

Is It Time for Rheumatologists to Rethink the Use of Manual Therapies?



Physicians and especially rheumatologists have maintained a respectful distance from the world of complementary medicine in general, and alternative practitioners in particular. The justification for this relationship, or rather lack thereof, has been the importance to the medical profession of evidence based medicine, a factor that is mostly lacking in alternative medicine. Even so, the public's acceptance of treatments by alternative practitioners has become increasingly widespread, and encompasses a major portion of healing in the developing world¹. Recent publications in the mainstream medical literature have reported the benefits of a particular category of "hands-on" therapy, namely manual therapy, given in one study by osteopathic practitioners for low back pain, and in the other by physiotherapists for knee osteoarthritis (OA)^{2,3}. In the context of such widespread use by the public of physical intervention treatments, recent reported success rates, and our own poor understanding of the exact nature of these treatments, it is perhaps timely that physicians should begin to enter into dialogue with practitioners of manual therapies in order to define common ground and further our understanding of interventions that to date remain somewhat mystical to our understanding.

WHICH PATIENTS MIGHT BENEFIT FROM "HANDS-ON" THERAPY?

A starting point could be the management of rheumatologic soft tissue and mechanical problems, an area that poses particular frustration for rheumatologists. Tremendous strides have been made in the knowledge of inflammatory arthritis in the past decade, but sadly no such dramatic advances have occurred in the realm of soft tissue rheumatism. Soft tissue problems are both common and important, and represent almost a quarter of new patients referred to rheumatologists, and include tendonitis, bursitis, regional pain syndromes, and referred pain from the spine⁴. The understanding of the mechanisms pertaining to soft tissue processes is generally poor, treatments are mostly empiric without sound scientific evidence, and outcome is often unsatisfactory. The usual practice of physicians in treating these conditions tends to be pharmacologically driven, often with inadequate response to medications or resulting side effects, which for medications such as the nonsteroidal antiinflammatory drugs (NSAID) may be

potentially harmful. It therefore seems reasonable that rheumatologists should begin to explore other treatment options. With this in mind we might begin to critically examine the function and capabilities of selected practitioners who provide treatments that may complement standard medical care in areas where our management is suboptimal.

Having acknowledged our own shortcomings in dealing with soft tissue processes, it seems logical to look more carefully at the practice and treatment outcomes of manual therapists to determine whether these treatments may play a role in the management of such disorders. Exactly how manual practitioners function is surrounded by an aura of the unknown for the medical profession. Manual therapists use 2 major techniques, namely manipulation and massage. Manipulation mostly pertains to spinal problems, whereas massage may be used in the more general context of soft tissue abnormalities. Although proponents of these treatments contend that there is ample evidence to support their efficacy, careful review of the literature indicates that although there have been many studies of manipulation and manual therapies, these are generally of poor quality, thus confounding conclusions. The most commonly observed deficiencies of studies include inadequate definition of patient groups regarding diagnosis, physical treatments often combined with other interventions, and variable outcome measures⁵⁻⁸. Shekelle, *et al* concluded that spinal manipulation is one among several treatments for back pain that may be beneficial, but the contribution of manipulation as it stands alone is unclear and requires further study⁵. Similarly, the findings of the Quebec Task Force on Whiplash-Associated Disorders indicate that there are a number of treatments that may be beneficial for the relief of acute pain, including early mobilization and return to normal activities, use of analgesics, NSAID, and occasionally narcotics, and manipulative treatments⁹. Once again there is a strong criticism of quality of studies showing methodologic failings⁹. Massage, although commonly used, has rarely been adequately studied, and clearly warrants further evaluation.

The management of soft tissue processes by massage seems a reasonable area to warrant further investigation. It is likely that many of the nebulous pain syndromes, including referred pain from the spine, regional pain syndromes, and possibly even tendonitis and bursitis, may be aggravated and

perpetuated by ongoing muscle spasm. The treatment of muscle spasm and subsequent pain reduction may be an important factor towards recovery. Massage has been used for decades in the sporting world and is even used for horse rehabilitation¹⁰. The mechanism by which massage may work in musculoskeletal pain is speculative. There is suggestion that depression of spinal motor neurone excitability may be induced by deep tissue massage with resulting modulation of pain mechanisms¹¹. The success of such therapies may reflect the interruption of a pain cycle and the relaxation of associated protective muscle spasm.

WHICH PRACTITIONER IS BEST QUALIFIED TO PROVIDE MANUAL TREATMENTS?

There are a large variety of practitioners practicing manipulation and massage techniques. How to determine which treatment intervention might be most successful, or which practitioner has the best training, is a daunting task. Perhaps we would do well to turn our attention to a group of practitioners who have undergone standard training and require registration with a licencing body. Chiropractors are one such group, whose treatments are directed predominantly towards disorders of the spine and soft tissues. This discipline has been regulated in the United States and Canada since the 1920s¹², and their services are mostly reimbursed by third-party payers. The licencing of practitioners does not guarantee quality of care, but rather offers reassurance that a certain standard of care is required. Other practitioners offer treatments of manual therapy, including osteopaths and massage therapists, and thus the public may confuse individuals practising manual therapies, often with only rudimentary training, as being bona fide qualified practitioners. There is also confusion in understanding the differences in both practice and abilities of the numerous practitioners of manual therapies. It might also be possible that some of the reported adverse events due to manual therapies may be due to treatments by individuals with inadequate training.

WHY THE SKEPTICISM FOR THE TREATMENTS BY MANUAL THERAPISTS?

There are a number of reasons why standard medicine has retained a guarded opinion of the world of alternative therapies that include “hands-on” treatments. There is intrinsic distrust of treatments that we do not fully understand. We are rightly skeptical of the too-precise anatomical diagnosis given on the basis of a clinical examination or an often substandard radiograph. The vigorous manipulations practised by chiropractors are difficult to comprehend anatomically, and we do not understand the biomechanical explanations of “realigning” joints. Techniques practised in manual therapies include mobilization, manipulation, and massage. Mobilization is considered a passive technique where the objective is to move a joint within its physiological range, and likely presents considerably less risk to the patient. Manipulative therapy, of

which one of the most widely used techniques for the spine is termed the “high velocity thrust” maneuver, is believed to stretch myoligamentous tissues and thereby activate afferent sensory neurones with resulting modulation of pain processing mechanisms. These mechanical and neurological theories still require additional testing, confirmation, and understanding. There are some reports indicating that there is reduction of motoneuronal excitability following a manipulative treatment, suggesting a form of neurological stunning¹³. The audible “cracking” sound achieved during manipulation surely has potential to invoke a strong placebo response, irrespective of any other effect that may occur.

Complications following manipulative treatments cause greatest concern. Aggravation of symptoms is a risk, but not of as severe a consequence as a serious neurological event. The true frequency of serious events is, however, unknown, as there is no audit of number of events occurring in all patients treated. Case reports of vertebral artery dissection and other neurological consequences following cervical manipulation are a major concern¹⁴⁻²⁰.

We are also suspect of patients treated for inappropriately prolonged periods, with at times a clear financial objective in mind. This practice is, however, not seen only in the alternative medicine world. We can see similar misuse of third-party payers’ money within the medical community in protracted treatment plans given to patients with either workers’ compensation claims or motor vehicle insurance claims. The comfortable work environment of many practitioners of alternative medicine seems luxurious in contrast to the spartan surroundings of many of today’s hospitals suffering the effects of budgetary restraints. Even with all these concerns, manual practitioners maintain a healthy business practice throughout North America. The continued support of a large clientele is likely in part reflective of a successful outcome for an individual event. This is supported by a recent study indicating that patients with back pain initially treated by a chiropractor were likely to consult a chiropractor for a recurrence of the initial symptom²¹. This latter study supports the findings of an earlier study in the United Kingdom indicating that patients with chronic back pain fared better when treated by chiropractors than by hospital outpatient therapists, and this finding was upheld at an extended 3 year followup²². However, it is notable that patients treated by chiropractors had additional further treatments for back pain after the completion of the trial period²³. If treatments offered by “hands-on” therapists were mostly unsuccessful, their business practice would likely dwindle into nonexistence.

REPORTED RISKS AND OUTCOMES WITH MANUAL THERAPIES

The major concerns regarding “hands-on” treatments, which include manipulations and massage, might be attributable to a number of factors. There is the concern that these treatments may be harmful to patients, good scientific evidence for their

effectiveness is mostly lacking, and our understanding of the specific characteristics of treatments is scanty. Although there are ample reports of successful treatments, critical evaluation of the literature indicates that seldom have these treatments been tested in scientifically sound fashion, thus assigning much of the literature to anecdotal commentary. In a recent controlled trial Andersson and colleagues have shown that osteopathic spinal manipulation performed as well as standard medical care in patients with low back pain². An advantage noted in the manipulation group was that medication use was reduced². Although both groups were equally satisfied with their outcome, a reduction in medication use should be seen as a clear advantage. In another recent study, manual physical therapy and exercise performed better than placebo in OA of the knee, even after one year³. These 2 reports in the recent peer reviewed literature are thus encouraging for the use of "hands-on" treatment methods in some musculoskeletal disorders.

In contrast, we did not observe any difference in the rate of symptom reporting between patients with fibromyalgia who were or were not being treated by nonphysician practitioners²⁴. This was, however, a cross sectional study and does not take into account the change of symptoms over time, or whether the overall outcome of individual patients had been influenced. Patients being treated by practitioners generally report satisfaction with their treatments^{2,25,26}. Although massage therapy is often used for the treatment of low back pain, Ernst has recently stated that this treatment has not yet been sufficiently tested to evaluate effectively²⁷.

What therefore is the evidence of the harm caused by "hands-on" manipulative or massage treatments? In a review of the literature describing complications arising from manipulation of the cervical spine between 1925 and 1997, Di Fabio identified 177 published cases of reported injury in 116 articles¹⁹. These are mostly case reports of neurological events following vascular damage, particularly of the vertebrobasilar arteries as a result of cervical manipulation^{14-17,20}. In a literature review of risk factors for vertebrobasilar artery dissection, Haldeman, *et al* identified that about a third of 367 reported cases had onset after spinal manipulation²⁰. However, no conclusions could be drawn as to factors that might predispose patients to this disastrous complication of manipulation therapy. There have also been individual case reports of retinal artery thrombosis and vertebral osteomyelitis, the latter possibly representing a missed diagnosis rather than a complication following manipulation^{18,28}. In a review of both efficacy and complications of cervical spine manipulation for neck pain and headache, Hurwitz, *et al* reported that manipulation, in the study setting, had an estimated complication rate of the order of 5 to 10 per 10 million manipulations²⁹. It must, however, be remembered that the true frequency of complications arising from manipulation treatment is unknown, as we are dependent upon either study data or literature reports, rather than a report of adverse events

occurring in all patients treated with this modality. In that the neurological complications resulting from spinal cord injury are potentially catastrophic, physicians need to be fully cognizant of the true risks before freely recommending spinal manipulation. Deep tissue massage, a commonly performed manual therapy, is also not totally innocuous, as reports of hematoma formation at various sites including the liver, forearm, and thigh indicate³⁰⁻³². However, other than increased pain or bruising, it is unlikely that serious consequences are a common occurrence from this treatment.

CONCLUSION

We are thus challenged with treatments whose mechanisms of action are obscure and the true rate of side effects unknown, despite increasing use by our patient population. As physicians seeking the best treatment for our patients, we are clearly in a quandary. The necessity and importance of evaluating the risks and benefits of selected "hands-on" treatments for certain musculoskeletal problems should deserve better attention. Moreover, taking into account the large numbers of patients being treated by manipulation and massage, the reported frequency of serious side effects is seemingly small. This may be a consequence of underreporting, but may also reflect the relative rarity of serious consequences. As manual therapies are used throughout the Western world and have become an integral part of our patients' health care, it is time that treatments that are out of the mainstream of medical practice be thoroughly evaluated. Even in the absence of a full understanding of the mechanisms of action of a specific treatment, as occurs in much of modern medicine, the reported favorable outcome for many patients should be seen as justification to further explore both the efficacy and potential use of such treatments.

MARY-ANN FITZCHARLES, MB, ChB, MRCPUK, FRCPC,
Associate Professor of Medicine, Division of Rheumatology,
and the McGill Pain Centre, McGill University,
Montreal General Hospital, 1650 Cedar Avenue,
Montreal, Quebec H3G 1A4, Canada.
E-mail: mary-ann.fitzcharles@mhuc.mcgill.ca

Address reprint requests to Dr. Fitzcharles.

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