Post treatment pain in sitting 0/10.
Patient discharged to HEP and self management.

Results:
Patient reported sleeping much better, stomach pains and headaches have fully resolved. Still having R gluteal pain with prolonged sitting and running resolved after second session. He had

made good improvements in cervical and trunk ROM, core and hip strength, UE and LE neural tension after first visit that improved even more after second visit. He reports 98% improvement overall with no pain after second visit. His ROM, core and hip strength were much improved. His UE functional neural tension normalized but had some residual still in LE at end of second visit.

Discussion: Findings indicate possible neural tension involvement of dura and sciatic nerve post fall 3 years ago. Possible clavicular fracture compressing on vagus nerve creating tension into cranium along with whiplash type mechanism involving tentorium led to prolonged strain in neural system. His R ankle Fx during the injury may have lead to other possible forces from fall along neural structures that were still being held in tissues. Eventually lost extensibility in the system began to appear as "sciatica" in his R LE with chronic headaches. This tension may have been affecting his sleep and digestion as well due to vagus nerve involvement.

Conclusion and Recommendations: Further assessment of whole body neural tension causing areas of localized neuritis and headaches post trauma needs to be studied. The idea of treating just at the area of pain may cause true areas of restrictions and tension to be missed. These areas would not be found without the guide of general and local listening.

Treating Therapist: Veronika Campbell, PT, MPT, CSCS, NSC

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