

Challenging Case in Clinical Practice: Improvement in Chronic Osteoarthritis Pain with Use of Arnica Oil Massage, Therapeutic Ultrasound, and Acupuncture—A Case Report

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Introduction

Chronic pain affects approximately one in five Canadians¹ and costs the healthcare system approximately \$62 billion each year.² The average sufferer has lived with chronic pain for six years, has tried an average of 2.4 prescribed pain medications, and their risk of committing suicide is doubled compared to those living without chronic pain.³ Osteoarthritis (OA) in particular is accompanied with chronic pain and, unlike other causes of chronic pain, does not resolve.⁴ Surgery for pain relief is indicated in some individuals. However, for those older than 80 years of age, surgical outcomes are associated with a morbidity rate of 51% and a mortality rate of 7%.⁵

This case report describes MK, an 82-year-old Caucasian female who presented with extreme deterioration from OA in her left shoulder. Following treatment with arnica oil massage, acupuncture, and later therapeutic ultrasound, MK experienced reduction in pain after three weekly treatments. Over the course of treatment, pain continued to decrease, and she regained some functionality. After 36 treatments, she has majorly reduced medication use and has cancelled a total arthroscopy surgery. No study to date exists using the combination of acupuncture with therapeutic ultrasound and arnica oil massage.

Case Presentation

Background

MK is an 82-year-old Caucasian female who presented to the fibromyalgia/myalgic encephalomyelitis shift at the Robert Schad Teaching Clinic (Toronto, Ontario) in June 2016 as a “last resort,” with extreme pain in her left shoulder. She described the pain as a “gaping cut” and rated it 11/10 (where 10 = worst). Functional limitations included requiring assistance standing from a seated position and dressing.

Her medical history included: OA of the hips and left shoulder (X-ray shows severe deterioration), hysterectomy, osteoporosis, deafness in right ear, spinal stenosis, hypertension, hypothyroidism, cervical disc disease, scoliosis, and peripheral vascular disease. Medications taken included: oxazepam, amlodipine, L-thyroxine, celecoxib 200 mg b.i.d., and acetaminophen 3 g/day to manage pain. Oral supplements on entry to the clinic included: 2,000 IU q.d. vitamin D₃, 350 mg b.i.d. calcium, and 150 mg q.d. magnesium. She had also self-prescribed diatomaceous earth orally that was started prior to treatment #1 and then discontinued by treatment #12 due to digestive upset. A future arthroscopy surgery was scheduled for October 2016.

Treatment

The first five weekly treatments consisted of arnica oil massage followed by acupuncture. The arnica oil contained 200 mg of certified organically grown *Arnica montana* flowering tops/mL in a 1:5 herb-to-olive oil ratio. The oil was massaged onto both shoulders, elbows, and knees bilaterally, for a total duration of approximately five minutes.

Acupuncture protocol utilized the points following: LI 4, LV 3, Jianneling, LI 11, ST38, and GB 34 bilaterally. LV 3 was always needled first, followed by LI 4. Needle retention ranged from 15 to 30 minutes, averaging 20 minutes (see Table 1 for point location).

On week 6, therapeutic ultrasound was introduced (Sonicator[®] 740) and performed prior to the arnica oil and acupuncture protocol. The settings used were: 3 MHz continuous cycle at 1.3–1.9 mA/cm³ for five minutes per shoulder using dye-free ultrasound gel by Wavelength[®] CL.

Additional Treatment

Dietary counseling was provided along the course of treatment to enhance joint support. However, the patient and her husband complied only with diversification of fruits and vegetables. On

Table 1. Acupuncture Point Locations^a

Point	Location
LI 4	In dorsum interosseous muscle between the 1st and 2nd metacarpal bones
LV 3	In depression distal to 1st and 2nd metatarsal bones on dorsum of foot
Jianneling	Halfway between end of anterior axillary fold and in depression anterior and inferior to the acromion near shoulder
LI 11	Halfway between lateral epicondyle of humerus and biceps brachii tendon in cubital crease near elbow
ST 38	In anterior tibialis mm on lower leg, 8 cun distal to knee
GB 34	Anterior and inferior to head of the fibula

^aKassam N, Gowan M. *Fundamentals of Clinical Acupuncture*. Toronto: CCNM Press, 2011.

treatment #14, 100 mg of pycnogenol daily was prescribed to address the OA and the peripheral vascular disease further. On treatment #21, 500 mg of bromelain was prescribed, taken b.i.d. or t.i.d., away from food to reduce joint pain further. Both of these supplemental interventions were introduced after the majority of the patient's pain relief had occurred.

Outcomes

Pain Scores

Following the first week of treatment, MK's subjective pain score decreased by four points to 7/10 (where 10 = worst). After three additional weekly sessions, the pain score further reduced to 5/10. Therapeutic ultrasound was introduced on the sixth treatment, and after two consecutive weeks with the combination of ultrasound, arnica oil, and acupuncture, the pain score decreased to 3/10, where it has since remained. MK has gone three weeks without treatment and still rated her pain at 3/10.

Medication Use

After four treatments, MK reduced her medication use by discontinuing acetaminophen completely, and continued to take celecoxib at a dose of 400 mg/day. Over several months, several combinations of the medications were tried. At the time of publication, after a total of 36 treatment sessions, she takes 200 mg of celecoxib when she goes bowling (2 × /week) and takes 500 mg of acetaminophen each night. This equates to a 50% reduction in celecoxib (two days of the week) and a 100% reduction (on the remaining five days). Acetaminophen intake has been reduced by 84%.

Surgery

In August, MK was feeling so well that she postponed her total arthroscopy that was scheduled for October 2016 and

moved it to March 2017. In March 2017, she elected to cancel the surgery completely.

Functional Capacity

MK initially required help getting out of chairs. However, after the first treatment, she could get up independently. After 10 treatments, she reported doing house chores such as vacuuming for the first time in 10 years and lifting her arm up to water hanging plants. After 12 treatments, she was able to extend her arm without pain.

Safety

MK experienced "sharp" pain during ultrasound on five occasions. This area would be avoided for the remainder of the treatment, and pain would immediately subside. With acupuncture, MK experienced a mild hematoma following removal of LI 11. No pain was reported.

Discussion

Treatment Decisions

Anti-inflammatory herbs and nutraceuticals interacted with MK's medications, and could not be prescribed. Thus, the treatment plan focused primarily on the use of topical and physical modalities.

Arnica montana oil was chosen based on its anti-inflammatory, anticoagulation, and analgesic properties.⁶ Massage was chosen to increase circulation and for analgesic effects via therapeutic touch.⁷ No studies specifically use topical arnica oil for OA of the shoulder. However, use of arnica gel has been found to be comparable to topical ibuprofen in both pain and functional hand improvements in those with hand OA.⁸

Acupuncture, a component of Traditional Chinese Medicine (TCM), has been used to treat various ailments successfully, including chronic pain.⁹ It has been estimated that the underlying mechanism of action is modulation of hormones, alteration of pain-specific gene expression, and modulation of pain pathways in both the peripheral and central nervous system.¹⁰ In TCM, *qi* is the circulating life force within the body and is free flowing in health. It can become blocked in disease states, creating *qi* stagnation. In MK's case, points were chosen to promote the flow of *qi* and exert local actions.

The latest Cochrane review on use of therapeutic ultrasound for OA (of the knee) states that it "may be beneficial" and that it improved pain scores by three on a scale from 0 to 10.¹¹ When MK's pain rating remained at 5/10 (where 10 = worst) for four consecutive weeks, ultrasound was added to the protocol. Continuous settings were used to generate thermal effects on the underlying tissue to stimulate tissue regeneration, alter cell membrane permeability, and increase intracellular calcium.¹²

Considerations

Results indicate that the combination of arnica oil massage, acupuncture, and ultrasound are responsible for the drastic decrease in pain. However, it is difficult to elucidate what

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impact dietary and supplemental changes may have had in improvement. It is also important to note that since MK did not have any financial restrictions, it allowed her to maintain the weekly treatment sessions and to purchase/refill the recommended supplements.

Conclusion

This case demonstrates the effectiveness and safety of multiple naturopathic medicine modalities in the management of OA of the shoulder; decreased pain scores, decreased medication usage, improved functionality, and elimination of surgery were all shown. Use of multiple pharmaceutical anti-inflammatory agents may be considered an obstacle due to interactions with commonly used anti-inflammatory and analgesic nutraceuticals, but topical and physical medicine modalities are options. Given the number of individuals suffering from chronic pain and the resultant financial burden, higher quality research such as a randomized controlled trial is warranted.

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Author Disclosure Statement

No competing financial interests exist. ■

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