#### CASE REPORT

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# Diagnosis and Treatment of a Dynamic Strain Vector after a Motor Vehicle Accident

#### Abstract

This report outlines a case of prolonged pain and somatic dysfunction after a motor vehicle accident where a strain-vector was diagnosed in the biofield and successfully treated with the dynamic strain-vector release (SVR) technique. The palpatory diagnostic approach and end-feel of a strain-vector in the biofield described in this case provides guidance for those wishing to incorporate it into clinical practice, particularly in cases where traditional osteopathic techniques are not effective.

#### Background

Somatic dysfunction can affect the biofield, which is defined as "the extremely weak electromagnetic field within and surrounding a living system that may be involved in transmitting electromagnetic bioinformation for regulating homeodynamics."1 Hendryx has outlined a bioenergetics model which describes the biofield and use of a new technique called dynamic strain-vector release (SVR) in Chapter 40 of Foundations for Osteopathic Medicine.<sup>1</sup> This work should be consulted for more details. Palpating dysfunction in the biofield, or strain-vectors, can be challenging because the strain-vectors can be found either in/internal to, or outside/external to the physical body and the palpatory feel can be difficult to describe. Hendryx describes his method for palpating dysfunction in the biofield. In a case report, the method requires knowledge of acupuncture points, and not all osteopathic physicians have training in acupuncture. In addition, it is not necessary that acupuncture points be used to identify a strain-vector or perform Strain-Vector Release (SVR) (personal communication with Dr. Hendryx). Therefore, this case report describes a modification of Dr. Hendryx's technique that does not require a knowledge of acupuncture points. Treatment of a biofield may be necessary when patients have been subjected to trauma caused by a significant amount of force, such as a motor vehicle accident. This is because without addressing the biofield, such forces can be difficult to dissipate.

In some instances, large forces cause significant tissue disruptions such as bone fractures or tendon or ligament tears. However, in some patients, the energy from these forces can become embedded or "trapped" in the tissues and the biofield. The biofield can be shifted or obstructed in a manner similar to tissue dysfunction. The first law of thermodynamics, which claims that energy is neither created nor destroyed, offers some guidance in helping us understand

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#### **Editor's Note**

This article was completed as part of the requirement toward earning the designation of Fellow in the American Academy of Osteopathy. Opinions expressed in this article are those of the author and do not necessarily reflect the viewpoint or official policy of the American Academy of Osteopathy, and it was edited to conform to *AAOJ* style guidelines.

## Keywords

dynamic strain vector release; strain vector; osteopathic manipulative treatment; osteopathic manipulative medicine; biofield the mechanisms of energy trapping following significant trauma. If energy enters into the human body, it must be dealt with and the proposed model is as follows:

(1). Consider trauma forces, such as an impact by a car, which has magnitude and direction, as kinetic energy.

(2) When the kinetic energy enters the body, the energy can pass through the body and be dispersed, it can disrupt structures (like fracture a bone), it can be absorbed, or a combination of all of the above may occur. If absorbed, the energy is often converted into something usable, such as cell signaling that it has been damaged.

However, if none of these mechanisms to dissipate the kinetic energy occurs, the kinetic energy can become trapped in structures, neither passing through nor being converted, and thus remain in the tissues and biofield as potential energy. Muntiga refers to this phenomenon as shock and offers excellent additional insight and information in his work, Shock: The True Nature of Shock, an Osteopathic Approach.<sup>3</sup> Hendryx' strain-vector, in my opinion, offers a possible description of these trapped energies as the pull in a direction of a certain distance that has an origin at the site of the somatic dysfunction. Oftentimes, the use of osteopathic manipulative treatment (OMT) on physical body structures in the usual and customary fashion also treats a strain-vector, since the biofield and the physical body is interconnected. However, since strain-vectors can exist outside the body in the biofield, off-body treatment is sometimes necessary especially if the strain-vector is the primary somatic dysfunction as determined by a screening exam. Strain-vectors can be categorized as simple or complex. Simple strain-vectors are singular and resolve the tissue somatic dysfunction when treated. Complex strain-vectors are multiple vectors and when one is treated, another one becomes apparent, often in a different direction as multiple vectors can summate to form one vector.

# **Case Report**

The patient is a 33-year-old female who presents with low back, sacral, hip, neck and shoulder pain for 18 months following a motor vehicle accident in. She was driving, and her car was hit on the driver's side by another vehicle. She sustained multiple injuries including whiplash and a fractured pelvis. The pelvic fracture was stabilized with two screws that fused the right sacroiliac joint. The patient reports an overall improvement in symptoms since the injury and was able to return to full-time work and physical activities under the guidance of her orthopedic surgeon. She ambulates and exercises without pain but is not permitted to run. Her most significant symptom is pain in the right sacroiliac joint in the location of the screws. Standing for more than 1 minute exacerbates her pain. Her pain is relieved by lying down or sitting. In addition to her pelvic pain, the patient has chronic neck and shoulder tightness and soreness that is worse after a long day of work. She denies paresthesias, numbness, weakness, headaches, changes in hearing or vision and is otherwise healthy. She has not had osteopathic manipulative treatment (OMT) and seeks that now.

# Past Medical, Social History

Allergies: Augmentin (rash)

Social: nonsmoker, drinks socially, divorced, gravida 0, para 0

# **Course of Treatment**

Myofascial release (MFR) technique to the Temporary Anchorage Device (TAD), where the TAD is contacted anteriorly with one hand and posteriorly with the other, was chosen as the place to start treatment in order to improve respiratory-circulatory function. However, firm fascial barriers in the TAD were difficult to identify and the TAD was not releasing sufficiently after about 2 minutes of holding tensions. This, along with the patient's mechanism of injury, prompted further examination for a strain-vector. In this case, there was no index of suspicion to investigate a potential visceral cause since the patient was otherwise healthy per history and physical exam.

To begin examination for a strain-vector, tissue tensions were released with both hands while keeping tissue contact. The hand contacting the TAD posteriorly became a monitoring hand and the anterior hand became the sensing hand. Palpation of the layers of the upper abdominal wall and its contents was performed and fascial pulls were again noted in the TAD but additional tensions were also identified at the celiac ganglion. Then a typical ganglion release technique was attempted with the anterior contacting hand, but the tissues still did not release. Tissue release was attempted first because it is my personal preference to do that prior to treating the biofield. Thus, palpation for a dynamic strain-vector in the biofield, with the hands in the same place, began. To palpate for the strain-vector, awareness was shifted from identification 
 Table 1. Physical examination.

System	Findings
Vital Signs	Height: 5ft 5inches; Weight: 162.4 pounds; Body Mass Index: 27; Blood Pressure: 116/73 sitting left arm; Oxy- gen Saturation: 98% Room air at rest; Pulse: 69 beats pre minute; Temperature: 98.2° Fahrenheit (oral)
General	Healthy appearing.
Psychiatric: Orientation:	Oriented to time, place, and person. Normal mood and affect, active and alert.
Cardiac	Regular rate and rhythm without murmur.
Respiratory	Regular rate and rhythm without murmur.
Abdominal	Rounded, non-tender, non-distended.
Gait	Non-antalgic
Upper & Lower Extremeties	Motor strength 5/5 bilaterally in all muscle groups.
Spine	No spinous process or sacral promontory tenderness. Increased lumbar lordosis. Thoracolumbar range of motion limited in extension and side bending to the right and left. S-shaped scoliosis, with rib humps on the lower right 11-12th ribs and upper left 4-6 rib region
Neurological	Sensation intact in both upper and lower extremities. DTR's 2+/4 in bilateral upper and lower extremities.
Standing pos- tural exam	right iliac crest inferior, right acromion process superior, pelvis rotated to the left.

#### Table 2. Osteopathic Structural examination.

System	Findings
Cranium	Sphenobasilar synchondrosis (SBS) compression.
Cervical Spine	Occipitoatlantal (OA) joint bilaterally extended.
Lumbar Spine	Left iliopsoas muscle restricted.
Sacrum	Right on left sacral torsion, very limited motion at the right sacroiliac joint, decreased motion with the cranial rhythmic impulse.
Pelvis	Bilateral sacroiliac joint compression, mild righT sacroiliac joint tenderness, right innominate anteriorly rotated, right pubic symphysis superior shear.
Abdomen	thoracoabdominal diaphragm (TAD) restricted in inhalation bilaterally, rotated to the left and side bent to the right. Celiac ganglion restriction. Strain-vector extending anteriorly from the posterior thoracic spine at T11, within and through the celiac ganglion.

of tissue tension to identification of magnetic resistance, or my experience of the palpatory characteristic of a strain-vector. Magnetic resistance in this sense is similar to the tension felt when trying to approximate the north poles of two magnets, which repel each other. The ends of a strain-vector are identified at the place where the resistance felt between the hands is the greatest, analogous to a point of maximal tissue tension.

Strong resistance was not appreciated with the contacting hands on the body, so off-body palpation began, starting with the sensing (anterior contacting) hand. The sensing hand was elevated anteriorly off the body and motion testing was performed in all directions and planes similar to motion testing for fascial somatic dysfunction. The end of a strain-vector was identified about 2 feet anterior to the celiac ganglion. Note that if a strain-vector had not been identified anteriorly, the sensing and monitoring hands would have been switched and palpation posterior to the body would have been performed. Treatment began by finding the point of balanced resistance between the hands in a similar fashion to finding the point of balanced tension when performing balanced ligamentous tension (BLT) technique. Once the balance point was located, the magnetic resistance dissipated quite quickly. Shortly after, and almost concurrently, the patient's TAD excursion increased and then after a few breaths, abdominal wall motion was almost to the pubic symphysis. The TAD was reassessed for somatic dysfunction and significant improvement was noted.

Next, the sacral somatic dysfunction was addressed with cranial osteopathic manipulative medicine and although motion with respiration and biomechanical motion remained limited where the screws were, improved amplitude of cranial rhythmic impulse of the sacrum overall was obtained. The left iliopsoas muscle tension was corrected next with MFR with significant improvement. Then the OA joint dysfunction was treated with BLT with good improvement. Finally, the SBS compression was addressed with ligamentous articular strain, using a technique which treats the entire cranial duras simultaneously and is colloquially called the "five pointed star," as learned in a continuing medical educational course taught by Conrad Speece, DO.

### Discussion

Since structure and function are reciprocally interrelated, then treatment of tissues should resolve strains in the biofield, and vice-versa. However, when treatment of tissues is not resolving somatic dysfunction, the biofield may require more directed treatment. If a strain-vector is diagnosed and treated first, whether on or off the body, but does not resolve somatic dysfunction, the tissues should likewise be treated with manual techniques. In any case, if OMT does not resolve somatic dysfunction on or off the body, further diagnostic work up is warranted to rule out other causes of the patient's pain and dysfunction.

Other osteopathic manipulative treatment methods for identification and treatment of strain-vectors should be equally effective. Those include the use of a percussion vibrator, various myofascial and indirect technique variations.

Clinical judgement should be exercised before performing osteopathic manipulative treatment, including offbody techniques. Some indications to use the dynamic strain-vector release include: the diagnosis of a strain-vector in the tissues, somatic dysfunction in any tissue, and a mechanism of injury that could likely cause a dysfunction in the biofield. Off-body techniques should be clearly described to patients and include a valid and scientifically grounded. Terms like "trapped energy" can be used. It may be wise not to treat off-body in the first treatment session to gain patient trust. It is much easier to discuss the technique with patients who have already felt the effects of OMT performed on the body.

### Conclusion

This case describes the manual diagnosis and successful application of the dynamic strain-vector release technique for a patient with multiple body regions of continuing discomfort 18 months after a motor vehicle accident. Dynamic strain-vector release was used in this case because the usual diagnosis and treatment of somatic dysfunctions in physical body structures was not correcting the somatic dysfunction of the TAD. A high index of suspicion, as well as training and familiarity with the technique prompted examination for a strain-vector. Hendryx describes a strong pull felt between the hands that is rubber band-like2. In my experience, I would describe a sensation that feels more like magnetic resistance. Palpatory experience is unique to each individual, and descriptions are meant to help guide each practitioner towards better understanding of their sensory experience during manual evaluation and treatment.

# References

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