

## The Serial Application of Spinal MUA

Timothy L. Mills, DC

When investigating the subject of Spinal Manipulation Under Anesthesia (MUA), it becomes evident that there are two approaches to the technique and protocol. When we look at the literature which discusses spinal manipulation requiring anesthesia, we find that the majority of the literature is contributed by osteopaths and medical orthopedists who treat spinal dysfunction through the use of MUA in a single session. The authors feel that in those few cases that do not respond to repeated attempts of manipulative care in the office, require manipulation with the added influence of an anesthetic to abolish muscle tone and the protective reflex mechanisms that impede the delivery of effective manipulation. The few clinical trials that exist involving spinal MUA represent a "one-shot" application of MUA with the results varying from a 51 percent<sup>1,2</sup> to a 66 percent<sup>3</sup> "success rate" in herniated discs, to a 96.3 percent "success rate" in cases of "myofibrositis."<sup>4</sup>

The definition of "success" and the goals in MUA between practitioners may be vastly different. One practitioner's goal may simply be to give some degree of relief to the patient, where another practitioner's goal may be to restore normal long-term function to the affected areas of the spine, which would be determined by his own palpatory clinical findings as he proceeds. The serial application is a relatively recent development in technique which has evolved from the practical experience of doctors from various disciplines who have been performing MUA service.<sup>5</sup> Much of the protocol that has been written regarding the serial application of MUA has stated that MUA may be warranted anywhere between one to five times in succession. The consensus of those performing serial manipulation is that the vast majority of these cases require three consecutive days of MUA to achieve the functional spinal changes that are desired in the presence of chronic fibrosis and discopathy. The clinician employing the serial approach has a primary clinical goal, that is to restore spinal function with a resultant expectation of symptomatic relief.

There are some who feel that a single application of MUA is sufficient if the technique is applied effectively. It is true that the majority of patients who receive a single application of MUA will most likely have a favorable response if the clinical goal is simply to give the patient some or any degree of relief. Therefore, it would be considered a "success" when the patient has received some benefit from the procedure and when the practitioner can document some objective improvement which he could attribute to the single MUA application.

I have had personal experience with several patients who have not completed the series, but due to some interruption in the series had only received a single application. Each of those patients felt that they had received some benefit from the single MUA. It has been acknowledged by all the supporters of the serial approach that the first MUA could accomplish a significant improvement in both subjective and objective findings, but that a second and then a third further attenuate the restoration of normal biomechanics of the spine.

A question as to if a single or serial application is indicated should be determined on a case-by-case basis, with clinical goals being clearly defined. If the clinician's clinical goal is to simply give the

patient some degree of acute pain relief and feels that his follow-up care will build upon the gains obtained with the single procedure, then he may choose that option. Also, if the clinician feels that the application of additional anesthesia or perhaps he perceives the risks involved in repeating the manipulation are not warranted, then this would justify the selection of the single application.

It has been my personal experience with the majority of cases that have received a third application, (I have been involved in cases requiring fourth applications), that we felt that what we had accomplished in the latter application definitely confirmed the value of repeating the procedure.

In reviewing the earlier literature regarding MUA, one will discover in the sections describing the technique that mostly long-lever thrusts are employed. Many in the chiropractic community would find this technique somewhat "brutal" and carry with it unnecessary dangers. As a matter of fact, they report complications in their application to MUA, such as sheared pedicles, facetal fractures, sprains, and strains of soft tissues. It is my opinion that this type of application is an effort to do too much all at once. Maitland<sup>5</sup> states:

"Care must be taken not to manipulate under anesthesia too vigorously. Rather than trying to achieve a full range of movement in one manipulation, it is often better to manipulate more gently on two or more occasions."

It is my opinion that the serial application has a greater safety factor than a single application when the clinical goal is to fully restore intersegmental range of motion in cases of chronic periarticular or articular fibrosis. There appears to be a cumulative effect added onto the first application of the procedure, especially when major muscle groups such as the hamstring, pelvic, and paravertebral musculature is stretched gradually in series.

Under anesthesia, muscle tone is abolished and the patient's protective reflex mechanism is absent. Stretch receptors and golgi tendon apparatuses are inactivated, and when the manipulator palpates the motion of the spinal articulation, the character of the motion which he is detecting with his tactile senses is simply that of the existing anatomy, and when it is palpated that a joint has fixation, it can only be due to aberrant anatomy such as adhesion or shortening of normally elastic soft tissue due to fibrotic scar formation.

The serial application allows the manipulator to be more specific in his approach to restoring normal spinal function and also to monitor and modify his approach both to achieve maximum clinical benefit and also in consideration of patient safety concerns. The manipulator will discover that in spite of the fact that the patient is anesthetized, the fibrotic muscles and other scarred soft tissues do not simply become elastic and will find that a repeated application of intervertebral tissue stretching will allow greater intersegmental localization to take place. On the other hand, if the clinician feels that a generalized mobilization under anesthesia would suffice in a particular case, then he may choose the single application.

To summarize, I will relate the essence of a cross-country telephone conversation I had recently with a doctor who does not see the need for the serial application: He basically stated, "How do you know the patient needed a series of MUA when one single MUA may have sufficed since you normally schedule your patients for a series?" My response was, "How do you know that one is enough when you have never experienced what can be accomplished with a series?" Before any further exploration of the issue can take place, definitions and goals of a "successful" MUA must be set in light of the literature and the clinical experience of the participants. Please direct any inquiries to: Tim Mills, D.C., c/o MUA Associates of Southern California, P.O. Box 16305, Beverly Hills, California 90209-2305, (310) 273-9255.

## *References*

1. Mensor MC: Nonoperative treatment, including manipulation for lumbar intervertebral disc syndrome. *J. Bone & Joint Surg.*, 37A(5):925-936, 1955, October 1955.
2. Chrisman D, Mittnacht A, Snook GA: A study of the results following rotatory manipulation in the lumbar intervertebral disc syndrome. *J. Bone & Joint Surg.*, 46A(3):517-524, April 1964.
3. Burn JMB, Langdon L: Lumbar epidural injection for the treatment of chronic sciatica. *Rheumatology and Physical Medicine*, 10:368-374, 1973.
4. Siehl D: Manipulation of the spine under general anesthesia. *JAOA*, 62:881-887, June 1963.
5. Maitland, GD: Manipulation under anesthesia (MUA), *Vertebral Manipulation*, ed 4, Butterworths, pp 206-207, 1977.

MARCH 1993