Physical Treatments for Headache: A Structured Review

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Background.—Primary headache disorders, especially migraine, are commonly accompanied by neck pain or other symptoms. Because of this, physical therapy (PT) and other physical treatments are often prescribed. This review updates and synthesizes published clinical trial evidence, systematic reviews, and case series regarding the efficacy of selected physical modalities in the treatment of primary headache disorders.

Methods.—The National Library of Medicine (MEDLINE), The Cochrane Library, and other sources of information were searched through June 2004 to identify clinical studies, systematic reviews, case series, or other information published in English that assessed the treatment of headache or migraine with chiropractic, osteopathic, PT, or massage interventions.

Results.—PT is more effective than massage therapy or acupuncture for the treatment of TTH and appears to be most beneficial for patients with a high frequency of headache episodes. PT is most effective for the treatment of migraine when combined with other treatments such as thermal biofeedback, relaxation training, and exercise. Chiropractic manipulation demonstrated a trend toward benefit in the treatment of TTH, but evidence is weak. Chiropractic manipulation is probably more effective in the treatment of tension-type headache (TTH) than it is in the treatment of migraine. Evidence is lacking regarding the efficacy of these treatments in reducing headache frequency, intensity, duration, and disability in many commonly encountered clinical situations. Many of the published case series and controlled studies are of low quality.

Conclusions and Recommendations.—Further studies of improved quality are necessary to more firmly establish the place of physical modalities in the treatment of primary headache disorders. With the exception of high velocity chiropractic manipulation of the neck, the treatments are unlikely to be physically dangerous, although the financial costs and lost treatment opportunity by prescribing potentially ineffective treatment may not be insignificant. In the absence of clear evidence regarding their role in treatment, physicians and patients are advised to make cautious and individualized judgments about the utility of physical treatments for headache management; in most cases, the use of these modalities should complement rather than supplant better-validated forms of therapy.

Key words: physiotherapy, manipulation, chiropractic, osteopathy, headache, migraine

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Physical manipulation or treatments, including physical therapy (PT), massage, chiropractic therapy, and osteopathic manipulation, are commonly recommended to and sought by patients who experience a variety of primary headache disorders, including migraine and tension-type headache (TTH). There is some basis for the belief that these treatments, many of which focus on the cervical spine, can be beneficial in treating certain headache disorders, since pain that occurs in the head may frequently arise from or be influenced by the various soft tissue, neurogenic, or osseous structures of the head, neck, and upper body (Table 1).1-7

Pronounced levels of muscle tenderness, as well as postural and mechanical abnormalities, have been reported in tension-type and migraine headache.8-11 Differences in neck posture and the presence of myofascial trigger points were observed in subjects with migraine, TTH, or both, when compared to a control group of nonheadache subjects.11 Importantly, there were no significant differences observed between any of the headache groups. Neck pain is a common and
prominent symptom of migraine.8,12-14 Recurrent intense shoulder pain in one identified case was abolished by a traditional migraine treatment, propranolol, after multiple orthopedic interventions were unsuccessful.15

Conversely, head pain can be referred from the cervical spine or soft tissues of the neck. Functional convergence of upper cervical and trigeminal nociceptive pathways may allow referral of pain from the neck to the trigeminal sensory receptive fields of the face and head.16 Efforts have been made to develop a set of diagnostic criteria for head and face pain that are a consequence of neck disorders, which is often referred to as cervicogenic headache.17,18 The Cervicogenic Headache International Study Group has proposed diagnostic guidelines for this condition (Table 2). The clinical features of cervicogenic headache might coexist with or mimic those of primary headache disorders such as TTH or migraine, or more vaguely mimic symptoms of less prevalent headache disorders such as cluster headache and hemiocrania continua, as a result distinguishing among these headache types can occasionally be difficult.

Despite the potential rationale for and ubiquity of physical treatments for headache, there has been no recent update or synthesis of the evidence supporting their use. The evidence-based recommendations of the United States Headache Consortium, published in 2000, were developed after a literature review performed over 5 years ago.19 To assist patients suffering from headache and their physicians in decisions about appropriate treatment, this review is presented to update and synthesize the literature-based evidence regarding the utility of physical treatments in the management of primary headache disorders.

METHODS

The National Library of Medicine (MEDLINE), The Cochrane Library, and the American Academy of Neurology’s Evidence-Based Guidelines were searched through June 2004 to identify studies, systematic reviews, case series, or other information published in English that assessed the treatment of headache or migraine with chiropractic, osteopathic, PT, or massage interventions. The key words used in the search were: physiotherapy; manipulation; mobilization; chiropractic; osteopathic; and massage combined with the key words of headache or migraine. Because acupuncture probably exerts its effects through central mechanisms such as alterations in endogenous opioid levels, this review does not include studies assessing acupuncture as a single treatment in our review. Similarly, it does not assess the use of anesthetic procedures such as trigger point injections or nerve blocks, because they involve the use of pharmacological agents that have local and possibly systemic effects.

RESULTS

Results of the structured review are summarized in tabular form (Table 3) and abstracted in this section.

### Spinal Manipulation for Mechanical Neck Disorders Without and With Headache

Thirty-three trials of spine manipulation and mobilization, used either alone or combined with other treatments for management of mechanical neck disorders with or without headache, that met the reviewers’ chosen quality criteria were assessed in a recent Cochrane Collaborative review.20 To be included in the review, studies had to be randomized trials, controlled trials, or quasi-randomized trials. The review assessed pain relief, functional disability, patient satisfaction, and global perceived effect in adults with mechanical neck disorders. Forty-two percentage of the 33 trials were deemed to be of acceptable quality. Single sessions of spinal manipulation or multiple sessions of manipulation, mobilization or both over a range of 3 to 11 weeks demonstrated no significant benefit in pain relief.
Table 2.—The Cervicogenic Headache International Study Group

**Major Criteria of Cervicogenic Headache**

(I) Symptoms and signs of neck involvement:

(a) Precipitation of head pain, similar to the usually occurring one:

(1) By neck movement and/or sustained awkward head positioning, and/or

(2) By external pressure over the upper cervical or occipital region on the symptomatic side

(b) Restriction of the range of motion (ROM) in the neck

(c) Ipsilateral neck, shoulder, or arm pain of a rather vague nonradicular nature or, occasionally, arm pain of a radicular nature

Points (I) (a through c) are set forth in a surmised sequence of importance. It is obligatory that one or more of the phenomena in point (I) are present. Point (a) suffices as the sole criterion for positivity within group (I); points (b) or (c) do not. Provisionally, the combination of (I) (b and c) has been set forth as a satisfactory combination within (I). The presence of all three points (a, b, and c) fortifies the diagnosis (but still point (II) is an additional obligatory point for scientific work).

(II) Confirmatory evidence by diagnostic anesthetic blockades. Point (II) is an obligatory point in scientific works.

(III) Unilaterality of the head pain, without sideshift. For scientific work, point (III) should preferably be adhered to.

**Head Pain Characteristics**

(IV)

(a) Moderate-severe, nonthrobbing, and nonlancinating pain, usually starting in the neck

(b) Episodes of varying duration, or

(c) Fluctuating, continuous pain

**Other Characteristics of Some Importance**

(V)

(a) Only marginal effect or lack of effect of indomethacin

(b) Only marginal effect or lack of effect of ergotamine and sumatriptan

(c) Female sex

(d) Not infrequent occurrence of head or indirect neck trauma by history, usually of more than only medium severity

None of the single points under (IV) and (V) are obligatory.

**Other Features of Lesser Importance**

(VI) Various attack-related phenomena, only occasionally present:

(a) Nausea

(b) Phonophobia and photophobia

(c) Dizziness

(d) Ipsilateral “blurred vision”

(e) Difficulties on swallowing

(f) Ipsilateral edema, mostly in the periocular area

relief when assessed against placebo, control groups, or other treatments for acute, subacute, or chronic mechanical neck disorders with or without headache. There was strong evidence of benefit favoring multimodal care over a “waiting list” control group on endpoints of pain reduction, improvement in function and global perceived effect for subacute and chronic mechanical neck disorders with or without headache. The common elements of the multimodal treatment group were manipulation and/or mobilization, plus a course of exercise. The reviewers’ conclusions were that multimodal care had short-term and long-term maintained benefits for subacute and chronic mechanical neck disorders with and without headache. The evidence did not favor manipulation and/or mobilization done alone or in combination with various other physical medicine interventions. There was insufficient evidence to reach a conclusion about efficacy for neck disorders with radicular neurological findings. The reviewers suggested that the added benefit of exercise required further exploration. Some agreement was found in another study that demonstrated substantial reductions in migraine pain severity, frequency and duration resulting from regular long-term aerobic exercise.21

**PT for TTH (Episodic and Chronic).**—Several studies or systematic reviews that evaluated the efficacy of PT in the management of TTH were identified. A recently published controlled trial evaluated the effect of physiotherapy on frequent episodic or chronic TTH
<table>
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<tr>
<th>Author, Year</th>
<th>Study Characteristics</th>
<th>Results</th>
</tr>
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<tbody>
<tr>
<td>Gross, 2004</td>
<td>Mechanical neck disorders HA</td>
<td>No benefit from SMT alone compared to placebo treatment, controls, or traditional medical treatment. Strong evidence of benefit from combination of SMT and exercise.</td>
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<tr>
<td>Narin, 2003</td>
<td>Migraine&lt;br&gt;Aerobic exercise (1 hr × 3days/week × 8 weeks)</td>
<td>VAS:&lt;br&gt;Tx group: 8.8±1.7 to 4.0±1.4&lt;br&gt;Control group: 8.5±0.8 to 7.0±0.9&lt;br&gt;QoL measures improved in Tx group</td>
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<tr>
<td>Niere, 1998</td>
<td>HA (unspecified)&lt;br&gt;PT (manipulation)</td>
<td>High HA frequency predicted positive response to treatment.&lt;br&gt;Diet triggers, unilateral HA, low HA frequency, and affective pain descriptors predicted negative response.</td>
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<tr>
<td>Carlsson, 1990</td>
<td>Chronic TTH&lt;br&gt;PT versus acupuncture&lt;br&gt;R (n = 62 PT or acupuncture), nontreatment comparator (n = 30)</td>
<td>Reduced HA intensity and muscle tenderness after both treatments (greater reduction in PT group)</td>
</tr>
<tr>
<td>Vernon, 1995</td>
<td>TTH and Migraine&lt;br&gt;Chiropractic&lt;br&gt;Literature review (9 trials for TTH, 4 R, n = 729, 613 treated), (3 trials for migraine, 1 R, n = 200, 156 treated)</td>
<td>No convincing evidence for effective pain control after chiropractic or massage.</td>
</tr>
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<td>Bronfort, 2001</td>
<td>TTH, Migraine, Cervicogenic HA&lt;br&gt;Spinal manipulative treatment&lt;br.SYSTEMATIC review (9 trials), R, PC or active comparator, n = 683</td>
<td>SMT demonstrated short-term efficacy similar to amitriptyline for chronic TTH and migraine. SMT more effective than massage for cervicogenic HA.</td>
</tr>
<tr>
<td>Astin, 2002</td>
<td>TTH, Migraine, Cervicogenic HA&lt;br&gt;SMT&lt;br SYSTEMATIC review (8 trials), R, PC or active comparator</td>
<td>Evidence did not support the efficacy of SMT for headache management.</td>
</tr>
<tr>
<td>Nelson, 1998</td>
<td>Migraine&lt;br&gt;SMT, amitriptyline, or both&lt;br&gt;R, active comparator, 8-week parallel group comparison, n = 218</td>
<td>Reduction of Headache Index in all 3 treatment groups. Combination treatment demonstrated no advantage.</td>
</tr>
<tr>
<td>Parker, 1978</td>
<td>Migraine&lt;br&gt;SMT by medical practitioner or physical therapist.&lt;br&gt;SMT by chiropractor.&lt;br&gt;Cervical mobilization by medical practitioner or physical therapist (control group).&lt;br&gt;R, 6-month treatment trial, n = 85</td>
<td>No difference was demonstrated in any treatment group in regards to HA frequency, duration, or HA-related disability. SMT by a chiropractor reduced attack pain intensity compared to the other treatment groups.</td>
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<tr>
<td>Marcus, 1998</td>
<td>Migraine</td>
<td>PT alone was less effective than RTB (13% vs 51%) demonstrating 50% reduction in HA Index. PT can be effective for subjects failing RTB. RTB can be effective for subjects failing PT.</td>
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HA, headache; TTH, tension-type headache; SMT, spinal manipulative treatment; PT, physical therapy; R, randomized; PC, placebo controlled; VAS, visual analog scale; Tx, treatment; QoL, quality of life; RTB, relaxation and thermal biofeedback.
compared to a nontreatment control group. Fifty patients were evaluated (26 with frequent episodic TTH and 24 with chronic TTH) and randomized into two study groups after a 4-week run-in period. Group 1 received 8 weeks of standardized physiotherapy and group 2 received 8 weeks of observation followed by an identical course of physiotherapy. After the physiotherapy was completed all were observed for a period of 12 weeks. The researchers evaluated and compared the number of headache days, severity and duration of headache episodes, and use of symptomatic drugs before and after physiotherapy. Group 1 demonstrated a 28% reduction in number of headache episodes ($P < .001$) and group 2 had a 22% reduction ($P < .001$). Headache severity and duration as well as drug consumption were unchanged throughout the study. Women seemed to do better than men ($P < .02$). No differences were found between patients who experienced pericranial muscle tenderness and those who did not. Interestingly, the number of responders in the chronic TTH group was significantly greater than those with frequent episodic TTH ($P < .002$).

A similar observation was reported in another study that found high headache frequency at baseline had a positive predictive value for successful response to physiotherapy while low headache frequency, unilateral headache, history of dietary aggravating factors, and affective pain descriptors had a negative predictive value.

A randomized study evaluated the effect of acupuncture or physiotherapy on muscle tenderness associated with TTH. Sixty-two women with chronic TTH were randomized into either an acupuncture or physiotherapy treatment group. Headache intensity, muscle tenderness, and neck mobility were assessed before and after treatment. Thirty healthy women comprised a no-treatment control group. Prior to treatment, the patient group had increased muscle tenderness and reduced neck rotation compared to controls. There was good correlation between the intensity of head pain and muscle tenderness. After treatment, the intensity of headache and muscle tenderness was reduced in both the acupuncture and physiotherapy treatment groups. The headache intensity was improved to a greater degree in the physiotherapy group and there was a marked reduction in analgesic medication use. Tenderness was reduced in all muscles tested in the physiotherapy group but in only some muscles within the acupuncture treatment group. Restriction of neck rotation was not influenced by either treatment.

A case series of 20 patients with a diagnosis of TTH were treated in a PT clinic once a week for six visits. A 3-week run-in (control) period was used as the baseline during which the subjects recorded headache frequency, duration, and intensity using a numeric pain scale. The Sickness Impact Profile and verbal reports of headache frequency, duration, and intensity were recorded at four time points (precontrol, pretreatment, post-treatment, and 12-month follow-up). Treatment included education for controlling posture at home and in the workplace, isotonic home exercise, massage, and stretching of the cervical spine muscles. Results indicated that frequency of headaches and the Sickness Impact Profile scores were significantly improved ($P < .001$) over the course of treatment and maintained after 12 months.

**Cervical Spinal Manipulation for Headache (Tension-Type and Migraine).**—Several systematic reviews, cases series, and controlled studies that examined the efficacy of cervical manipulative treatment in the management of headache were identified. A recently published article provided the results of a systematic review evaluating the efficacy of chiropractic medicine and massage therapy for the treatment of any type of pain including headache. Four chiropractic and two massage therapy clinical trials were evaluated. Although there was some “promising evidence” or trends found in some of the studies, the author concluded that the efficacy of either intervention in controlling musculoskeletal or other pain has not been convincingly demonstrated through rigorous clinical trials. Another systematic review examined published outcome studies of chiropractic manipulation for TTH and migraine headaches. Of the nine studies reporting quantitative outcomes of manipulation for TTHs, four were randomized clinical trials and five were case series. These studies reported on 729 subjects, 613 of who received manipulation. The reported outcomes ranged from “good” to “excellent.” Manipulation appeared to be better than no treatment or some types of mobilization and ice, and
was at least equivalent to the efficacy of amitriptyline in the management of TTH. Of the three studies for migraine, only one was a randomized trial. These studies reported on 202 subjects, 156 of who received manipulation. The reported outcomes ranged from “fair” to “very good.” The reviewer’s final conclusion was that the overall results for evaluating the use of chiropractic treatment in the management of TTH and migraine were “encouraging” from “a modest body of clinical studies” even if “not quite supportive.” The reviewer went on to state that further studies in this area are definitely warranted, particularly well-controlled studies in migraine management.

A systematic review of randomized clinical trials was conducted to assess the effectiveness of spinal manipulative therapy (SMT) for chronic headache (TTH, migraine, and cervicogenic).28 Trials were included if they compared SMT with other interventions or placebo. Nine trials involving 683 patients with chronic headache were included. It was determined that the trials were too heterogeneous in terms of the clinical characteristics, control groups, and outcome measures evaluated to warrant statistical pooling. Based on predefined criteria, there was moderate evidence that SMT has short-term efficacy similar to amitriptyline in the prophylactic treatment of chronic TTH and migraine. SMT does not appear to improve outcomes when added to soft-tissue massage for episodic TTH. There is moderate evidence that SMT is more efficacious than massage for cervicogenic headache. The reviewers concluded that these findings were based on only a few trials of adequate methodological quality and further studies that are rigorously designed, executed, and analyzed with a sufficient period of follow-up were needed before any firm conclusions could be made.

In yet another systematic review of spinal manipulation for the treatment of headache disorders, the conclusions were similar to the others.29 Eight trials were found that met the reviewers’ inclusion criteria (three for TTH, three for migraine, one for cervicogenic, one for “spondylogenic” chronic headache). The reviewers identified methodological limitations in most trials. They concluded that, despite claims that spinal manipulation is an effective treatment for headache, available evidence did not support a definitive conclusion and was uncertain as to what extent the observed treatment effects could be explained by manipulation or by nonspecific factors such as personal attention or patient expectation.

Cervical Spinal Manipulation for Migraine.—A prospective, randomized, parallel-group comparison examined the relative efficacy of spinal manipulation, amitriptyline or a combination of both therapies for the prophylaxis of migraine.30 A total of 218 patients with a diagnosis of migraine were randomized into one of the three study groups for an 8-week course of treatment. The reduction of headache index during the last 4 weeks of treatment compared to baseline was 49% for amitriptyline, 40% for spinal manipulation, and 41% for the combination group ($P = .66$). During the 4-week follow-up period the reduction from baseline was 24% for amitriptyline, 42% for spinal manipulation, and 25% for the combined group ($P = .05$). The researchers concluded that there was no advantage to combining amitriptyline and spinal manipulation for the treatment of migraine. Spinal manipulation seemed to be as effective as amitriptyline, a well-established and efficacious treatment for migraine, and the researchers suggested that manipulation should be regarded as a viable treatment option for patients with frequent migraine headaches especially considering the well-known side-effect profile associated with amitriptyline.

A controlled trial to evaluate the efficacy of cervical manipulation for the treatment of migraine reported that cervical manipulation performed by a chiropractor was no more effective than cervical manipulation or mobilization performed by a medical practitioner or physiotherapist in reducing migraine frequency, duration, or disability.31 For all groups, migraine symptoms were significantly reduced. Overall, the chiropractor-treated group reported a greater reduction in pain intensity associated with migraine attacks.

It is worth mentioning the long-standing concern regarding the potential for serious complications including vascular injury and overall safety of cervical spine manipulation. It has been reported that chiropractic manipulation increases the risk of vertebral artery dissection and stroke or transient ischemic attack approximately sixfold.32 The relative risk for
serious consequences associated with spinal manipulative treatment continues to be an issue of contentious discussion.

PT Plus Relaxation Therapy and Biofeedback for Migraine.—A university-based pain treatment center reported the effect of PT in the treatment of migraine and evaluated the utility of PT as an adjunctive treatment in patients who fail to improve with relaxation training and thermal biofeedback (RTB).33 PT alone was found to be ineffective in reducing headache with only 13% of subjects reporting significant headache reduction compared to 51% in the RTB group. The mean headache reduction was 15.6% after PT compared to 41.3% after RTB. However, PT added as an adjunctive treatment to RTB was found effective in 47% of 11 patients who failed to improve with RTB alone.

Physical Treatments for Migraine (Systematic Review).—The United States Headache Consortium developed evidence-based guidelines for migraine treatments after an extensive review of the medical literature and compilation of expert consensus. Based on this review, they published guidelines for the utility of behavioral and physical treatments among other issues on the topics of the migraine diagnosis and management.19 Their findings stated that there is very little evidence to evaluate cervical manipulation as a preventive or acute treatment for migraine. A single trial of cervical manipulation was identified when the review was conducted that compared three interventions: cervical manipulation performed by a medical practitioner or physiotherapist, cervical manipulation performed by a chiropractor, and cervical mobilization performed by a medical practitioner or physiotherapist. The latter was used as the control group. In all groups, the post-treatment scores were significantly better than pretreatment scores for headache frequency, severity, and disability, but not for duration. Comparison between the chiropractic treatment group and the control cervical mobilization group showed no difference. The final recommendation stated that evidence-based treatment recommendations are not yet possible regarding the use of cervical manipulation for the preventive or acute treatment of migraine.

<table>
<thead>
<tr>
<th>Table 4.—Practical Treatment Recommendations Based on This Structured Review</th>
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<tr>
<td><strong>Tension-type headache</strong></td>
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<tr>
<td>1. Physical therapy (especially in high frequency tension-type headache)</td>
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<tr>
<td>2. Possibly chiropractic treatment (consider cervical vascular risk)</td>
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<tr>
<td><strong>Migraine</strong></td>
</tr>
<tr>
<td>1. Physical Therapy combined with aerobic exercise</td>
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<tr>
<td>2. Physical Therapy combined with relaxation therapy and thermal biofeedback</td>
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<tr>
<td><strong>Chronic tension-type headache</strong></td>
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<tr>
<td>1. Cervical spinal manipulative therapy (SMT) found as effective as amitriptyline in short-term use</td>
</tr>
<tr>
<td><strong>Cervicogenic headache</strong></td>
</tr>
<tr>
<td>1. Cervical spinal manipulative therapy (SMT) more effective than massage</td>
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</table>

DISCUSSION AND RECOMMENDATIONS

With the exception of high velocity chiropractic neck manipulation, which has been associated with vertebral artery dissection, physical treatments for primary headache are unlikely to be harmful. However, evidence that favors a positive recommendation for their use is available for only a few clinical situations (Table 4). This structured review of the medical literature suggests the following conclusions and practical treatment recommendations regarding physical treatments for headache management.

**TTH.**—PT is more effective than massage therapy or acupuncture for the treatment of TTH. PT for the treatment of TTH is most beneficial for patients with a high frequency of headache episodes. Chiropractic manipulation demonstrated a trend toward benefit in the treatment of TTH but evidence is weak.

**Migraine.**—PT is most effective for the treatment of migraine when combined with other treatments such as thermal biofeedback, relaxation training, and exercise.

Chiropractic manipulation is probably more effective in the treatment of TTH than it is in the treatment of migraine but quality studies are lacking.

**General Statements.**—Neck manipulation or mobilization and PT are most beneficial when combined with an exercise plan (multimodal treatment). Thus, when recommending PT for the treatment of headache, the prescription should specify training in
exercise, stretching, and ergonomics for use at home and in the workplace.

Chiropractic manipulation appears to be no more effective than manipulation or mobilization performed by a medical practitioner or physical therapist. Chiropractic manipulation may be as effective as amitriptyline in the short-term management of frequent migraine headache or chronic TTH, but without common medication side effects. Spinal manipulation appears to be more beneficial than massage therapy for the treatment of cervicogenic headache. However, the rare but serious risk of vertebral artery dissection or stroke associated with certain forms of cervical manipulation suggests the need for reasonable caution when considering a recommendation for this treatment. Warnings of these potentially serious complications to patients contemplating chiropractic treatment may be appropriate.

In the databases queried, no trials were found that reported the use or efficacy of osteopathy or osteopathic manipulative treatment in the treatment of headache. Thus, recommendations about the benefits or harms of such treatment can only be made on the basis of personal experience or belief.

This review has several limitations. Within the studies identified, authors did not often explicitly or consistently define terms such as “physical therapy,” “chiropractic manipulation,” “osteopathic manipulation,” “migraine,” and others. This heterogeneity of interventions and patient populations limits the ability to draw firm and specific conclusions about both the interventions studied and the patient group most likely to benefit from them. This, more than any other failing, suggests that conservatism is prudent in making positive recommendations for such treatment. The nonspecific beneficial effects of treatments that involve frequent therapist contact were not addressed in most studies, and may be of considerable importance. Although most of the treatments lack the adverse effects traditionally associated with drug therapy for primary headache, other treatment costs or penalties were rarely considered. These include financial costs of treatment, and personal costs to patients for whom such therapy is ineffective, including the cost of lost or delayed opportunity to use more effective therapy, disillusionment associated with failed therapy and untimely treatment dropout by patients who incorrectly conclude that other treatment for headache is likely to be ineffective. Finally, limited evidence is available that allows comparison of these treatments with others that have more firmly established value in headache treatment.

CONCLUSIONS

Primary headache disorders, especially migraine, are commonly accompanied by neck pain or other symptoms. Because of this, PT and other physical treatments are often prescribed. Available evidence provides only modest support for the use of these treatments in selected circumstances. Evidence is lacking regarding the efficacy of these treatments in reducing headache frequency, intensity, duration and disability in many commonly encountered clinical situations. Additionally, many of the published case series and controlled studies are of low quality. Further studies of improved quality are necessary to more firmly establish the place of these modalities in the treatment of primary headache disorders. With the exception of high velocity chiropractic manipulation of the neck, the treatments are unlikely to be physically dangerous, although the financial costs and lost treatment opportunity by prescribing potentially ineffective treatment may not be insignificant. In the absence of clear evidence about their place in treatment, physicians and patients are advised to make cautious and individualized judgments about the utility of physical treatments for headache. In most cases, their use should complement, not supplant, better-validated forms of therapy.

REFERENCES


15. Personal experience [case report].


