THE ROLE OF ACUPUNCTURE IN ARTHRITIS OF THE KNEE JOINT IN ADDITION TO LOCAL STEROID INJECTION

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ABSTRACT

Objective: *This study was conducted to know the effects of acupuncture on patients with osteoarthritis (OA) of the knee joint and to identify the trigger points in these patients.*

Material and Methods: *This study was conducted on OA of knee joint at Pain & Plegia center Peshawar from 1999 to 2004. Patients with multiple small joints pain, rheumatoid arthritis, gout or in whom knee joint was distended with fluid were excluded. All patients were treated with acupuncture for pain relief. Trigger spots were identified by palpating the knee. These trigger spots were treated by local instillation of triamcinolone acetonide 40 mg. These patients were then treated with Transcutaneous Electro-Neuro Stimulator (TENS) to treat muscle weakness.*

Results: *Out of 250, 225 cases (90 %) were symptoms free. Only 25 cases (10%) relapsed with in a month after completion of treatment. Pain knee was mainly due to tendonitis, in close proximity to the knee joint.. Main trigger points were outside the knee joint at adductor tubercle possibly at the insertion of adductor magnus and on the lateral side at the origin of gastrocnemius lateral head. The third trigger spot was on the medial aspect probably in tibial collateral ligament.*

Conclusion: *Pain knee joint attributed to OA Knee is in fact due to tendonitis and not due to osteoarthritic changes in the joint and it is very much amenable to complete recovery by using both acupuncture therapy and local steroid injections.*

Keywords: *Osteo-Arthritis Knee Joint, Trigger Spots, Acupuncture, Transcutaneous Electro-Neuro Stimulator, Local steroid injection.*

INTRODUCTION

Osteoarthritis (OA) of the knee joint is a common condition in which changes in the knee joints lead to pain and difficulty in walking.[1] With advancing age and progression of the disease, osteoarthritis is associated with incapacity and a deteriorating quality of life owing to increased pain, loss of mobility, and the consequent loss of functional independence.[2] Treatment aims at relieving symptoms and maintain function. Treatments include drugs to reduce pain and inflammation; weight loss, if needed; physical therapy; and exercise. Unfortunately, these treatments do not always help, and NSAIDS may cause unwanted and dangerous side effects.[3,4] Pain relief treatment is therefore a fundamental aspect in dealing with this illness[5]. There is no satisfactory standard treatment. Even the mechanism of OA is not fully understood. Conventional treatments comprising of analgesics and physiotherapy have remained unsatisfactory universally. Consequently, many people with knee osteoarthritis seek alternative treatments, such as acupuncture. Acupuncture is an ancient Chinese treatment that involves putting special needles into specific points of the body to treat medical conditions. Mainstream medicine is increasingly recognizing acupuncture as an effective treatment for some disorders.[6] In OA of the knee joint, acupuncture, as a complementary therapy to pharmacological treatment has been shown to be more effective than pharmacological treatment alone terms of pain relief, easing stiffness, and improving physical function[5].

This study was conducted to know the effects of acupuncture on patients with osteoarthritis (OA) of the knee joint and to identify the trigger points in these patients.

MATERIAL AND METHODS

This study was done at Pain and Plegia center Dabgari gardens Peshawar from year 1999 to 2004. All cases labeled and being treated as OA Knee by various physicians/surgeons. All those cases that contacted our pain management center with primary complain of pain knee in one or both joints, of various durations of time, with presenting symptom of acute or chronic pain knee at rest or at movement, grating sensation in the joint on examination, mild swelling around joint were included in the study.

All those cases that were having multiple small joints pain and were suspected to be suffering from rheumatoid arthritis, known cases of gout, knee joint distended with fluid were excluded from the study.

Technique: Trigger spots are localized and pinpointed to an error of 2-4 mm. This localization of the painful spots is the success of the treatment. These lesions are than instilled with 0.5-1 ml of triamcinolone acetonide 40 mg. injection each, locally. Patient is then asked to take rest for four days and to report back for reassessment.

Patients were kept under observation for a month and reassessed at ten days interval. Trigger spots identified at the first instance are palpated each time and their improvement assessed. In majority of cases the first injection of steroid gives sufficient healing so that no further treatment is required. In rare cases an odd patient does require a second injection at some of these sites. Judgment for injection is made by pain elicited on deep palpation at the trigger spots. TENS treatment to quadriceps , tibialis anterior and achilles tendon is given to individual requirement. For most of the patients 6-10 sittings are sufficient. Thus each case is given ten sitting of acupuncture in first course of treatment thirty minutes in duration, one treatment each day. Patient is given rest for one week and then reassessed for second course of treatment comprising of TENS as per individual requirement. Treatment completes in a month time. At the beginning of treatment patient is prescribed a single analgesic for five days, a calcium-vit D supplement for 20 days and an injection of 50 mg of mecobalamin for five days. Patients are usually comfortable even without analgesics after five days of treatment though 500 mg of mefenamic acid is advised SOS.

Outcome Measures

These patients were assessed at the beginning of treatment at Visual analogue Scale (VAS) Numeral Rating Scale (NRS) and Profile of Quality of Life in the chronically ill (PQLC).They were all seriously debilitated at the beginning of treatment. At six to seventh sitting of treatment all these patients had appreciable relief in pain and function was restored. They could themselves express in quantum of level of improvement. After the identification of trigger spots and instillation of local steroid injections the patients improved and showed dramatic relief within a week. As after a week interval patients had no pain symptoms thus VAS and NRS became ineffective in assessing the condition of the patient. Patient's further improvement was assessed at PQLC. Towards the end of treatment these patients were then completely pain free; they could walk normal lead a normal life and were not dependent on analgesics. Thus PQLC was also abandoned and we felt confident to assess at Recovery Almost Close to Normal Living (RACNL).

RESULTS

Two hundred and fifty patients with OA knee joint ranging in age from 45- 80 years were treated in this time period. During treatment pain of the knee succumb to acupuncture therapy as early as 4 to 7 days from commencement of treatment. Using ancillary techniques of acupuncture, knee is finally made completely pain free. Knee is then palpated deep in an effort to find painful spots in and around the joint. In this technique of multidisciplinary approach Acupuncture, TENS and medications are used in combination as indicated, to help patient towards complete relief.

The trigger spots unmasked in pain knee were invariably outside the joint proper. Deep palpation of the superficial anatomical land marks indicated that on medial side these were on the adductor tubercle possibly the insertion of adductor magnus and on the lateral side at the origin of gastrocnemius lateral head. The third trigger spot that occured only in moderately advanced cases of OA knee joint was on the medial aspect and was most probably in tibial collateral ligament. In few cases trigger spots were identified underneath the upper margin of patellae (supra patellar bursa) and other such trigger spots in bursa underneath medial meniscus. This second trigger spot may still be in the lower part of tibial collateral ligament as it is quite superficial and more over no active evidence of bursitis was exhibited in these couple of cases. The pain in these trigger spots may be due to tendinitis or fibrositis and was referred to knee joint.

Out of 250, 225 cases (90 %) responded and these patients were then completely symptoms free without analgesics and could walk normally. Weakness of quadriceps muscles was also restored to normal. Only 25 cases (10%) failed to respond and relapsed as early as a month after completion

of treatment. Deep insight of these failure cases revealed that:

These cases had been inadvertently given multiple intraarticular injections of steroids in the past in an effort to treat their symptoms.

In two cases, cause of knee pain had been infectious (pyogenic) arthritis in the past that was improperly managed and had been smoldering on to a stage causing irreparable damage to the cartilaginous surface.

Few cases had highly advanced OA that caused new bone formation leading to distorted joint anatomy.

DISCUSSION

As osteoarthritis is still an incurable illness, treatment is fundamentally aimed at improving the patient's quality of life. The role of acupuncture in osteoarthritis of the knee is still a matter of controversy. Clinical trials have shown that acupuncture may be beneficial in treating the pain that arises from osteoarthritis[7]. In a prospective controlled trial, acupuncture was compared against no treatment, in patients with advanced osteoarthritis of the knee, awaiting total knee replacement, the acupuncture group improved in all parameters, whereas the control group deteriorated.[8] In 1997, the first Pain Management Unit was set up as part of primary health care within the Andalusian Public Health System, offering acupuncture among other therapies. A study from this centre states that the degree of pain relief experienced by patients from acupuncture justifies a more rigorous study.[9] Another study reveals that acupuncture seems to alleviate knee pain and improve function compared with controls[10]. Still these evidences were not sufficient and efficacy of acupuncture in OA remained equivocal due to lack of credible controls for the placebo effect, inadequate assessment of long-term treatment benefits and insufficient sample size in these studies [10-12]. To overcome this shortfall a recent study was carried out by Dr. Brian M Berman and associates at the centre of integrative medicine, University of Maryland School of Medicine, Baltimore, on 570 patients with OA knee joint. The authors conclude that acupuncture seems to provide improvement in functions and pain relief as an adjunctive therapy for OA of the knee joint when compared with credible Sham Acupuncture and education control group.[6] Though the adjunctive role of Acupuncture in the relief of pain of OA knee joint is established by this study still the question of understanding and treating this disease entity remains far from being answered. American Academy of Pain Management identifies pain management as a newly emerging discipline, emphasizing an interdisciplinary approach, by blending of tool techniques and principles taken from the discrete healing arts and reformulated as a holistic application for the reduction of pain and sufferings.[13]

Our results have revealed interesting phenomena that has helped us looking at the etiology and pathogenesis of pain knee from a different aspect. These patients were between 45-80 years of age and invariably all of them had some changes of OA knee joint as a result of aging process. Despite they had complete recovery with the above regimen of treatment. Their pain is thus attributed to these trigger spots that are highly localized. As these trigger spots are localized in close proximity to the joint proper and as the joint is a highly sensitive organ thus pain in these trigger spots refers to joint, mimicking a joint problem. Complete relief by instilling these trigger spots with triamcinolone acetonide indicates that pain is not of joint origin. In this effort we have successfully unmasked pain knee and identified trigger spots as its cause. The question is yet to be answered why these three trigger sites are more prone to this pathology. These findings might altogether change our views towards understanding OA of the knee joint. However further studies are needed to establish a cut off point beyond what advanced OA may actually be the cause of pain. Moreover unmasking and identifying the trigger spots make it possible to give highly specific treatment giving optimum healing while injecting very small doses of drug as compared to a crude and irregular treatment in case of an intra-articular, high potency, large dose, steroid injection. Towards the end of the treatment TENS are used to restore muscle power. This is an essential part of the treatment. This treatment gave marked sense of well being to the patients as most of them exhibit disuse atrophy of the thigh muscles and are not liable to early recovery without subjective treatment.

We were also not comfortable with conventional outcome measures. The difference being that these conventional measures had been followed in studies that concentrated on relieving pain and restoring function while none had breakthrough to treat the underlying ailment. Thus their results remained within the parameters to be assessed on WOMAC, MPQ, VAS, NRS, PQLC and various other scales.

Our study reveals that acupuncture is an effective therapeutic technique to relieve the pain. It may have a prolonged but a transient effect, relieving the pain symptoms in any painful condition. It cannot be an answer to treating a

painful condition towards a complete cure, though we think that it does exhibit a very important role as a therapeutic technique to help relieve acute and chronic pain unmasking the pain syndromes and thus open ways to treat them by using other available medical options.

CONCLUSION

From our study it is thus concluded that cause of pain knee (commonly termed as OA Knee Joint) are trigger spots at sites outside the joint proper. On medial side it is on the adductor tubercle possibly the insertion of Adductor Magnus, on the lateral side it is the origin of Gastrocnemius lateral head. Our study has promising results favoring acupuncture as a part of multidisciplinary management options for relieving pain in patients of OA knee joint. However large scale randomized control trials are needed to compare acupuncture with conventional treatment options for OA knee joint.

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