CASE REPORT

A 57 yr old female with chronic bilateral knee pain and lower back pain following an acute exacerbation - An integration of Physiotherapy and Acupuncture

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Abstract

This case study presents a 57 year old female suffering an acute exacerbation of her chronic bilateral knee pain and lower back pain with a 10 year history of osteoarthritis and following a bilateral unicompartmental knee replacement in 2009. Using incorrect size prosthesis complicated her knee surgery and two months later a second operation was needed. On assessment her mobility was limited by pain and was not able to leave her home.

The treatment has consisted of exercise-based physiotherapy with the aim of improving active range, strength, balance and posture encouraging a self-management active approach, together with acupuncture to aid pain reduction. Gait re-education was also provided progressing indoor mobility from a rollator frame to unaided indoor walking. The purpose of this combined physiotherapy treatment and acupuncture was to create a window of opportunity to aid the achievement of her outdoor mobility goal and avoid having to depend on a wheelchair to access her local community as well as improving her overall functional abilities.

Keywords: acupuncture, chronic pain, osteoarthritis, physiotherapy, unicompartmental knee replacement.
Introduction

This 57 year old lady was referred to the adult community rehabilitation team following an admission to her local hospital due to severe neuropathic referred left leg pain, nociceptive and central low back pain. A MRI was conducted and showed no signs of osteomyelitis or discitis but some disc bulging at the levels of L4 and L5 with degenerative endplate changes at these levels effacing the thecal sac. However, no definitive nerve root or cord compression was identified. Inflammatory markers were not significantly raised. This patient was discharged a week later following a caudal epidural injection in her lower back and a referral to community physiotherapy since she was not able to access her community due to her limited mobility and functional abilities. Previous to this admission, she was able to access her community using a walking stick. However, she was not using public transport due to reduce confidence.

On initial assessment, this patient was using a rollator frame to mobilise indoors and was also given two elbow crutches on discharge. She was able to stand independently using upper limb support, task that appeared effortful and painful. At this point and after her epidural, she reported a reduction in her acute central lower back pain with no neuropathic referred pain present. However, intermittent and very intense left knee pain was reported with hypersensitivity to touch and observable swelling, redness and mild increase in temperature. She also reported right knee pain but less intense in nature and more manageable with no apparent inflammation.

Acupuncture has been used traditionally for pain relief (Kaptchuck 2002). It is believed that it has local, segmental and supraspinal effects, which can lead to short or long term relief depending largely on the dominant pain mechanisms (Carlsson 2002). Acupuncture has been found to effectively relieve chronic low back pain (Manheimer E et al, 2005) and it seems to provide improvement in function and pain relief as an adjunctive therapy for osteoarthritis of the knee compared with sham acupuncture and education control groups (Brian et al, 2004).

Acupuncture is considered a potent form of sensory stimulation. The insertion of the needle into the skin produces a clear pattern of afferent responses in the peripheral nerves (Hopwood, 2004). The needle activates local fibres A delta (iii) causing heaviness and distension, A gamma (ii) causing numbness and C fibres causing soreness, all contributing to the sensation of “DeQi”.

When the skin and underlying tissue is needled, A delta fibres are stimulated via mechanoreceptors. The fibres travel to the brain to release opioids, mainly enkephalin, which inhibits transmission by C fibres, A delta fibres also travel to the cerebral cortex giving awareness of needling and causing the release of beta endorphin. This substance in turn begins the process of descending inhibition-involving serotonin. The descending neuron then causes pain inhibition by releasing opioids into the dorsal horn of the spinal cord. Prolonged stimulation may also release antagonists to these substances such as cholecystokinin and this maybe the basis for the build up of acupuncture tolerance seen with repeated needling (White, 1999).

This patient suffered with chronic nociceptive pain and had a recent history of neuropathic pain complicated with the psychological aspects of a long history of chronic pain affecting function. Acupuncture stimulates A delta fibres, whose collateral terminals inhibit the nociceptive pathway in the dorsal horn of the spinal cord. This involves the release of enkephalin, know as segmental analgesia widely used in acupuncture treatment of painful areas targeting pain relief (Bekkering R, Van Bussel R 1998). Also the needle insertion produces an immediate sympathetic response in the related spinal segment and in the long term a sustained decrease in sympathetic tone (Haker et al, 2000).

Nice guidelines (2009) for low back pain: Early management of persistent non-specific low back pain (NSLBP) also recommends the use of acupuncture describing NSLBP as tension, soreness and/or stiffness in the lower back region for which it isn’t possible to identify a specific cause of the pain. Several structures in the back, including the joints, discs and connective tissues, may contribute to symptoms.

The concept of integrated health care that incorporates conventional and complementary therapies has been promoted (Vickers A, 2000) with acupuncture being the most popular option (Thomas et al, 2001). Systematic reviews conclude that acupuncture is more effective than placebo for osteoarthritis of the knee in addition to exercise and advice (Ezzo et al, 2001 and White et al, 2007).
**Description of the case**

**Table 1. Summary of patient’s profile:** (HPC) history of present condition; (LBP) low back pain; (PMH) past medical history; (h/o) history of; (OA) osteoarthritis; (LB) low back; (TKR) total knee replacement; (HTN) hypertension; (SH) social history; (POC) package of care; (DH) drug history; (VAS) visual analogue scale.

| **HPC** | Flare up of bilateral chronic knee pain (left worse than right) and chronic LBP  
Limited mobility using a rollator frame due to pain with reduced balance mechanism and being at risk of falls.  
Unable to access her community. Housebound |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>PMH</strong></td>
<td>10 yr h/o OA in knees and LB. TKR bilaterally in Sept 2009 and r/v in Dec 2009 since complications due to a different size prosthesis used. HTN. Obesity</td>
</tr>
<tr>
<td><strong>SH</strong></td>
<td>Lives with husband and son in a 3 storey maisonette with stairs. She has a POC of one carer assisting with breakfast preparation, cleaning and washing.</td>
</tr>
<tr>
<td><strong>DH</strong></td>
<td>Butrans patch 10 mgs (after medication being reviewed) Doxazosin, Losartan, Lansoprazole.</td>
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**Clinical Assessment**

Symptoms’ location, frequency and intensity are summarized in the body chart (fig. 1)

*Figure 1: Body chart showing the areas of pain; VAS (Visual analogue scale), I/T (intermittent)*

**Aggravating factors:** Weight bearing (static standing, walking and stairs)

**Easing factors:** Lying down, sitting for 15 to 30 minutes

**24H pattern:** Increased pain end of the day and altered sleeping pattern due to pain

**Investigations:** X-ray knee: no changes in the medial compartment arthroplasty from previous x-rays  
X-ray Lx: showing disc degenerative changes and masked osteophytes L4/5  
X-ray Hip: early OA changes are shown in hip joints. Normal sacroiliac joints  
MRI spine: Sagittal T1 and T2 images supplemented by axial T1 and T2 images through L3/4, L4/5 and L5/S1 discs > Loss of space of normal lumbar lordosis. Disc bulging at L4/L5 with degenerative endplate changes but no definite nerve root or cord compression identified. Conus and cauda equina appear normal.

**Hobbies:** Shopping, cooking and attending Church on Sundays
Table 2. Objective findings: (L) left; (R) Right; (Tx) Thoracic; (Lx) Lumbar; (B) bilateral; (ROM) range of motion; (Flx) flexion, (Ext) extension; (FAROM) full active range of motion; (LL’s) lower limbs; (UL’s) upper limbs; (Ax) assessment; (SLR) straight leg raise test; (TUAG) time up on go test; (CTSIB) clinical test for sensory integration of balance.

<table>
<thead>
<tr>
<th>Observation</th>
<th>(L) Knee swelling (medial-frontal-lateral-superior-inferior) with redness and increased temperature, (R) Knee mild swelling (medially), Severe intermittent pain in (L) knee lasting a few seconds having to pause session.</th>
</tr>
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<tbody>
<tr>
<td>Palpation</td>
<td>Hypersensitivity in (L) knee to light touch. Anticipation/ fear of pain. Avoidance behaviour? Tenderness to touch. Mild tightness Tx and Lx Paravertebrals (B)</td>
</tr>
<tr>
<td>ROM</td>
<td>FAROM Knee flx (B) / Knee ext -10° (L) / Hip flx 110° (B) FAROM rest joints in LL’s Lx restricted AROM rotation (B) EOR, Lx lat inclination (B) EOR and Lx ext FAROM UL’s</td>
</tr>
<tr>
<td>Muscle Tests</td>
<td>Ilio-psoas 3+/5 (B) / Hamstrings 3-/5(B) / Quadriceps 4/5 (B) Dorsi-Flx/Plantar-Flx Ankle 4/5 (B) / UL’s 5/5 generally / strong grip strength (B)</td>
</tr>
<tr>
<td>Neural Function</td>
<td>Intact sensation generally but hypersensitivity to light touch in (L) Knee -&gt; Desensitisation techniques given. No cauda equina symptoms. Intact proprioception. Normal tone SLR (L) (+) 60° mild pain / (R) (-) Slump Test (L) (+) mild pain Reflexes Unable to assess patellar tendon due to anticipation of pain and swelling in the area-declining Ax. Achilles tendons, biceps and triceps intact.</td>
</tr>
<tr>
<td>Outcome measures</td>
<td>VAS (as per body chart fig.1) TUAG 55 seconds using one elbow crutch 180° turn 6 steps using one elbow crutch CTSIB: Good static balance with min antero-posterior sway eyes open &amp; eyes close Pastors Test: Decreased outcome / level 3 / More than one step followed by the need to the caught.</td>
</tr>
<tr>
<td>Gait</td>
<td>Antalgic type of gait using one e/c indoors and furniture walking effortful with reduced knee and hip flexion during swing phase and no trunk rotations. Slow cadence. Good static balance with no antero-posterior sway during the Clinical Test for sensory Integration of balance but reduced dynamic and reactive balance.</td>
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Impression of Diagnosis

This patient presented with an acute flare up of her chronic LBP due to degenerative changes in her lumbar spine and acute bilateral knee pain with a history of chronic pain and bilateral total knee replacement. It has been difficult to establish which pain started first and aggravated the other due to biomechanical and postural imbalance.

Treatment and management plan

Following the initial assessment with the subjective and objective examination analysed, the following intervention was decided, taking into account the relevant literature with the aim of reducing pain, improving mobility and functional abilities.

This patient formally identified two community physiotherapy goals using the Goal Attainment Scale (GAS). Her short term goal was to be able to mobilise indoors using her walking stick or no aids. An outdoor mobility goal was set using a four-wheeled walker with the aim of...
avoiding the need of using a wheelchair. Acupuncture was going to be trialled to aid pain reduction to facilitate these goals, together with exercise based physiotherapy and education (posture, pacing and energy conservation).

An informed consent was obtained for all sessions after providing an explanation of the proposed treatment, its effects and possible adverse reactions. A written information leaflet was given to the patient and a checklist of contraindications/precautions was completed and signed before proceeding.

The treatment consisted of 9 sessions. Flexibility lumbar spinal exercises were provided together with gentle spinal stabilization exercises to improve active range, stability, reduce stiffness and prevent tightness. Additionally, strengthening exercises to improve lower limb strength and Otago based exercises to improve dynamic balance were prescribed together with desensitization techniques. Gait re-education indoors using one elbow crutch/no aids and education to reduce sedentary activities and avoid the cycle of inactivity were provided. It was not possible to provide a more “hands on” approach since the patient could not tolerate manual techniques during the intervention.

Reasoning for point selection

As a general rule it is advised to use up to six needles for the initial treatment in order to observe the response (White A et al, 2008). Four needles were initially used since it was her first acupuncture treatment. Large Intestine (LI) 4 and Stomach (ST) 44 bilaterally were the selected points distally for a central response and calming effect. Gradually, more points were added to a maximum of fifteen (Meng CF et al, 2003) using local points in the Bladder meridian to treat her local/central LBP described from L2 to L5 level. Local knee points to aid a local chemical response were used to treat her right knee first due to existing swelling in her left knee and gradually being able to use local points in both knees. Intra-articular knee points were avoided since this patient had bilateral knee replacements.

Wu et al (1999) demonstrated by needling considered strong and influential points in Chinese medicine, ST36 and LI4 produced evidence of activity in the descending anti-nociceptive pathways and some evidence of activity of the limbic areas associated with pain response, this study utilized functional MRI. Acupuncture in the genuine points resulted in higher scores for DeQi and bradycardia compared with controls undergoing minimal acupuncture. The controls stimulation did not produce the physiological responses or the changes in brain tissue activity. (Hopwood, 2004)

A number of recent fMRI studies have shed more light in the brain structures that are activated or deactivated during acupuncture. Amongst other areas, manual acupuncture at LI4 and Liver (LR) 3 caused deactivation of some prefrontal cortex and anterior cingulated cortex areas, respectively (Yan et al 2005). In an earlier study, the aforementioned areas were shown to be activated following experimental mechanical nociceptive pressure in healthy volunteers (Creac’h et al 2000), so this might imply that LI4 and LR3 have pain-modulating effects. Evidence for bilateral deactivation of amygdala, amongst other areas, following electro-acupuncture was provided by a study investigating the stimulation of ST36, Spleen (SP) 6, Gall Bladder (GB) 34 and Bladder (BL) 57 points (Zhang et al 2004).

This patient protocol started introducing LI4 bilaterally due to being the master point for pain and relaxation combined with ST44, this being a master point for lower limb pain distal to the affected area. During her second session, Kidney (KI) 3 was introduced bilaterally for being a good point for patients suffering with osteoarthritis to stimulate a kidney systemic effect of bone growth. However, this acu-point was not used after the patient reporting DeQi not being achieved during two consecutive sessions. Two further points were added on her second session as local points for her right knee pain aiming for a combined local and contra lateral effect as her left knee presented with oedema and hypersensitivity. ST36 (R) and ST 34 (R) were selected based on being acu-points on Traditional Chinese Medicine (TCM) meridian theory to treat joint pain (Brian M et al, 2004).

Four further points were added to the protocol in session 3, Bladder meridian (BL) 23 (B) and BL 24 (B) which traversed the paravertebral region along her lower back local to her pain, disc bulges and degenerative changes (Meng CF et al, 2003) and also BL23 being a significant point for bone
strengthening in degenerative problems. Following her first 3 sessions, the patient started reporting a reduction in pain levels and hypersensitivity of her left knee together with an observable decrease in her knee oedema. Therefore, in session 4, two more local right knee points were added in the Spleen meridian, SP10 and SP9 and one more Bladder meridian point, BL 25 (B) was also introduced to the treatment protocol.

During session 5, her left knee was treated using local points due to the oedema remitting together with her hypersensitivity and pain levels, introducing Stomach (ST) 36, ST34 and Spleen (SP)10 (Brian M et al, 2004). A bit of swelling was still present medially and inferiorly so Spleen (SP) 9 could not be introduced just yet. Following session 5, there were further reported improvements in pain levels and swelling reduction. She was able to mobilise with no aids for short distances indoors with a slow cadence to maintain good postural alignment avoiding an antalgic gait pattern. Her transfers appeared less effortful with no need of upper limb support when standing.

During her last session, local knee points were selected, adding one more in her left knee, SP9 since no swelling was apparent, using a total of 14 needles with DeQi strongly achieved in all acupuncture points. After achieving a pain reduction and functional improvements and now being able to mobilise unaided indoors, it was decided that this session was her last acupuncture treatment having provided a window of opportunity to start working in her outdoor mobility goal.

Table 3. Outcome measures and results
(TUAG) Timed up and go test; (VAS) visual analogue scale; (Lx) lumbar; (WB) weight bearing; (EQ5D)

<table>
<thead>
<tr>
<th>Outcome measure</th>
<th>Initial</th>
<th>Final</th>
</tr>
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<tbody>
<tr>
<td>TUAG with one crutch</td>
<td>55 sec</td>
<td>40 sec</td>
</tr>
<tr>
<td>TUAG with no aids</td>
<td>Unable</td>
<td>44 sec</td>
</tr>
<tr>
<td>180º turn one crutch</td>
<td>6 steps</td>
<td>4 steps</td>
</tr>
<tr>
<td>180º turn no aids</td>
<td>Unable</td>
<td>8 steps</td>
</tr>
<tr>
<td>VAS Lx central pain at rest</td>
<td>VAS 5/10</td>
<td>VAS 3/10</td>
</tr>
<tr>
<td>VAS Lx central pain WB</td>
<td>VAS 8/10</td>
<td>VAS 6/10</td>
</tr>
<tr>
<td>VAS (R) Knee pain at rest</td>
<td>VAS 3/10</td>
<td>VAS 0/10</td>
</tr>
<tr>
<td>VAS (R) Knee pain with movement/ WB</td>
<td>VAS 5/10</td>
<td>VAS 3/10</td>
</tr>
<tr>
<td>VAS (L) Knee pain at rest</td>
<td>VAS 6/10</td>
<td>VAS 1/10</td>
</tr>
<tr>
<td>VAS (L) Knee pain 1/T / with</td>
<td>VAS 9/10</td>
<td>VAS 4/10</td>
</tr>
<tr>
<td>EQ5D</td>
<td>44542 / 30%</td>
<td>33521 / 50%</td>
</tr>
</tbody>
</table>

Discussion

This case study attempted to analyse and present the combined physiotherapy management and acupuncture of a patient complaining of bilateral knee pain and central lower back pain in the community setting. Treatment was decided based on her pain mechanism, the chronicity of the disorder and her functional goals in the environment of her own home.

In the acupuncture treatments DeQi was achieved although in her first session it took a couple of stimulations until she reported a defined sensation. Only a mild DeQi was felt in Kidney (KI) 3 (B) but it was inconsistent. The first session lasted 10 minutes and the time gradually increased up to 30 minutes. After the first session the patient reported a mild increase in general pain that lasted 24 hours. No other adverse effects were reported and she was responding well to the combined physiotherapy treatment and acupuncture.
Limited evidence was found regarding acupuncture treatment after knee replacement surgery. Therefore a limitation to the study was finding evidence to validate the use of acupuncture and also not to use intra-articular points such as Stomach (ST) 35, Xiyan and Heding, which are good local points to treat knee pain (Brian M et al, 2004). Further research is needed in this area.

Manheimer et al (2005) concluded in their meta-analysis that acupuncture was an effective treatment for chronic low back pain. There was no evidence suggesting that acupuncture was more effective than other active therapies and acupuncture seemed less effective than spinal manipulation. This patient was unable to tolerate passive manual spinal mobilisations techniques, which might have aided a quicker recovery.

On reflection, according to TCM, the “four gates” LI4 (B) and LR3 (B) exhibit a powerful analgesic effect so these points could have been selected initially for a more calming effect and pain modulation (Creac’h et al 2000) instead of LI4 (B) and ST44 (B) as an introduction to acupuncture. GB34 could also have been selected this being an influential distal point for lower back pain as well as a strong relaxation point (Zhang et al 2004).

Upon further reflexion, KI6 (B) or KI9 (B) could have been used for strengthening of the bones due to the osteoarthritis presentation to aim for a stimulation of the kidney systemic effect after DeQi not being achieved using KI3 (B) instead of not using any KI points at all. I could have used Small Intestine (SI) 3 combined with BL62 for a more systemic response since SI3 is a good distal point for the spine that was easily accessible with the patient being treated in sitting. Also, BL 60 (B) could have been included being in the same meridian and a good distal point for the treatment of LBP. Additionally, SP6 (B) could have been a good choice to aid reducing the knee inflammation.

Thomas KJ et al (2005) concluded that acupuncture was significantly more effective in reducing pain in the long term than traditional physiotherapy alone and both acupuncture and sham acupuncture were found statistically significant in the reduction in pain compared with conventional treatment (Haake M et al, 2007). A pragmatic randomized trial by Witt CM et al (2006) concluded that acupuncture combined with usual care gave a clinically relevant benefit from pain. Although, there is limited evidence regarding acupuncture treatment and its efficacy reducing pain after knee replacements, there is sufficient evidence to consider acupuncture as an option for treatment of chronic knee pain (White A et al, 2006). Current evidence demonstrates that acupuncture is likely to provide a replacement for Non-steroidal anti-inflammatory drugs (NSAIDs), being at least equally effective, probably more cost effective and much safer (White A et al, 2006).

Although current estimates of acupuncture effects on chronic pain are statistically significant and clinically important, evidence is conflicting and further research is needed (Manheimer E et al, 2005).

National Institute for Health and Clinical Excellence (2009) recommends considering offering a course of acupuncture comprising up to a maximum of 10 sessions over a period of 12 weeks. However, due to departmental restrictions, we can only offer 6 sessions. In some patients with chronic pain, this might not be enough to get the necessary accumulative effects. Although, White A et al (2007) defined acupuncture as adequate if it consisted of at least 6 sessions, at least once per week with at least 4 points for the treatment of chronic knee pain.

In conclusion, the integration of exercises, gait and postural re-education in combination with acupuncture has demonstrated good pain management, improving movement, muscular strength and posture and helping to achieve part of her goals. However, the intervention required significant number of sessions and more input needs to be invested in order to continue working towards the achievement of her outdoor mobility goal. However, these are hard to justify under the current climate of progressive departmental restrictions due to funding cuts. The question is: how long can we offer long interventions?

Acknowledgement

This case was originally submitted as part of the final assessment for the AACP accredited Foundation Course in Acupuncture taught and assessed by Jon Hobbs in September 2012 at St Mary’s Hospital, London. The author thanks the patient for her compliance and trust throughout all sessions.
References


Natalia Guillen-Obis studied Physiotherapy at the Rovira and Virgili University in Catalonia, Spain, qualifying in 2000. Natalia currently works in the Adult Community Rehabilitation team at Homerton University Hospital working as a senior level physiotherapist and has previously held a variety of clinical posts within the National Health Service (NHS) for the past 5 years in London. After qualifying, she worked in private physiotherapy practices and sport injury centres in Spain and Sydney, Australia, where she lived for three years before she moved to London in 2006. She completed her 80 Hour Foundation Acupuncture Course in September 2012 and it is currently involved in a Randomised controlled trial at her current work place involving knee osteoarthritis and acupuncture in the community setting. She looks forward to furthering her skills as a chartered physiotherapist practically and academically.
**Appendix A. Acupuncture Intervention**

Brand of needles > Classic Plus: sterile, copper handle, individually packed with guided tube.

Large intestine (LI), Stomach (ST), Kidney (KI), Spleen (SP), verbal consent obtained (VCO), bilaterally (B), left (L), right (R), lower back (LB), Perpendicular (Perp.), Oblique (Ob.), Visual analogue scale (VAS).

<table>
<thead>
<tr>
<th>Rx</th>
<th>Selected Points/ needle length/ direction/ needle dimension/ depth of insertion</th>
<th>Needling technique</th>
<th>‘Dose’</th>
<th>Rx Response/ Adverse effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LI 4 (B) 25mmx0.25 Perp. 1cm depth ST 44 (B) 25mmx0.25 Perp. 0.5cm depth</td>
<td>5 min rotating needles</td>
<td>10 min</td>
<td>VCO 4 needles in total treated in supine lying with a pillow under the knees and the forearms. Used major distal analgesic points since intense pain affecting knees and LB to aid central mechanism for general pain relief as an introduction to acupuncture. Felt DeQi but very mild initially in ST44 (B) and LI4 (B) but DeQi sensation was achieved in all 4 points with the last stimulation. No adverse effects reported during session. On next visit reported a temporary increase in pain levels after intervention that lasted 24 hrs</td>
</tr>
<tr>
<td>2</td>
<td>LI4 (B) 25mmx0.25 Perp. 1cm depth ST44 (B) 25mmx0.25 Perp. 0.5cm depth KI 3 (B) 30mmx0.25 Perp. 0.5cm depth ST36 (R) 40mmx0.25 Perp. 2cm depth ST34 (R) 40mmx0.25 Perp. 2cm depth</td>
<td>5 min rotating needles</td>
<td>20 min</td>
<td>VCO. 8 needles in total treated in supine lying with pillow under knees and forearms. DeQi sensation was not achieved in KI3 (B) &amp; ST44 (L) during initial stimulation. Mild De Qi in KI3 (B) with last stimulation but DeQi sensation was strongly achieved in rest of points. No adverse effects reported</td>
</tr>
<tr>
<td>3</td>
<td>ST44 (B) 25mmx0.25 Perp. 0.5cm depth KI 3 (B) 30mmx0.25 Perp. 0.5cm depth ST36 (R) 40mmx0.25 Perp. 2cm depth ST34 (R) 40mmx0.25 Perp. 2cm depth BL23 (B) 40mmx0.25 Ob. 2cm depth BL24 (B) 40mmx0.25 Ob. 2cm depth</td>
<td>5 min rotating needles</td>
<td>20 min</td>
<td>VCO. 10 needles in total treated in sitting. DeQi sensation strongly achieved in ST36, ST34 &amp;ST44. Mild Qi reported in BL23 &amp; BL24 (B) and no Qi was felt in KI3 (B). Stopped using LI4 (B) since good systemic effect achieved reporting feeling relaxed after sessions and a reduction in pain levels together with swelling and hypersensitivity and adding more relevant point to the protocol. No adverse effects during session</td>
</tr>
<tr>
<td>4</td>
<td>ST44 (B) 25mmx0.25 Perp. 0.5cm depth ST36 (B) 40mmx0.25 Perp. 2cm depth ST34 (R) 40mmx0.25 Perp. 2cm depth SP10 (R) 40mmx0.25 Perp. 2cm depth SP 9 (R) 40 mmx0.25 Perp. 1.5cm depth BL23 (B) 40mmx0.25 Ob. 2cm depth BL24 (B) 40mmx0.25 Ob. 2cm depth BL25 (B) 40mmx0.25 Ob. 2cm depth</td>
<td>5 min rotating needles</td>
<td>30 min</td>
<td>VCO 13 needles in total treated in sitting. It was decided not to include KI3 anymore since DeQi was not obtained in previous sessions adding more local BL points (BL25) and local knee points SP9 and SP10. Swelling reducing in (L) knee but puffiness medially on (L) knee and superiorly so unable to use local points in (L) knee apart from ST 36(L) today since no swelling present in the area. No medial swelling in (R) Knee present. De Qi sensation achieved in all points very intense and quick in ST 36 (B). No adverse effects reported feeling relaxed after session. VAS improving</td>
</tr>
<tr>
<td>Date</td>
<td>Points and Details</td>
<td>VCO</td>
<td>Description</td>
<td></td>
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<tr>
<td>5 12/07/12</td>
<td>ST44 (B) 25mmx0.25 Perp. 0.5cm depth, ST36 (B) 40mmx0.25 Perp. 2cm depth, ST34 (B) 40mmx0.25 Perp. 2cm depth, SP10 (B) 40mmx0.25 Perp. 2cm depth, SP 9 (R) 40 mmx0.25 Perp. 1.5cm depth, BL23 (B) 40mmx0.25 Ob. 2cm depth, BL24 (B) 40mmx0.25 Ob. 2cm depth, BL25 (B) 40mmx0.25 Ob. 2cm depth</td>
<td>30 min</td>
<td>5 min rotating needles VCO 15 needles in total treated in sitting. Swelling in L knee almost gone completely. A bit of oedema present medially and inferiorly in (L) knee so unable to use SP9 (L) but able to add SP10 (L) as a local point to treat L knee pain. DeQi sensation achieved in all points. No adverse effects reported with pain further pain reduction in knees specially.</td>
<td></td>
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<tr>
<td>6 16/07/12</td>
<td>ST36 (B) 40mmx0.25 Perp. 2cm depth, ST34 (B) 40mmx0.25 Perp. 2cm depth, SP10 (B) 40mmx0.25 Perp. 2cm depth, SP 9 (B) 40 mmx0.25 Perp. 1.5cm depth, BL23 (B) 40mmx0.25 Ob. 2cm depth, BL24 (B) 40mmx0.25 Ob. 2cm depth, BL25 (B) 40mmx0.25 Ob. 2cm depth</td>
<td>30 min</td>
<td>5 min rotating needles VCO, 14 needles in total treated in sitting. It was decided to stop using ST44 (B) to allow the introduction of more local knee points after a satisfactory systemic effect was achieved. No swelling present in Knees. No hypersensitivity present in (L) knee anymore. Reported reduction in pain levels with improvements in mobility, posture and standing tolerance. DeQi sensation strongly achieved in all points very quickly and intense. No adverse effects reported this being her last session of acupuncture to start working in outdoor mobility during next visits.</td>
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