Postoperative pain management and acupuncture: a case report of meniscal cyst excision

Nikiforos Galanis, Chara Stavraka, Triantafyllia Boutsiadou, John M Kirkos, George Kapetanos

We report a case of pain management after a meniscal cyst excision, with the use of electroacupuncture (EA). There are a few reports which indicate that postoperative pain management is prerequisite for the patient’s optimal recovery, but surveys in the UK and the USA have identified an unacceptable prevalence of poor pain control after surgery, which might increase the risk of a chronic pain state. The conventional treatment of postoperative pain includes systemic medications such as opioids, non-steroidal anti-inflammatory drugs and other non-opioid agents. In our case, the rehabilitation lasted for 6 months without significant benefit. After that period our patient was treated with EA. By the end of the first EA session the relief of pain was notable and after a course of 10 treatments the patient reported complete relief of the symptoms with no recurrence during a 2 year follow up period. In conclusion, this might indicate that EA could be useful for postoperative pain management.

CASE HISTORY

A 62-year-old woman was admitted to our hospital reporting pain varying in severity from 6 to 8, registered using 0–10 point numerical rating scale. The pain had started gradually 3 months ago and was located in the lateral aspect of the head of left fibula. She described it as dull, aching and also cramping with radiation in the distribution of the L5 dermatome. Nocturnal pain was reported whilst the patient stated its aggravation during walking and remission when resting. Following her GP’s prescription she was under pharmacological treatment with systemic medication such as paracetamol and non-steroidal anti-inflammatory drugs for the last 3 months with no improvement.

The patient’s medical history included seasonal allergic asthma under treatment with desloratadine. Routine gynaecological examination had recently revealed a unilocular ovarian cyst, 3 cm in size with benign characteristics, requiring no treatment. The patient also suffered from chronic hepatitis C, with alanine aminotransferase and aspartate aminotransferase within normal limits, no evidence of hepatic damage detected in CT images, and did not receive interferon treatment. She had undergone cholecystectomy, appendicectomy and tonsillectomy with no previous history of prolonged postoperative pain. There was no history of trauma to the painful region.

Physical examination revealed a palpable painful mass at the main region of the pain, with no abnormality found in the spine or hip joint.

Routine blood and urine examination showed no abnormalities. x Rays and MRI were ordered due to suspicion of either: (1) any kind of mass as a lipoma or synovial sarcoma, (2) any kind of meniscal cyst such as parameniscal or synovial cyst. No abnormalities were detected in the x ray. MRI revealed a parameniscal cyst with no serious meniscal lesion. Two days later our patient underwent a minimal invasive excision. The cyst was removed and the histopathological examination confirmed the diagnosis.

The patient followed the conventional physiotherapy and pharmacological pain control for 3 months. After that time the patient reported similar discomfort as preoperatively. The pain initially intermittent, gradually became constant and its intensity sometimes reached 8 out of 10 (0–10 pain scale) with additional accompanying symptoms such as numbness, pins and needles. The physical examination, the postoperative MRI and the electromyogram did not reveal any abnormalities. Being disappointed about her steadily declining progress and increase in status of pain, we decided to change the pharmacological intervention for 3 months more, adding also antidepressants. After that period the patient was re-evaluated. With no pain remission and no specific operative target, electroacupuncture (EA) was offered as a last resort.

TREATMENT AND RESULTS

EA was performed by a trained and experienced physician following Western style acupuncture. Our patient was treated by use of eight points unilateral, connected in pairs (ST36–SP10, BL39–GB34, ST34–SP9, BL38–KI110) with electrical stimulation at about 25 minutes at 80 Hz/2 Hz at the highest tolerable intensity.

The needles we used (Wujiang Shen Li Medical & Healthmaterial Co., Ltd) were sterile, disposable, with 0.25×0.25 mm gauge and inserted at a depth of 1–1.5 cm perpendicularly.

Acupuncture treatment consisted of three sessions per week for two weeks followed by four additional sessions, once a week, to maintain the acupuncture results.

After the first session the patient responded to the therapy and two sessions later the pain was sufficiently reduced (at about level 2). By the completion of acupuncture sessions the patient reported no further discomfort. After two years follow-up period the patient reported no recurrence.

DISCUSSION

A meniscal cyst is a cystic lesion of the meniscus, varying in prevalence from 1–2%7 to 7–8%6 according to arthroscopic and surgical findings. Meniscal cysts can be divided into three categories: intrameniscal, parameniscal and synovial cysts. Parameniscal cysts are more common in comparison to intrameniscal and synovial cysts.7

A number of theories regarding the aetiology of meniscal cysts have been proposed. The most widely accepted theory describes that meniscal cysts originate from the extrusion of synovial fluid through an adjacent meniscal tear.5–12

Pain that deteriorates by activity is the main clinical symptom accompanying meniscal cysts. In our case, the severity of pain was affecting the quality of her life. Large meniscal cysts usually appear as painful palpable masses along the anterolateral aspect of the knee joint, whereas small ones can also be asymptomatic.5–13

This case report showed that EA could be a useful treatment for the management of chronic postoperative pain. Postoperative pain represents an unrecognised and poorly treated clinical problem increasing the risk of a chronic pain state.12,14 though its management is essential for the patient’s recovery.20 In our patient, EA was performed 7 months after the surgery, when the pain had persisted beyond the period of natural healing and had become chronic. Pain is characterised as chronic when it exceeds a 3 month (clinical limit) or a 6 month...
period of time (research limit).\textsuperscript{21, 22} During that period our patient was under pharmacological treatment consisting of paracetamol, non-steroidal anti-inflammatory drugs, opioids and other non-narcotic agents\textsuperscript{2}\textsuperscript{12} (hydrochloric amitriptylin and gabapentin) with no relief of the symptoms.

The origin of pain is not clearly defined in our case. Possible causes could be: a diagnostic misjudgement of the origin of pain; an unsuccessful operation; iatrogenic (the most important cause of long-term post surgical pain is iatrogenic due to peripheral nerve injury or dysfunction)\textsuperscript{23}; the duration (7 months) of pain; an unsuccessful operation; iatrogenic and neuropathic agents\textsuperscript{12} (hydrochloric amitriptylin and gabapentin) with no relief of the symptoms.

The occurrence of associated symptoms such as numbness, pins and needles sensation, and the duration (7 months) of pain seem to suggest neuropathic origin.\textsuperscript{17} We must also have in mind that is not uncommon nociceptive and neuropathic pain to be present simultaneously.\textsuperscript{21–23}

In our case, the effect of acupuncture could have been due to placebo, though we could assume that our patient was not susceptible to strong placebo effect, because of the absence of strong placebo effect after the operation and the other therapeutic agents.

In our patient it is difficult to evaluate the placebo effect and to determine the origin of pain, although its remission could indicate that EA was a useful intervention for the pain management. Despite the indisputable efficacy of acupuncture in treating nociceptive pain its role in clinical medicine and especially in the management of chronic post-surgical pain, still remains under controversy.\textsuperscript{24–26} The main reasons for such inconclusive results are a lack of a sufficient number of objective studies demonstrating an analgesic effect and the insufficient understanding of the exact physiological mechanisms of acupuncture analgesia. There are several randomised, controlled clinical trials and systematic reviews published, regarding acupuncture–related pain relief. Some of them have demonstrated the efficacy of acupuncture in reducing chronic pain or offering postoperative pain relief.\textsuperscript{26–29} According to others, there is limited and inconclusive evidence that acupuncture is more effective for chronic pain than no treatment or placebo.\textsuperscript{30, 31} The fact that acupuncture’s success depends on numerous factors such as patient selection, and the therapist’s training and skill level, complicates the interpretation of the available studies.

\textbf{SUMMARY}

There are several reports published in the English literature regarding EA for the management of postoperative pain, but its efficacy still remains controversial. There is no other case reported in the English literature to assess the efficacy of acupuncture or EA in the management of chronic postoperative pain after the surgical excision of a meniscal cyst. Our case might be an additional indication that EA could be useful for chronic postoperative pain management.

Future research is necessary to enlighten this field.

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