Does acupuncture help in helping the ones you cannot help? The role of acupuncture in facilitating adaptive processes

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ABSTRACT
In the public funded healthcare arena, acupuncture is delivered with ‘disease’ as the defining label that grants access to funding. This funding process is regulated by recommendations derived from systematic reviews and meta-analyses of randomised controlled trials. However, ‘off-label’ use of acupuncture, outside established indications like pain or nausea, happens frequently, though there is a paucity of data about this situation. The case of a young man with weakness and fatigue as residuum of relapsing-remitting multiple sclerosis highlights the situation. His treatment goal was well defined. Specific and non-specific needling effects and the provider-patient relationship are explored. The role of technological and adaptive processes in the treatment of long-term conditions, the effect of somatosensory stimulation on different levels and the implication for funding are discussed.

BACKGROUND
Acupuncture is often sought by patients and referrers as treatment where other treatments have failed or been rejected. The funding of services using acupuncture on the UK’s National Health Service is regulated by disease-categories and demonstrated effectiveness in randomised controlled trials. Nevertheless instances of ‘off-label’ use of acupuncture are frequent. On several occasions I encountered the helpfulness of somatosensory stimulation with high intensity in situations like reduced walking distance due to neurogenic and vascular claudication. There is a paucity of data about this situation. The case of a young man requesting acupuncture to address aspects of his activity limitation and participation restriction caused by multiple sclerosis (MS) highlights the issue.

PRESENTING COMPLAINT
A 25-year-old male and had been referred by the MS nurse into the high volume acupuncture clinic of a secondary care hospital. He was diagnosed with relapsing-remitting MS. The last episode left residual bilateral lower limb weakness, right more than left. He reported slips, falls and trips and a sensation of ‘heaviness’ mainly in his right leg. It affected his ability to walk and to use public transport. He failed several driving tests and attributed this to the reduced function of his right lower leg. It affected his ability to operate the accelerator pedal in the car. He was at the process of setting up his own business. He also reported having no energy and disrupted sleep.

HISTORY
At the age of 16, the patient had a 2-week episode of right-sided hemiparesis. It subsided without residual deficit and MS was mentioned as a possible cause, but he did not get referred because it subsided so quickly. Eight years later he noticed blurred vision, bladder disturbances and headaches. He also felt weak and his right foot was ‘catching’ the floor from time to time, leading to slips and falls. He was referred to a neurologist in 2008 and after investigations including MRI of the head and cerebrospinal fluid aspiration MS was diagnosed. He was treated in a multidisciplinary fashion involving specialist care with consultant, physiotherapy, specialist nursing for continuous care and his general practitioner.

EXAMINATION
On examination there were no gross significant neurological deficits. Tone was slightly elevated on the lower limb, but he was able to do heel and toe-raises and walked without ataxia. Heel-shin coordination and dysdiadochokinesis were without pathological abnormality. There was a normal muscle bulk, no wasting, fasciculation or spasticity. During the conversation the patient mentioned disturbed sleep and racing thoughts. He attributed this to pressures on his work life. Eye contact was good, there was no psychomotor retardation and he did not have any suicidal ideation. The motivation to attend was a previous good response to acupuncture treatment (see box 1).

Box 1 The patient’s own description of the role of acupuncture in the course of his illness
‘When I was 16 I was paralysed on one side for 14 days. My GP thought it was MS and thought about referring me but by then everything had resolved and I was told I had to wait. It was eight years before I had the first relapse. At that time I had problems with my vision, my bladder, my digestion and my right leg was heavy and weak. I had frequent falls and slips. In the neurology clinic they did all the tests and diagnosed MS. I asked the MS nurse whether I could have acupuncture. I had had acupuncture in the past at a Chinese shop on the high street and it worked well for me. But I ran out of money and the nurse said that it was available on the NHS. After the first session of the electroacupuncture my right leg felt light, the heaviness had gone. When the doctor was not in the room I turned the power of the electricity up to the maximum. I thought if this helps, this will help more. Luckily I have a high pain threshold. I also decided to go to the gym, to do stretches and to look after myself. At that time a lot was going on in my life, I was setting up two businesses. I also did not sleep well. That improved with taking the tablets—Mirtazapine. When I went for my driving test I was scared about failing and I decided to have acupuncture the day before, I wanted to give it everything I could. With the acupuncture I could walk longer and had fewer slips and falls. I might carry on using electroacupuncture by myself . . .’
IMPRESSION
The diagnostic formulation was residual right sided leg weakness and associated impaired balance and coordination secondary to remitting/relapsing MS. The rehabilitation formulation was suboptimal adaptation to an established disease process. I thought that there were several issues which could all be addressed by somatosensory stimulation within a collaborative therapeutic relationship. I speculated that the lack of coordination and fatigue were central in origin and could be modified by providing intensive afferent input, facilitated by the fact that he did not have a diminished pain threshold. I also wondered whether the conversations alongside a direct stimulating physical intervention could address the depression and anxiety the patient reported, leading potentially to problem-solving and health-promoting activities. There was a clear treatment goal: improvement in flexion/extension endurance of the right foot, increased balance, extended walking distance. This was the rehabilitation goal for the limitation of his activities; the translation into social participation was the ability to pass his driving test, extending his independent mobility.

TREATMENT
After the contracting conversation I decided to use intramuscular stimulation with electroacupuncture (CEFAR Acus 4, Malmö, Sweden, Programme 5 dense/disperse 80/2 Hz). I used the points Zusanli and Zongping (ST36+ST36.5) in tibialis anterior for the high stimulation component and alongside SP6 in flexor hallucis longus. The duration was 30 min and the interval was weekly for 4 weeks, then two more fortnightly sessions (figure 1).

OUTCOME
The patient reported an immediate change of the sensation of his right leg. He said that the heaviness he experienced before had diminished significantly. He also reported improved coordination and fewer slips and trips. The loading capacity that generated the sensation of heaviness occurred increased. The changes were, he said, lasting. He mentioned retrospectively that he had deliberately arranged to have one treatment on the day before his driving test in order to optimise his performance. I could not validate his reports with exact measurements or a condition-specific outcome tool (walking distance, walking speed, performance on posturographic platform) and the focus of this treatment was targeting only mobility as a subsection of MS-related impairments. MS-specific outcome tools were not available in the acupuncture clinic. The patient also told me that he took up exercises and worked on his mental attitude towards overcoming obstacles in his life. The effects of the combined treatment have been sustained in the last 8 months since the treatment sessions stopped. The patient wonders whether regular ‘top-ups’ for maintenance of the treatment effect are needed and is looking, with the author of the paper, for ways to implement electroacupuncture through self-needling into his personal care.

DISCUSSION
This case shows the positive outcome of an intervention the patient chose to use as an add-on to his disease-specific care package. He chose this treatment modality on the grounds of a positive experience with acupuncture in the past, only the financial consequences of purchasing this service in the high-street sector made him seek this treatment in the publicly funded healthcare system. This constitutes expectation towards a positive outcome for his preferential treatment. At the time he started the acupuncture treatment he had been treated with Copaxone as disease-modifying drug for remitting-relapsing MS for 8 weeks. Inspired by the somatosensory stimulation and our conversation about the neurophysiological effects of the treatment (‘you also stimulate deep intramuscular receptors by doing exercises, and you get the additional health benefit from it’) he took up regular exercises. His outlook changed. His mood changed. His position in the illness trajectory changed. He gained control. Healing can be divided into technological healing, natural healing and interpersonal healing. Drugs and operations are examples of technological healing, the time course of self-limiting or remitting-relapsing conditions can be explained by natural healing. All these components were present in this case. In comparison to the other modalities interpersonal healing does not happen to or in the patient, it happens with the patient. Usually these types of healing occur in conjunction with each other. In this case treatment effects can be attributed to any or all of the types of healing mentioned above.

Another aspect is the attitude towards a chronic condition. During the treatment the patient changed his attitude and gained a proactive stance associated with increased control (or in psychological terms increased self-efficacy) over the present and a perception of being able to influence the course of the disease over time. The onset of a long-term condition

Figure 1 Needle location ST36 and SP6.
constitutes a biographical disruption. Having a chronic condition requires work: work to manage daily activities, to manage illness and to make sense of the illness and of one’s situation, and its consequences for the future. The aspect of interpersonal healing associated with the acupuncture treatment may facilitate adaptive processes on several levels—from the central effects of intramuscular stimulation to the transformative effects of a beneficial interpersonal relationship.

The other dimension is in the realm of the placebo effect, the activation of active endogenous systems by the intervention. It is known from studies with people with Parkinson’s disease how expectation and conditioning can interact with dopaminergic pathways in higher order motor regulation. Knowing that fatigue and movement coordination are considered to be centrally driven activities it can be presumed that motor coordination in this case is also subject to central regulation and that the complex intervention ‘intramuscular strong stimulation in therapeutic context’ interacted with these systems. The clinical application of the placebo response is hampered by the poor predictability and poor sustainability. This leads to questions about how stimulation therapy interacts with the disease mechanism and adaptation processes. Separating specific needling effects (happening to the patient) and non-specific effects of the interaction (happening with the patient) should clarify this puzzling situation. One way to separate these components would be to compare similar interactions involving an augmented consultation style, including touch, with the same interaction using electroacupuncture. This would separate the deep intramuscular stimulation component from the multisensory mix of the therapeutic interaction. A commonly adopted opinion is the distinction between structural and functional aspects of impairment, based on the assumption that structural causes are irreversible and functional impairments amenable to therapeutic manipulation. It is frequently observed that the measurable amount of disease burden does not correlate with the impact on activities and social functioning. It is also observed how refractory to therapeutic manipulation some of the potentially reversible conditions—mainly persistent pain, associated with depression and anxiety—are. This highlights a need to operate within a concept that encompasses therapeutic modalities directed at the disease mechanism equally with manipulations addressing the adverse effects of the disease-modifying healthcare technologies and the embodied responses to the lived situation.

If it came to funding allocations for services or interventions which were able to facilitate the rehabilitation in terms of diminished activity limitation and increased participation in society this would mean that the funding had a different denominator than disease status.

This case was presented in partnership with the patient at the British Medical Acupuncture Society autumn meeting. Questions were directed at the patient and me (see box 2).

The treatment sessions ended in May 2010. The plan is to continue the treatment in the form of self-acupuncture using an electroacupuncture-machine and ST36. The patient is already used to penetrating his skin layer with needles, needing to inject himself with the disease-modifying drug and therefore dry

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**Box 2 Discussion between the audience, the presenter and the patient**

This case was presented in partnership with the patient at the British Medical Acupuncture Society autumn meeting. Questions were directed at the patient and me.

‘Did the acupuncture have effects on other aspects of your condition, for example bladder problems and gut problems?’ He replied that ‘it certainly did not have negative effects, but I am already on medication’. Two traditional Chinese medicine practitioners asked about my selection of points and stimulation parameters, speculating that different electrical stimulation parameters might have yielded a better result for overall homoeostasis. I answered that choosing these points over others was mainly a compromise between having a location for safe deep intramuscular needling in the area of the affected bodily function and a practical location for positioning—a pragmatic choice. ST36 certainly fulfils the criteria; it would also have been possible to use electroacupuncture at SP6 with adjacent needles in flexor hallucis longus.

‘How much you think the acupuncture treatment contributed to the outcome of the treatment?’ The patient responded that he felt an immediate effect after the first session and believed that this treatment played a considerable role in overcoming the obstacles caused by fatigue and weakness of his right leg.

‘When you prepared for your driving test by using acupuncture, did you do it to actually feel an immediate improvement in function or did you use it to prevent failure?’ This question elicited information about the use of electroacupuncture—as intervention improving actual performance or as a safety measure to prevent the threat of failure caused by muscle fatigue. The patient said that his intention was the latter: to use electroacupuncture as prevention against fatigue.

‘Do you think it was more the effect of the needling or the effect of the provider-patient-relationship?’ The patient replied that he could not separate these components. A similar question was directed at the perceived differences between the interaction with the TCM practitioner and me as a practitioner of Western medical acupuncture. The patient replied that he did not perceive significant differences. He mentioned that the interaction with me included questions about his living circumstances and aspects of lifestyle effects on his condition. He also recalled the interaction as thorough. I do not recollect the interaction as specifically ‘intense’ or ‘complex’ in the sense of relationship work or engagement with his response to adverse social aspects.
needling could become part of his self-management of a long-term condition.17

For me the case illustrates a common situation—the role of somatosensory stimulation alongside other treatment modalities in a multimodal treatment setting. Clarity about the goal of the intervention is desirable. Effects on different levels of organisation reaching from molecular signalling to organisation of social activities within the constraints of an established disease may or may not act in synergy. In this case this happened.

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Contributors This case report has been co-created with the patient, but he preferred to remain anonymous. The presentation including the interaction with the patient and the needling is accessible for members on the BMAS website (http://www.medical-acupuncture.co.uk/Default.aspx?tabid=106&returnurl=Default.aspx%3Ftabid=142). Membership of the BMAS is open to all regulated healthcare professionals.

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