Transient Dysautonomia following Visceral Osteopathic Manipulation: A Case Report

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Introduction:
Each year, in the United States, there are just over 17,000 new cases of spinal cord injury (SCI) with a male predominance of 85% and the majority cause from motor vehicle accidents.¹ Medical/surgical causes of SCI account for less than 10% of cases.¹ Autonomic dysreflexia (AD) is a disruption of the normal functioning of the sympathetic and parasympathetic nervous systems (Fig 1.). It can occur in up to 85% of patients with SCI at levels T6 and above. An increase of 20-40 mmHg above systolic blood pressure (SBP) baseline may indicate an episode of AD. SCI blood pressure trends to range from hypotensive to normotensive when compared to the general population.²,³ AD is considered a rehabilitative emergency and treatment is often non-invasive with elimination of aggravating factors and anti-hypertensive medication within the first 10 minutes of an episode. To our knowledge there have been no prior documented reports of visceral Osteopathy or other manual manipulation techniques which triggered an episode of AD.

Objective:
Determine the role of osteopathic manipulative treatment (OMT) in treating SCI patients who have dysautonomia as well as associated medical sequelae, such as neurogenic bowel (NB).

Methods:
The following is a case report and is IRB exempt. A patient with dysautonomia from history of SCI presented to our office for OMT of her low back pain. Various OMT techniques were used to treat her symptoms and visceral Osteopathy was utilized to treat gastrointestinal symptoms that were found and discussed during the course of the examination. Verbalization of gastrointestinal symptom status during subsequent office visits determined effectiveness of OMT.

Case Report:
Chief Complaint: “My back hurts. I think it’s my SI joint”

History of Present Illness: 64 y/o female presented to outpatient OMM/ NMM clinic for 2 day history of, right greater than left, lower thoracic and low back pain. Pain began without inciting event. Denied radiation of pain but had difficulty determining due to history of chronic preesma from bilateral peripheral neuropathy.

PMHx: SCI from transverse myelitis at T6 level, Dysautonomia, Autonomic neuropathy, Neurogenic bowel, Left foot drop, Chronic inflammatory demyelinating polyneuropathy, Rheumatoid arthritis, Hypothyroidism.

PSHx: Appendectomy, Cholecystectomy, Right shoulder SLAP repair.

Social Hx: Exercises 2 days per week. Denied tobacco, drugs or ethanol use. Works as an academic Physical Therapist. Independent with ADL’s.

Medications: Rituximab infusions q6 months, Bystolic 2.5mg BID, Cardura 1 mg qhs, Clonidine 0.1mg patch qSun, Nexium qd, Pecald 10 mg qd, Reglan 5mg qd prn.

ROS: GI-Positive for nausea, reflux, neurogenic bowel. MSK- right hip pain and left sided rib pain. Otherwise, all other systems normal.

Physical Exam:
Vitals (Pre-treatment): BP 110/66, 64 bpm, 62 inches, 135 lbs
General: AAox3, NAD
Abdomen: Soft, NT, minimally distended, + bowel sounds
Neuromusculoskeletal: 4/5 strength muscle left L4 and L5 lower extremity otherwise 5/5 strength, 3+ deep tendon reflexes bilateral patellar, negative Hoffmann’s bilaterally, no clonus. Tenderness to palpation over the bilateral serratus anterior L>R, lumbar paraspinals, right pinpoints, right SI joint and right iliolumbar and sacroiliac ligaments.

Osteopathic: OA compression, C4 RSB, left ribs 6-10 inhalation dysfunction, T10-12 NS, RSB, elevated left hemi-diaphragm, L5 RS, LOL sacral torsion, bilateral pectoralis spasm, right pinpoint spasm, sternal Chapman’s points, multiple intercostal and serratus anterior tenderpoints, restrictions of the celiac , SMA and IMA collateral ganglia, restriction of mesentry.

Results:
Immediately following treatment of the viscera the patient reported nausea and became flushed and diaphoretic and stated that this is how she feels when her blood pressure (BP) rises significantly. BP reading revealed SBP elevation to 150/74, which returned to pre-treatment reading of 110/62 after 15 minutes of close monitoring. Per patient request, no medications were administered between the first and second BP readings to abort the dysautonomic episode. Standard of care would have been to administer anti-hypertensives within first 10 minutes of dysautonomic episode. Upon further discussion, patient had previously had dysautonomic episode requiring hospitalization to acupuncture of her abdominal region for gastrointestinal (GI) complaints related to her NB. The patient returned to our clinic for maintenance treatment in 4-week intervals, without further dysautonomic episodes and reported decreased time to complete bowel program including stool evacuation.

Discussion:
OMT could potentially play a role in treatment of visceralosomatic manifestation of GI disturbance, particularly NB, in the SCI population. Absence of structured documentation (i.e. journaling) of visceral changes is a limitation of this report. We believe the patient had facilitation of the thoracic segments below the level of her SCI which predisposed her to colonic stasis and also explains her abdominal distension. The abdominal viscera was stimulated with palpation and treatment of visceral somatic dysfunctions detected, leading to aggravation of the colonic stasis. This likely triggered the AD episode. The ability to disrupt the visceralosomatic reflex with OMT was also demonstrated here.⁴ This makes a case for OMT to be incorporated in the treatment plan following SCI. It is important to be aware of the potential of AD to be triggered by visceral manipulation in SCI’s above T6 to ensure patient safety. More research is required to determine specific applications for visceral osteopathy when it comes to treatment of GI disturbance and potential visceralosomatic referral patterns (Fig 2.), from dysautonomia in acquired conditions.

References: