Acupuncture for Soft Tissue Shoulder Disorders: A Series of 201 Cases

Juan Guerra, Elena Bassas, Maria Andres, Francisco Verdugo, Maria Gonzalez

Introduction
Shoulder pain can originate from several different conditions, from lesions of shoulder structures to pain radiating from the neck or thorax. Soft tissue shoulder disorders, including rotator cuff tendonitis, bicipital tendonitis, bursitis, capsulitis, etc., are the most frequent causes of shoulder pain. In primary care about 1% of patients over 45 years old have one shoulder pain event.1 The true prevalence is unknown, varying in different reports from 4-34%.2-3 Rotator cuff disorders form 70% of shoulder pain cases, muscular and ligament disorders form 11%, glenohumeral arthritis 3%, and 5% comes from radiating pains from the neck.4 Rotator cuff lesions are associated with excessive overloading, glenohumeral and acromioclavicular joint instability, muscular imbalance, anatomical features of the acromion or coracoacromial arch, and cuff degeneration related to age, ischaemia, and musculoskeletal diseases damaging the cuff. Cuff lesions can evolve to capsule involvement (capsulitis or frozen shoulder), the risk factors for capsulitis being: female sex, previous severe or repeated trauma, surgery, diabetes, cerebrovascular events, hemiplegia and coronary ischemia.5

Most patients with shoulder conditions complain of shoulder pain and restriction of movement. Shoulder pain is usually intense on movement, at rest or at night. Movement restriction ranges from light abduction to important restrictions of every shoulder movement, along with lessening of strength and muscular atrophy, known as frozen shoulder.7 A patient’s quality of life can be reduced not only by symptoms, but also by a reduced ability to

Summary
A retrospective observational study was performed on shoulder pain cases seen in a community general practice. Two hundred and one patients were treated with acupuncture (on distant points plus local shoulder points), moxibustion and auriculotherapy. Data was retrieved from records over a three-year period to assess the effect of acupuncture and moxibustion on pain, mobility and disability, and to compare perceived efficacy rates with published reports from Chinese acupuncturists. Using a four-point outcome scale in this series of 201 patients the study found: one patient (0.5%) reported no improvement, 12 (6%) simple improvement, 68 (33.8%) remarkable improvement, and 120 (59.7%) clinical resolution. Only two patients left the programme. In conclusion, treatment of soft tissue shoulder disorders with acupuncture and moxibustion in this series seems to have good clinical results in diminishing symptoms, shortening disease duration time and improving functional ability, even in long-lasting disease (up to 10 years). A combination of distant points plus local points, moxibustion and auriculotherapy seems to increase effectiveness, reduce the number of sessions per patient, and increase the time between sessions, suiting the needs of patients and those of a busy National Health Service clinic. The authors report results similar to those reported by Chinese acupuncturists when using similar diagnostic procedures, techniques, outcome measures and patients. This case series is the first step towards conducting a randomised controlled trial (RCT) of acupuncture efficacy in shoulder pain. Such trials are needed to confirm the perceived efficacy of acupuncture from observational studies.

Keywords
Shoulder pain, shoulder joint, soft tissue disorders, periarthritis, acupuncture.
perform activities of daily living, such as combing hair, dressing, eating and work. These diseases have been reported as self-limiting, but this may not be substantiated by epidemiological data. One recent community report showed that most patients remain affected three years after onset. One primary care cohort study reports that 25% patients have recurrent episodes of shoulder pain and only 49% achieve complete recovery at 18 months follow up.6;7

There are many interventions available to treat this disorder. They range from the conservative, such as oral analgesics, topical NSAIDS, subacromial or intra-articular injections with NSAIDS or corticosteroids, physiotherapy, ultrasound, electro-magnetic field treatment, laser treatment, ice, heat, etc. to various surgical interventions. Most interventions have been reported to be ineffective, or to be of unknown effectiveness, as has been reported in recent systematic reviews.8;9-10 Acupuncture has not been evaluated for this disorder, but Chinese case series of treatment report good results, but lack rigorous design.11;12-13 From the beginning of the pain programme in primary care this study collected experiences of treatment with acupuncture in order to test patient evolution trends.

Traditional Chinese Medicine has several treatment techniques. Among them, acupuncture is believed to be effective for pain, borne out not only through several millennia of practice, but also from various RCTs, systematic reviews and meta-analyses about acupuncture efficiency versus placebo (sham), or versus other interventions. Most authors report acupuncture effect versus control, but there are methodological shortcomings because of non-specific or placebo effects, effects of transdermal puncture (specific effects of sham), and difficulties of blinding, etc.14;15

Methods

Patients came from an urban primary care setting, the Centro de Salud (Torreblanca), Sevilla National Health Service. They had been diagnosed by their GPs as having a soft tissue disorder of the shoulder: bicipital tendonitis, rotator cuff tendonitis, adhesive capsulitis, and periarthritis scapulohumeral. They were treated with acupuncture in the pain programme at the same clinic. Patients with shoulder pain radiating from the neck or thorax were excluded from this case series. Data is included from every consecutive patient admitted to the pain program from May 1997 to April 2001, without limitations on age or co-morbidity.

Techniques Used

Auriculotherapy (AT) involved the placement of vaccaria seeds on both ears after sterilisation with iodine, with no further manipulation by the patient. The ear points used were Shenmen, Shoulder and Master Shoulder, from the French and Chinese charts. Where possible, the seeds were placed on the points of greatest sensitivity to pressure. The moxibustion (MOX) technique used was attachment of moxa (artemisa) cones to needles inserted at classical acupuncture points. Acupuncture (AP) involved skin puncture with

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Demographic details.</th>
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<tbody>
<tr>
<td>Sex</td>
<td>Number of patients</td>
</tr>
<tr>
<td>Male</td>
<td>64 (32%)</td>
</tr>
<tr>
<td>Female</td>
<td>137 (68%)</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
</tr>
<tr>
<td>80-89</td>
<td>5</td>
</tr>
<tr>
<td>70-79</td>
<td>36</td>
</tr>
<tr>
<td>60-69</td>
<td>68</td>
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<td>50-59</td>
<td>62</td>
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<td>40-49</td>
<td>19</td>
</tr>
<tr>
<td>30-39</td>
<td>8</td>
</tr>
<tr>
<td>10-29</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Table 2</th>
<th>Diagnostic categories.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td>Number of patients</td>
</tr>
<tr>
<td>Rotator cuff tendonitis</td>
<td>158 (79%)</td>
</tr>
<tr>
<td>Capsulitis</td>
<td>30 (15%)</td>
</tr>
<tr>
<td>Periarthritis scapulohumeral</td>
<td>9 (4%)</td>
</tr>
<tr>
<td>Bicipital tendonitis</td>
<td>4 (2%)</td>
</tr>
<tr>
<td>Time pain onset to treatment</td>
<td></td>
</tr>
<tr>
<td>0-1 months</td>
<td>47 (23.4%)</td>
</tr>
<tr>
<td>1-6 months</td>
<td>93 (46.3%)</td>
</tr>
<tr>
<td>7-12 months</td>
<td>24 (11.95%)</td>
</tr>
<tr>
<td>13-60 months</td>
<td>9 (14.4%)</td>
</tr>
<tr>
<td>60-120 months</td>
<td>8 (4%)</td>
</tr>
</tbody>
</table>
filiform needles (Hao type; 30G) at local and distant points. Cupping (CUP) was used in a standard fashion, applying heat to the air in a glass, creating a partial vacuum over the skin at certain points. Electroacupuncture (EA) was used to increase acupuncture point stimulation in some cases. Dense-dispersed waves at 5-10Hz were applied at an intensity suited to individual patient tolerance. Local points used in the treatment sessions were LI15 and TE14. The distant points used were ST36, ST38, GB34 and Zhongping. Zhongping is an extra point located one cun inferior to ST36, midway between the tibia and fibula. The points used for EA were LI15, TE14, GB34 and Zhongping.

Procedure
In most cases the patient was first needled in the opposite leg to the affected shoulder. An acupuncture sensation (de qi) was sought, and then the patient was asked to mobilise the shoulder for five minutes. A local point was punctured and a moxa cone was placed over the needle. After 15 minutes the needles were removed and vaccaria seeds were placed over the ear points. The treatment session concluded with the patient being given a new treatment date (one month between dates). If needed for intense pain, or for long-lasting disease, cupping was added on the affected shoulder, or electroacupuncture was performed.

Outcomes
Two members of the investigation team extracted and processed data from the clinical histories: sex, age, diagnosis, total time since start of condition to start of treatment, number and type of treatments applied and patient results. The latter were assessed by patients’ symptoms up to the end of treatment. They included self reported pain and limitation of movement, practitioner records of range of abduction measured with goniometer, and reason for stopping treatment (from the history record or by phone if necessary). The following four-point scale was used to describe results according to the patient and their records:

- **Clinical resolution**: no pain at rest, no pain with movement, no pain with daily living activities.
- **Remarkable improvement**: pain only with strong or forced movements, no pain with daily living activities.
- **Simple improvement**: pain and mobility improvement with respect to pre-treatment level, but pain and difficulty persist with daily living activities.
- **No improvement**: no change in mobility or pain, pre-treatment functional disability persists after treatment.

Pain worsening was not included on the scale because no patient mentioned worsening of the pain during or after treatment. There were no adverse reactions or complications during or after treatment.

Results
In this series there is a clear preponderance of females (68%) over males (32%). The disorder was most prevalent in the age decade 60-69 (68 cases), then 50-59 (62 cases), then 70-79 (36 cases), then 40-49 (19 cases), with a diminishing trend in the rest of the decades (see table 1).

The most prevalent disorder was rotator cuff tendonitis (79%), followed by capsulitis (15%), periarthritis scapulohumeral (4%), and bicipital tendonitis (2%). Most patients (70%) were sent for acupuncture treatment within six months of...
the onset of their shoulder pain, but 30% had a chronic condition before treatment (over 6 months; up to 10 years)(see table 2). There was no clear relationship between the results of treatment and the age decade, or duration of symptoms, at presentation.

The most frequently used treatment was auriculotherapy (2.6 sessions average per patient), then body acupuncture (1.55 sessions per patient). The other treatments were mainly to help reach an effect in chronic cases or slow responders. Eighty three percent received only three treatments (see table 3). Twelve cases (6%) reported slight improvement, one case (0.5%) reported no improvement, and two patients reported by phone that they gave up treatment after the first treatment session because they did not like needling. The rest completed treatment until discharge (discharge due to pain having disappeared or diminished according to patient and physician opinion). Pain worsening was not included in the outcome categories because no patient mentioned worsening of the pain during or after treatment. There were no adverse reactions or complications resulting from the treatment.

**Discussion**

The increasing use of techniques of traditional Chinese medicine, such as acupuncture, in western countries creates important controversies about their effectiveness, and of the difficulties in applying scientific method to them. In the authors’ opinion these techniques must be subjected to rigorous studies, such as randomised controlled trials, to establish efficacy, safety and cost-effectiveness, as well as their place among the other interventions already available.

In disorders such as those described in this study, western interventions have not proven particularly effective to date. The authors justify the use and evaluation of the techniques covered by this study on this basis.

These techniques were first used in the local community at a hospital pain clinic 15 years ago, and six years ago a pain programme was started in a NHS primary care clinic, collecting experiences of treatment of pain disorders such as shoulder pain. Chinese authors state good results with acupuncture on soft tissue disorders in case series using categorical scales. This study seems to reach similar results, not only in cases of recent onset, but also in chronic cases (5-10 years from onset). A case series such as this is prone to observer bias and confounding factors. This study was conducted to see if it was possible to reach the same results as the Chinese authors, to evaluate the disease’s evolution with these techniques, and to serve as a first step towards the design of a randomised controlled trial of the effectiveness of acupuncture on soft tissue disorders of the shoulder.

**Reference list**

This article represents a huge amount of detailed work. The authors are to be congratulated for painstaking location of the patient files, collection of the biographic information, duration of condition, number of treatments, and outcome, quite apart from the work of writing it up and revising according to the reviewers’ views. Yet I fear the article, by the nature of any retrospective case series, is not reliable enough to add anything of real substance to the case for acupuncture that we are all trying to make.

If data are unreliable, then it doesn’t matter if it is one piece of data or 300, they are still unreliable. What is unreliable about this work? First it is retrospective, and secondly the measurement of the effect is subjective. Both these facts introduce a serious risk of bias, so that the evidence will count for little outside acupuncture circles.

Retrospective data are inevitably ‘messy’ in many ways. The information is very unlikely to have been collected systematically. This means that there is likely to be missing data, that questions might not have been asked, or that they may not have been put in precisely the same way for different people, all of which affects the quality of the data. It is difficult enough to be consistent in a prospective study, even when it is just a question of ticking checklists. People, being individuals, don’t fit neatly into systems and checklists. A well-known questionnaire for arthritis asks patients whether they have any difficulty getting into the bath. Seriously arthritic patients can answer ‘No’ - because they have given up getting into the bath!

Outcome measures are so important that they form a subject on their own. Accuracy in measuring change is the essence of research. Knowing whether patients have responded to treatment is important enough in clinical practice, and we can interpret patients’ verbal reports with the help of our subjective assessment, including possibly unconscious information from the manner and body language of the patient. When it’s a matter of a written report, the precise terminology is critically important.

In this paper, the authors graded the written records. They did their best to be objective, by having clear categories and by having two people check the grading. However, unless the original record keeping was extraordinarily detailed, it is my guess that many cases would have been difficult to grade reliably. Then, naturally, the temptation in a borderline case is to place it in the higher grade. Patients’ verbal reports are simply no substitute for a reliable graded assessment on a scale of some sort. This is the reason why the BMAS clinical record sheet includes a Visual Analogue Scale. The VAS has proved to be a simple method (though it needs careful teaching) to reliably assess pain, nausea and possibly other symptoms. But it has not been validated for use in clinical research into all symptoms in all conditions – if you plan to use it, you must search the literature to determine whether it has been validated for your purposes.

Uncontrolled studies do have a role in providing evidence for acupuncture, but they need to be prospective, complete (i.e. no patients excluded), well documented, and the outcome needs to be measured accurately and reliably. Studies performed in this way will take us forward, even if only to the next stage of generating a hypothesis that can be tested in an RCT. No grant awarding body could refuse an application for an RCT, were it based on a reliable report of a success rate of 60% resolution of shoulder problems in three treatments or less. The potential benefit to the health service is simply enormous.
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