

# A successful use of cranial-sacral osteopathy in the treatment of post-traumatic headache following subarachnoid hemorrhage

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## Introduction

Posttraumatic headaches are among the most common somatic complaints following mild head injury. In the past, 79 percent of patients who were evaluated 3 months after minor head injury complained of persistent headaches. Head injuries can result from blunt head trauma during a motor vehicle accident, the mechanism being shearing stresses on the brain set up by rotational torques. The type of damage can range from mild to severe and can include, edema, herniation, laceration, and thrombosis.<sup>2</sup>

Subarachnoid hemorrhage can be a result of these cerebral contusions, with subsequent posttraumatic headache. A subarachnoid hemorrhage can cause meningeal irritation of the dura from dilated blood vessels. Also, serotonin and plasma kinins which effect pain receptors in the meninges can lead to neck pain which is most often experienced in the extensor area, along with the headache.<sup>3</sup>

Patients recover from posttraumatic head injury in varying degrees. There are numerous articles citing the presence of headache, along

with various other neurological sequelae occurring after a blunt head injury.<sup>4,5,6</sup> Retrograde amnesia is seen in some patients after a trauma, while other patients may experience a range of symptoms including seizures, vertigo, irritability, and psychiatric disturbances.<sup>3,7</sup> The commonly exhibited posttraumatic headaches are often treated symptomatically with analgesics, although other means of therapy may be employed to aid in returning the patients to their previous level of function.

This paper presents a case study of a patient with a posttraumatic headache coincident with a subarachnoid hemorrhage. The patient had obtained no relief from various analgesics and suffered for four months from unrelenting headaches. She was seen by a physiatrist who utilized an osteopathic approach in an attempt to relieve her headaches.<sup>8</sup>

## Report of Case

The patient was a 38-year-old Cherokee female who was consulted by neurology of the physical medicine service on June 5, 1996, after being involved in a motor vehicle accident

on February 14, 1996. She had been a seat-belted driver who struck a tree at 65 miles per hour to avoid hitting a deer in the road. After the collision, she lost consciousness for an estimated two and a half hours, and was taken to a nearby hospital. An MRI documented that a subarachnoid hemorrhage was diagnosed, along with a moderate concussion. She also sustained numerous lacerations to her head, face, and legs.

Upon discharge from the hospital, she experienced persistent headache, neck pain, and multiple visual disturbances including blurred vision and "black spots" in her visual field. In addition, she sustained retrograde amnesia, alteration in short term memory, and decreased concentration. She also reported numbness in the right side of her face and difficulty sleeping at night.

An ophthalmologic exam was unremarkable. A neurologic exam was also unremarkable except for decreased sensation to pain, light touch, and vibratory stimuli on the right frontal face. On March 8, 1996, a follow-up MRI was normal. By this time, her memory lapses had

disappeared. However, she was still left with headaches, neck pain, visual changes, and difficulty sleeping. The patient was not considered a surgical candidate based on her strong neurologic exam. Symptomatic treatment was recommended by neurology with the use of various medications including aspirin, acetaminophen, cycloben-zaprline, ibuprofen and nortriptyline. Drug therapy was unsuccessful and the patient continued to suffer with daily pain of 20 to 80 percent (with zero being no pain and 100 percent enough to black out) from the persisting headaches. By the time neurology referred the patient to physical medicine, she had been enduring headaches for almost 4 months, which is a longer duration than 59 percent of patients experience.<sup>7</sup> The headaches were located on the right side of her face of constant duration and daily frequency. She still complained of difficulty sleeping and visual disturbances, but denied any extremity weakness or loss of continence of bowel or bladder.

The past medical and surgical history was noncontributory. She denied tobacco abuse and her daily alcohol consumption was limited to one glass of wine with dinner.

Physical exam was unremarkable except for numbness in the area of cranial nerve V on the right. Structural examination revealed multiple cervical and thoracic, as well as cranial somatic dysfunctions. The most significant somatic dysfunctions were at the junctions of the right sphenoid, maxillary, and temporal bones. Jaw opening was smooth and symmetrical about the midline with no palpable or audible clicks.

Subsequent laboratory studies revealed a normal CBC, blood chemistry, rheumatoid factor, and erythrocyte sedimentation rate.

After initial cranial treatment, the

patient was given palatal pressure exercise, instructions to use the pool 3 times a week, and a prescription for hydroxazine hydrochloride 25mg qHS for anxiety and sleep. She was also instructed to discontinue any alcohol use.

The patient was seen a total of 12 times from June 5, 1996, to August 9, 1996. Manipulation consisted of muscle energy and high velocity techniques addressing the cervical and thoracic somatic dysfunctions. Most frequently, extension lesions were present at the OA, C3-5, T4, and areas of ribs 3-5. The cranial manipulation was used to achieve a good balance of motion of the sphenoid bone, and freed any restrictions of motion in the temporal, frontal, and maxillary bones, as well as in the sacrum and occiput.

At the fourth visit, her subjective visual changes resolved. At the fifth visit, the numbness resolved. During this time, the patient reverted from a condition of constant pain to one in which she would be pain-free for two days. The eighth visit revealed a normal neurologic exam, including a symmetrical pin prick where there had previously been decreased sensation. An adjunctive regimen of tramadol was tried, but was discontinued after one dose by the patient due to intolerance.

On the ninth visit, the patient felt a "pop" on the right side of her face, at the sphenotemporal junction; and afterwards, her pain decreased. She was also able to discontinue hydroxazine hydrochloride and sleep throughout the night. On the twelfth visit a similar, but louder, "pop" was heard and felt by the patient in the right TMJ. Subsequently, the patient remained headache-free and pain-free. On the last visit, the patient reported that she continued to remain headache-free for the past month, including resolution of all mild tension headaches she occasionally suffered

from before the accident. In addition, she was sleeping throughout the night without medication.

## Discussion

Motor vehicle accidents are widespread in this country leading to over three million injuries with an extremely high incidence of headaches following head trauma. One study suggests this number may reach 84 percent of all people involved in motor vehicle accidents.<sup>8,9</sup> Posttraumatic syndrome refers to headache accompanied by neurological disturbances such as impaired concentration, malaise, and vertigo following head trauma.<sup>6</sup> The patient, discussed in this case, suffered from all these and more.

Posttraumatic headaches can develop a chronic course and remain extremely difficult to treat.<sup>9,10,11</sup> Patients can be referred to a headache clinic and treated with a variety of medications from analgesics to antidepressants. The patients who suffer from these headaches can have a marked alteration in their life-style and continuing discomfort unrelieved by medications.<sup>4</sup> In addition, the medication approach can result in unwanted side effects which can be quite severe. Therefore, the use of an effective physical medicine treatment plan should be considered.

## Conclusion

In this case the physical medicine approach, including osteopathic manipulative medicine, was a benefit to the patient in the treatment of a posttraumatic headache.

## References

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# Affiliated Organization's CME Calendar

## June 14-18

### Basic Course

#### "Osteopathy in the Cranial Field"

The Cranial Academy

Hours: 40 Category 1A

CCOM

Downers Grove, IL

Contact: Patricia Crampton, Exec. Dir.

(317) 594-0411

## June 19-22

### Annual Conference

The Cranial Academy

Hours: 40 Category 1A

Intercontinental Hotel, Downtown

Chicago, IL

Contact: Patricia Crampton, Exec. Dir.

(317) 594-0411

## August 1-3

### Intermediate Course "The Face"

Sutherland Cranial Teaching Foundation

Courtyard by Marriot, Lexington, Kentucky

Hours: 14 Category 1A

Contact: Judy Staser

(817) 735-2498

## August 4-8

### Basic Cranial Course

Viola Frymann, DO, FAAO, Course Director

Claremont, CA

Hours: 40 Category 1A

Contact: Marlene Weyuker

(916) 447-2004

## August 8-10

### Jones' Counterstrain

Eastmoreland Hospital and

Northwest Osteopathic Medical Foundation

Eastmoreland Hospital, OMM Dept.

Portland, OR

Hours: 20 Category 1A

Contact: Al Turner, DO

(503) 230-2501

## August 9-10

### Sutherland's Methods

#### for Treating the Rest of the Body

Dallas Osteopathic Study Group

Dallas, TX

Hours: 16 Category 1A

Contact: Conrad Speece, DO

(214) 321-2673

## September 13-14

### Osteopathy in the 90s - Annual Update

Arizona Academy of Osteopathy

Hours: 11 Category 1A

Poco Diablo Resort

Sedona, AZ

Contact: Marilyn Wells, DO

(602) 266-5055

## September 25-28

### 26th Annual Fall Convention

New England Osteopathic Association

Summit Hotel and Conference Center

Bethel, ME

Hours: 28 Category 1A

Contact: Denise Gendron

(207) 283-0171

## September 29 - October 3

### Intermediate Cranial Course

Viola Frymann, DO, FAAO, Course Director

Claremont, CA

Hours: 40 Category 1A

Contact: Marlene Weyuker

(916) 447-2004

## October 4-5

### OMT and the Hospitalized Patient

#### (Hands-on in the Hospital)

Eastmoreland Hospital and

Northwest Osteopathic Medical Foundation

Eastmoreland Hospital, OMM Dept.

Portland, OR

Hours: 14 Category 1A

Contact: Al Turner, DO

(503) 230-2501

## October 4-6

### SCTF Intermediate Course

#### "Osteopathic Utilization of Optometry"

UNECOM; Biddeford, ME

Hours: 27 Category 1A

Contact: Joseph Field, DO

(207) 967-3311

## October 10-12

### Continuing Studies

#### "The Cranial Base Revisited"

Sutherland Cranial Teaching Foundation

UNECOM, Biddeford, Maine

Hours: 16 Category 1A

Contact: Judy Staser

(817) 735-2498