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Pain Special Issue

MUA/MUJA: An Interdisciplinary Approach for The Treatment of Chronic Pain

Approaching spinal conditions through collaboration between osteopathic physicians and chiropractic physicians.

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Providing scientific information, practice management strategies and ACOFP news for the community of osteopathic family physicians

inside

Pain Special Issue

Pro/Con Debate on MUA/MUJA PAGE 12

Rheumatoid Arthritis PAGE 14

President's Perspective

Positive Attitudes PAGE 2

Practice Management Diversifying Services PAGE 21

Manipulation under anesthesia (MUA) has been shown to be an extremely effective approach to the treatment of chronic recalcitrant spinal pain. "Because of the advancement of new medications and the use of conscious sedation, the anesthesia element of the MUA makes the procedure one of the most easily adaptable neuromusculoskeletal treatment modalities that manual practitioners have at their disposal for chronic and certain acute neuromusculoskeletal problems."⁽¹⁾

Other disorders that have seen positive results from MUA include chronic fatigue syndrome, post-stress disorders, depression and anxiety, dysmenorrhea, sequelae of motor vehicle accidents and workplace injuries due to repetitive strain, motion or poor ergonomics.

The increasing use of MUA as an effective treatment alternative has had another unforeseen benefit – it has united the previously segregated worlds of chiropractic and osteopathic medicine. This is partly due to the fact that this advanced form of controlled spinal manipulation can only be performed by certified osteopathic and chiropractic physicians.

During evaluation by both DOs and DCs, the patient's clinical symptoms are examined during an office visit and their pain evaluated to include location, duration, intensity, radiation and exacerbating or relieving factors.

Manipulation Under Joint Anesthesia

Manipulation under anesthesia was first introduced and utilized in the United States by osteopathic physicians, mostly in orthopedic surgery for shoulder and low back pain.⁽²⁾ MUA has been widely used for centuries and recently has had major improvements in its efficacy by combining it with another mode of pain management, fluoroscopically guided intra-articular injection or Manipulation Under Joint Anesthesia (MUJA).

MUJA was first presented to the chiropractic world in 1999 at the Conference of the World Federation of Chiropractic as an alternative to office manipulation. However, there is literature that dates back to 1938 in which Halderman and Soto Hall performed a manipulation that followed an anesthesia injection of the sacroiliac joints.⁽³⁾

In 1997, Nelson, Aspergren and Bova studied the benefits of the use of epidural steroid injection and manipulation on patients with chronic low back pain.⁽⁴⁾

continued on page 10

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MUA/MUJA: An Interdisciplinary Approach for The Treatment of Chronic Pain

← continued from page 1

The increasing use of MUA as an effective treatment alternative has had another unforeseen benefit – it has united the previously segregated worlds of chiropractic and osteopathic medicine.

As described by the CPT 2004 Code 22505, spinal manipulation under anesthesia is defined as an outpatient manipulation of the posterior motor units of the spine, requiring anesthesia and designed to reduce fibroblastic proliferation, restore range of motion and visco-elasticity to the per capsular connective tissues and paravertebral musculature to areas of spinal segmental dysfunction not amenable to in office manipulation.⁽⁵⁾ MUJA is particularly effective in treating muscle spasms, chronic myalgia and disc bulges.

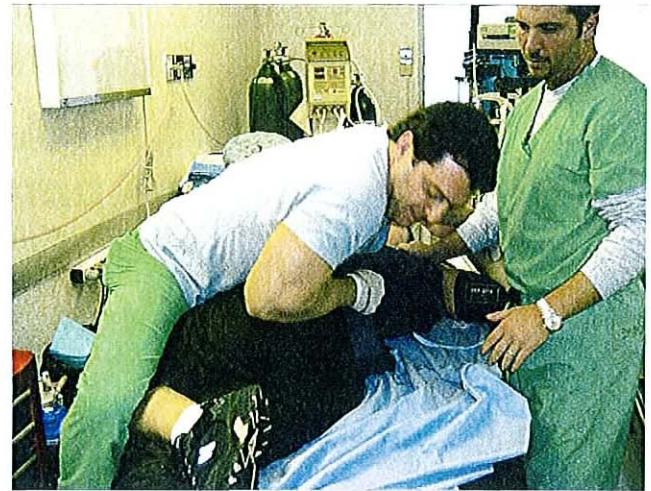
In 1992, Philip E. Greenman, DO, wrote that carrying out manipulation with the patient under general anesthesia is satisfying to the physician and usually rewarding to the patient, though the patient frequently approaches the procedure with a degree of trepidation. Manipulations are accomplished that were impossible in this patient by office procedures. As a physician's skill and confidence in his personal techniques increase, he becomes increasingly adept at relieving pain and can shorten periods of disability considerably.⁽⁶⁾

MUA and its counterpart, MUJA, is usually considered a single procedure, according to the American Academy of Osteopathy, a division of the American Osteopathic Association, but can be included in the treatment regimen within the consensus of a 'team' of specialists and performed in a hospital/surgical center.⁽⁷⁾

Discussion

Manipulation under anesthesia performed in a surgical suite setting is a controlled manual stretching of the various areas for which the patient has complaints of pain, as well as a documented history. The patient is usually diagnosed with an acute or chronic pain syndrome, primarily discogenic in nature, with documentation by MRIs of the cervical, thoracic and/or lumbar spines. EMG/nerve conduction studies may also serve as viable documentation prior to the procedure.

The patient is seen and evaluated by both the chiropractor and/or osteopathic physician initially to determine if they are a candidate for MUA. Once the patient is medically cleared and pre-authorization is obtained from their respective insurance company, they are then



scheduled for the procedure in one of several ways.

Usually, an ambulatory surgical center will schedule the patient for a three-day procedure with an osteopathic physician or chiropractor and a certified assistant, which is necessary in every case for balancing the patient when they are under conscious sedation. In addition, an operating nurse and the anesthesiologist are present.

MUA can take place over a three consecutive day period or one day a week for three consecutive weeks. It has been our experience that it is much easier on the patient's daily schedule to have the MUA done over three weeks as opposed to just three days.

Post MUA usually involves a period of at least six to eight weeks of intensive physical therapy to include stretching of the targeted areas of the body. MUA could be helpful for patients with recalcitrant fibromyalgia with or without discogenic documentation.

The essence of manipulation under anesthesia is that it is an advanced series of very structured and focused stretching techniques to improve the flexibility of the muscular system that surrounds the neuromusculoskeletal and neurovascular areas that relate to the patient's particular problem.

It is especially helpful in cases where shoulders and hips must be stretched to improve capsular integrity and joint laxity. For example, in cases of adhesive capsulitis or trochanteric bursitis, it is an excellent complementary procedure to follow such aforementioned orthopedic conditions.⁽⁸⁾

Various techniques are used to break up the muscle spasm and trigger points associated with fibromyalgia or fibrositis and these techniques are included in the MUA treatment protocol. In a recent study of 150 patients in several general practices in the Netherlands, manipulation and intervention combined were medically effective in accelerating recovery of shoulder symptoms.⁽⁹⁾

Manipulation Under Joint Anesthesia

Manipulation under joint anesthesia is a complementary procedure to MUA. Manipulation under joint anesthesia involves various injections performed by board certified pain management specialists who utilize specific epidural/face/transforaminal injection approaches for recalcitrant discogenic disorders, trauma or other related disorders.

MUJA allows the patient to receive the coordinated benefits of both the focused and dissipated solutions of a long-acting targeted steroid preparation, such as methylprednisolone injection coupled with a long-acting analgesic such as bupivacaine injection.

This is followed by a gentle focused MUJA to the particular injected areas. This not only improves the circulation to the area of somatic dysfunction or subluxation, which is related to the discogenic cause, but also relieves muscle spasms and restrictive barriers as well. It is of note that the patient is under conscious sedation and

anesthetized to the point where they do not feel the pain of the injection, nor the pain of any of the muscle fibers being stretched or lengthened with the MUJA technique. The patient is therefore not resisting what could be for him/her discomforting procedures while conscious in an office setting.

MUA and MUJA reduces excessive scar tissue build-up, the chance for muscle contracture, duration and frequency of regular outpatient spinal manipulative therapy and the percentage of resultant permanent impairment.¹¹⁰

Most insurances cover MUA and MUJA when properly pre-authorized and following your particular state's rules and regulations for these procedures. The patient can concurrently undergo weekly pharmacologic, physical therapy and other special evaluations during the time that the MUJA takes place.

Protocol

The rationale for using sedation is to allow those patients who cannot tolerate any use of manual techniques due to muscle guarding, spasm, severe pain and muscle contractures to regain their activities of daily living and begin a structured regimen of home exercises. Upon careful selection of patients by the person performing the injection and by the person delivering the manipulation, the patient is then assessed as to what type of injection will be performed at precisely what level.

The procedure is then executed in a properly equipped surgical suite to allow for an optimal setting of both injections and the manipulation to be performed. Upon completion of the injection whether an epidural, facet block, trans-foraminal, or sacroiliac, the manipulation under joint anesthesia is then performed.

A series of fascial lengthening, tendon stretching and ligamentous mobilization along with the realignment of the joints are carried through while the patient is consciously sedated. These results are attained by using passive stretches, myofascial release, and specific articular and adjustive procedures.

MUA could be helpful for patients with recalcitrant fibromyalgia with or without discogenic documentation.

The basic concept behind the mobilizing and manipulative procedures while the patient is under a sedative/hypnotic is to increase ligamentous, tendinous, and muscular flexibility. If proper screening of the patient has been performed, this level of stretching is not achievable in the traditional office routine.

Standard manipulative techniques are still used but the physiologic state of the patient is changed making them more relaxed and consequently more flexible. If used on properly selected patients, MUA and MUJA have been proven to be very cost effective and more productive overall with regard to a patient's successful return to a normal lifestyle. With properly screened patients, prolonged conservative care or possible surgical intervention could possibly be avoided.

The medication of choice used for conscious sedation is propofol. "This medication allows the patient to not respond to the initial pain stimuli with an immediate muscle contraction. The maneuvers can then be performed without losing their end range. The patient's natural protective mechanisms are present, but slowed down temporarily and pain is perceived at a lower threshold, however it is not remembered."¹¹¹

Conclusion

MUA and MUJA are excellent alternative choices for patients who continue to suffer from recalcitrant pain. There is an over abundance of chronic cases who have had no improvement with conventional approaches to neuromusculoskeletal injuries along with spinal axial pain. For this patient population a course of manipulation under anesthesia can be considered as the next phase in their treatment prior to surgical intervention.

Standardization of this protocol would allow more potential patients, who continue to suffer, a chance to get their life back and return to the activities they enjoyed prior to their injury.

An additional benefit is that MUA and MUJA directly target the area of the body which needs pain relief. Whereas, orally administered pain medications travel throughout the entire body affecting areas which do not need relief.

MUA and MUJA are unique, modern ways of approaching spinal conditions through collaboration between osteopathic physicians and chiropractic physicians that previously had not been considered.

Both procedures offer vital solutions to some of the most common musculoskeletal problems faced in primary care and outpatient pain management today. This thought, coupled with the cost effective result for pain management that insurance companies enjoy, should be reason enough to explore MUA and MUJA for patients in the United States who are properly screened and qualified.

Of course, as with any treatment option, MUA and MUJA are just that, options. Every person is unique in their makeup as well as their ailments. This is why proper screening is so vital in determining if a patient is a good candidate for either MUA or MUJA. ❧



Drs. Abend and Ferraro have performed over 5,000 MUAs/MUJAs together. Both doctors gratefully acknowledge the editing assistance of their close friend, professional columnist Alan Tecchio for his technical assistance in the production of this article.

The following Pro/Con Debate on the next two pages explores the issues surrounding when to use manipulation under anesthesia, as well as the scientific literature supporting its use.

Print this article with references at
http://www.acofp.org/member_publications/0905_1.htm