Use of NADA ear acupuncture in an adolescent patient with phantom limb pain after surgery for osteosarcoma

Your readers may be interested to hear of our experiences with ear acupuncture, as they may recall the recent letter by Tseng et al\textsuperscript{1} describing scalp acupuncture in a 74-year-old patient suffering from phantom limb pain. We used National Acupuncture Detoxification Association (NADA) acupuncture in an adolescent girl suffering from phantom limb pain after hemipelvectom for osteosarcoma. Positive effects were found on pain and personal well-being evaluated using the Measure Yourself Concerns and Wellbeing (MYCaW) questionnaire.\textsuperscript{2}

Acupuncture is increasingly used as an adjunct therapy in oncology to treat pain and other symptoms such as nausea and vomiting. However, the evidence in paediatric oncology is scarce, and limited to studies describing a reduction in pain or vomiting.\textsuperscript{3} Contributing factors for the lack of evidence might be fear of needles\textsuperscript{4} or vulnerability of the patients.

Ear acupuncture is used to treat a variety of disorders including both psychological and somatic diseases.\textsuperscript{5,6} Currently, more than 100 ear acupuncture points are known.

The NADA protocol combines five ear acupuncture points (Shenmen (point 55), Liver (point 97), Kidney (point 95), Lung (point 101) and Sympathetic point (point 51) on both ears) with a non-verbal patient approach and group therapy as a simple treatment concept to treat drug withdrawal.\textsuperscript{7} The NADA protocol has been reported to be effective independent of the type of addictive substance.

CASE REPORT

We report a 16-year-old girl who presented with a 2-month history of severe pain in her lumbar region, left drop foot and numbness in her left leg. Two MRI scans of the lumbar spine did not show any pathological findings within the spinal cord or vertebral discs. However, neurophysiological examination revealed radiculopathy. Blood tests showed moderate anaemia, low iron storage, elevated lactate dehydrogenase and alkaline phosphatase. Abdominal and pelvic ultrasound examination...
revealed a tumour mass within the left pelvis. A repeat MRI revealed a tumour (13×10×10 cm) with central necrosis suggestive of Ewing’s sarcoma. Skeletal scintigraphy and biopsy confirmed the diagnosis of osteosarcoma. A full body scan did not show any metastases. Three months after chemotherapy, surgery was performed. As the tumour infiltrated the left sciatic nerve, an external hemipelvectomy was performed. Throughout the postoperative course the patient suffered phantom limb pain, unresponsive postoperative pain, sleeplessness, ruminative thoughts and constant tension as symptoms of post-traumatic stress disorder.

**Acupuncture therapy**

Auricular acupuncture was used as integrative treatment applied by two NADA trained specialists with the aim of reducing stress and improving the patient’s well-being. Ear acupuncture was performed once or twice a week using the five points of the NADA protocol. A non-verbal approach was used and needle insertion in one or both ears was performed according to the patient’s choice. Single-use stainless needles (Seirin Co Ltd, Japan) were 0.2 mm wide and 15.0 mm long. Needles were applied for about 40 min, mostly unilateral, and then removed by one of the therapists. Figure 1 shows the needles in place. A total of 12 sessions were applied over 6 weeks. We did not use a group therapy setting as the treatment took place in the patient’s room on the paediatric oncology ward, which is a deviation from the NADA protocol.

Overall, the patient experienced positive effects during the acupuncture session characterised as a comfortable feeling, reduction of sleeplessness and ruminative thoughts. According to the patient, her tension was significantly reduced, she was calmer and her well-being was improved.

**Well-being self-assessment**

Using the MYCaW questionnaire as a self-assessment tool, we evaluated the patient’s mental well-being before and after acupuncture therapy. Using MYCaW, patients nominate two concerns and score them and their general feeling of well-being on a 7-point scale. Prior to treatment our patient rated phantom leg pain as her biggest concern (6/6) and her general feeling of well-being as ‘as bad as can be’ (6/6). After treatment, phantom pain was rated 1/6 and her general well-being as 2/6. In addition, there was a significant reduction in the patient’s negative feeling, the total energy score improved as well as positive well-being and general well-being assessed after acupuncture treatment.

**COMMENT**

Numerous positive effects have been described following acupuncture treatment including (1) increased physical and mental energy, (2) relaxation, (3) sense of calmness, (4) increased hope, (5) improved sleep and motivation, (6) reduction in stress and (7) a reduction in the side effects of medical or pharmaceutical treatment. In our case, a massive impairment in physical status occurred at a period of her life when physical health is naturally assumed and important in the context of the physical and emotional changes of adolescence. This can generate profound mental, emotional and physical stress.

In our patient, sleep quality, calmness and anxiety were significantly improved after auricular acupuncture, as were her overall comfort, sleeplessness and ruminative thoughts. Throughout the treatment we did not observe any adverse events, although the patient reported minimal pain during needle insertion and occasionally we observed minimal bleeding during needle removal, both of which have been previously described. Furthermore, we did not receive any negative feedback from either hospital staff or the patient’s family members.

NADA acupuncture has been shown to be effective in relieving acute and chronic pain and it is used...
as an effective adjuvant therapy to reduce stress, improve sleep and personal well-being, to treat patients with post-traumatic stress disorder, to reduce analgesic therapy during postoperative pain management and during drug withdrawal.

We report only one patient and her own well-being and therefore our results cannot be generalised. This is the first case of the use of NADA acupuncture as a non-pharmacological adjunct therapy in an adolescent girl with osteosarcoma, after which stress and postoperative pain were reduced and relaxation was increased. Our case report demonstrates that NADA acupuncture in a paediatric oncology patient is feasible, well tolerated and without major adverse effects. Further research should include a larger sample size as well as qualitative and quantitative assessment tools to objectively assess the effects of acupuncture treatment in paediatric oncology patients.

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