

An integrated approach with homeopathic medicine and electro-acupuncture in anaesthesiology during breast cancer surgery: Case reports

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Key Words

Anaesthesiology; Breast cancer; Electro-acupuncture; Homeopathy; Multidisciplinary approach

Abstract

This study investigates the effect of a combination of homeopathic medicine and electro-acupuncture in two patients with breast cancer and severe liver disease who could not receive standard anaesthesia therapy due to liver problems. Specifically, measurable and quantifiable parameters were used to evaluate whether an integrated approach—consisting of electro-acupuncture and a homeopathic medicine diluted above Avogadro's limit (that is, above a potency of 12CH) during the pre-surgical, surgical and post-surgical phases—can improve general well-being of a patient undergoing breast cancer surgery. In breast cancer surgery, we employed an integrated approach consisting of induction with hypnotics and muscle relaxants, followed by maintenance with anaesthetic gas, combined with a homeopathic treatment (*Arnica montana* 15CH and *Apis mellifica* 15CH) before and after surgery and an electro-acupuncture treatment performed in the pre-

and post-surgical phases without any analgesic/pain relieving medications. Both of the patients treated with the integrated approach improved their overall condition without need for other common pain relieving medicines. Additionally, thanks to their rapid awakening, the patients were not relocated to a protected area and the hospitalization was shorter. A multidisciplinary approach incorporating homeopathic medicine and electro-acupuncture can be a solution for patients who need or ask about a different and/or safer alternative to the standard treatment. This approach can offer a safe, much less expensive, non-invasive and viable alternative for such cases. Moreover it can be useful for an opioids free anesthesia.

Introduction

Pain during surgery is not easy to treat and, often, a multidisciplinary approach that integrates different treatments is useful to improve the well-being of patients undergoing surgery. Among these, acupuncture and homeopathy play an important role in today's multidisciplinary approach for the treatment of pain during surgery²⁻⁵. According to this⁶⁻¹⁰, we employed electro-acupuncture and homeopathic medicines in association with traditional anaesthesiology for control of analgesia. Acupuncture is widespread in surgery¹¹⁻¹². Analgesia with electro-acupuncture (EAP) is obtained through an elevation of the threshold of pain and an in-

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creased level of morphinomimetic endogenous substances 13-15.

The equipment used for EAP consists of simple direct-current (DC) impulse generators, provided with oscillator circuits that generate the two types of waveforms prevalently used-- square waves and peaked waves--with frequencies (cycles per second) that can range from a minimum of 0.5 to a maximum of 5000 Hertz. All the waveforms and frequencies generally have the effect of promoting circulation of Qi and blood, and thereby provide relief for many symptoms, in particular for pain. The current output by the devices is relatively low, from 10 to 80 milliamperes (mA), depending on the setting used, while the voltage can range from 40 to 80 Volts, and the frequency from a minimum of 1 up to 100Hz. The mode of output can be continuous, intermittent, or in pulse trains. Generally the standard stimulators do not allow modification of the shape of the wave itself, which is always biphasic square (positive pulse with negative spike and pulse width of 0.2/0.4 milliseconds), considered to be the best for analgesia¹⁶.

Homeopathy has been found to be helpful before, during and after surgery ^{3, 17}. Among homeopathic medicines, Arnica montana and Apis mellifica are the ones most widely used in a surgical setting ^{3, 4, 17-20}. Arnica montana is commonly used to treat inflammation, wounds, hematoma, contusion and pain, by virtue of its chemical composition²¹. Depending on the quality of the raw material, the active compounds identified in Arnica m. are above all sesquiterpene lactones²². There is some experimental evidence in vivo of an anti-inflammatory action of Arnica montana administered as an ethanolic extract²³ or at the 6th centesimal homeopathic dilution (6CH) ²⁴. A French recommendation includes it among the suggested medicines (Grade Ba - Recommendations level based on RCT studies) ²⁵. Recently, Bellavite et al. have provided new insights into how Arnica m. acts in tissue healing, and identified extracellular matrix regulation by macrophages as a therapeutic target ²⁶. In vitro studies show activity of Apis mellifica on regulatory processes of inflammation ²⁷, and it has also proven useful in the treatment of pain related to lactation ²⁰. Integrated anaesthesia could be useful in those cases where the patient refuses the standard treatments or "expresses a wish" for alternative ones, as well as in cases where the standard treatments might be contraindicated. Moreover, other clinicians, such as hepatologists, may suggest this type of anaesthesia to reduce the therapeutic load and stress linked to surgery. This has already occurred in our reality.

The aim of this work is to evaluate, through easy and practical measures, whether the use of acupuncture and homeopathy improves the condition of the patient during the surgical procedure. It additionally evaluates whether these can offer an alternative—where needed--to the conventional medicines used for treatment of pain, avoiding their known adverse effects and impact on the immune system.

Case reports

The multidisciplinary approach represents an opportunity, especially in cases where the patient refuses the standard drug (such as opioids) or explicitly asks for an

alternative one, or in situations where the standard drug is contraindicated. Our first experiences were conducted in the surgical unit of the Senology Department at the Pisa University Hospital, where the integration of complementary medicines into the common service provided to patients has been ongoing for several years. This approach was prompted by direct enquiries from patients, and specific requests from hepatologists who had observed some cases with organic disorders, and so inquired into the possibility of some alternative method.

We began with a patient who asked, during the pre-surgical anaesthesiologist visit, about the possibility of avoiding opioid drugs during anaesthesiology and in the post-surgical phase. The planned surgical procedure was a quadrantectomy for breast cancer combined with reductive mastoplasty and bilateral implant removal. The breast surgery, lasting 2 hours and 40 minutes, was conducted with an integrated approach consisting of induction with hypnotics and muscle relaxants, and maintenance with anaesthetic gas. All these phases were accompanied by a homeopathic treatment before and after the surgery and an electro-acupuncture treatment performed in the pre- and post-surgical phases without any analgesic/pain medications. The awakening and post-surgical phases were good: the patient quickly regained consciousness. This first positive experience with this integrated approach encouraged us to repeat, modify and improve the technique.

Accordingly, in this article we illustrate two similar cases. The two patients were the same age (74 years) and both suffered from an advanced stage of a liver disease, with all the complications which that entails.

CASE 1

The patient was a woman 74 years old, weight 58 kg, height 160 cm with a diagnosis of bilateral breast cancer.

From the pathological anamnesis, we observed a complicated situation: previous episodes of atrial paroxysmal fibrillation, hepatic cirrhosis from a previous infection by HCV, severe portal hypertension, oesophageal varices and portal thrombosis of the main branch and of the portal trunk, hypersplenism syndrome. From 2010 to 2012 she suffered from continuous events of pancreatitis caused by biliary lithiasis and from 2015 she reported 2 nodules of hepatic cancer that couldn't be treated with surgery. In June 2015 she underwent banding of the esophageal varices.

Prior to surgery, a complete hepatic evaluation was performed. We observed good clinical and functional compensation, but also an increased risk of functional hepatic failure. The main intra- and post-surgical risk of hepatic injury is that correlated to possible prolonged hypotension or to pharmacological toxicity.

The chosen surgical procedure for the patient was a quadrantectomy of the right superior breast quadrant, external-superior left quadrantectomy and a bilateral biopsy of the sentinel lymph node. In addition, the evening before the surgery, the patient received a treatment with electro-acupuncture. We used sterile, single-use bimetallic needles with diameter 0.25mm and length 25mm

(Hwato). The insertion technique was without guide tube. The insertion depth of each needle was determined separately for each point, based on the reference standards for that point. The electro-stimulation was applied using an E600HAN instrument with dual power supply (mains power / battery) and a digital display that shows the duration of the treatment, and the frequency, intensity and type of waveform used. The available electro-acupuncture settings comprised: A 6 channel output, with symmetric biphasic square waveform with negative spike (Mod. Han); Waveform types: continuous, intermittent, ripple, dense-sparse, modulated, Han mode; Intensity (wave amplitude) of each individual output; Pulse rate from 1 to 500Hz; Pulse width from 50 to 400 µs; Programmable countdown timer from 1 to 60 minutes. We configured the treatment with the following parameters:

- Wave type: modulated
- Frequencies: from 23 to 70 Hz.
- Pulse width: 150 microseconds.
- Time: 20 minutes

The selection of the insertion points was fundamental: In the case of postoperative pain treatment, there exist surgical analgesia protocols systematically used by various Chinese hospitals (Nguyen et al, 1984). According to these protocols, based on the type of surgical intervention, and therefore on the location of the surgical lesion and the organ to be treated, it is possible to use analgesic patterns that involve stimulation (through insertion of needles) of points situated on the meridians that pass through the regions affected by the surgical intervention. In particular, for radical mastectomy surgery, the following points are indicated:

- LU1 or LU2, ST14, ST18, VB24 as proximal points (in the vicinity of the surgical site) KI22, KI27 as points of therapeutic action particularly important in intercostal
- neuralgia.
- ST36 as a distal point (distant from the surgical site) with a general effect
- SP6, MC6 because they have a remarkable analgesic action on the thoracic region.

In our case, we replaced these last two points with LI4 because we preferred to employ the general analgesic power intrinsic to this point.

For the homeopathic treatment we administered to her: Arnica montana 15CH pills once and Apis mellifica 15CH pills once.

The morning of the surgery she took 5 pills of Arnica montana 15CH and underwent a second electro acupuncture session with frequencies of 23-70 Hz for 20 minutes, repeated after 30 minutes, on the same points as the previous day (Figure 1-2).

CASE 2

The second patient was a woman 74 years old, weight 75 kg, height 160 cm with a diagnosis of cutaneous fistulization resulting from a previous local radiotherapy to the left breast.

The pathological anamnesis found non-controlled arterial hypertension, insulin-dependent diabetes mellitus (Type 1) with low control, and a dysmetabolic/exotoxic hepatic cirrhosis. In 1990, she underwent a left quadrantectomy with ipsilateral axillary lymphadenectomy followed by local radiotherapy and chemotherapy for ductal breast cancer.

As in the previous case, we made a hepatic evaluation before the surgery. This revealed hepatic cirrhosis with multifactorial aetiology: dysmetabolism (diabetes poorly controlled for years, overweight) and toxic alcohol-induced (previous abuse, now notably reduced) and a possible minor iatrogenic component (post quadrantectomy chemotherapy in 1990). The patient had a minimal hepatic cytolysis in progress with moderate increase in indicators of cholestasis. To further complicate the situation, we observed signs of compromised hepatic function (Child Pugh class A6), portal hypertension with thrombocytopenia and diffused esophageal varices.

We did not find any contraindication to surgery, but underlined a risk of clinical decompensation and a hepatic functional risk in the post-surgical setting (surgical stress, anaesthesiological toxicity...). The chosen surgical procedure for this patient was a complete left simple mastectomy and surgical debridement of the fistulised mammary area. The evening before surgery the patient received Arnica montana 15CH pills once and Apis mellifica 15CH pills once. On the day of surgery, the patient underwent to two sessions of electro-acupuncture with frequencies of 23-70 Hz for 20 minutes, repeated after 30 minutes. The chosen points for this intervention were the following: 1LU - 22 KI - 27 KI - 24 GB - 14 ST - 18 ST - 4 LI - 36 ST. At the same time, the patient took a homeopathic treatment consisting of Arnica montana 15CH 5 pills and Apis mellifica 15CH 5 pills.

Discussion

Both of the patients exhibited the following anaesthesiological behaviour: before going into the surgical area they took another 5 pills of Arnica montana 15CH and 2mg of intravenous midazolam. The latter is a short-acting hypno-inducing drug generally used before and during induction of anaesthesia at a dose of 0.07-0.1 mg/kg. The patients then entered the operating theatre, were placed on the surgical table, and monitored as usual for vital signs: electrocardiogram, heart rate, pulse oximetry, non-invasive measurement of arterial pressure, end-tidal CO₂ (Figure 3-4). Based on the general condition of the patients, we chose to use Sevoflurane, an anaesthesiological inhalator halogenate metabolized by CYP450 and afterward secreted with urine. Thanks to its low solubility in the blood, this drug achieves a rapid increase in alveolar concentration during induction followed by a rapid decrease when the anaesthesia is discontinued. After induction and curarization with rocuronium, we proceeded to insert the chest tube and the surgeon then continued preparation of the surgical area, as required by the protocol. Both of the patients reached a Minimum Alveolar Concentration (MAC) of 1.4%. The haemodynamical and respiratory parameters recorded during the surgical procedures were steady without use of opioids and/or other pain-relieving

drugs. The patients remained in the recovery room for a short period of time (about 45 minutes) to evaluate possible onset of AE, pain or complications in the immediate post-surgical period. After this, since no intra-operative complications or anomalous bleeding were observed, the avoidance of analgesics and the consequent rapid awakening meant the patients did not need to be relocated to a protected area. Instead, they were conducted to their recovery room where they took 5 pills of Arnica montana. The evaluation of the pain on the first day after surgery was very comfortable (Figure 5). The patients were able to drink and eat, and they could get up only a few hours after the end of the surgery. In the evening they took another 5 pills of Arnica montana 15 CH. The following morning the patients reported that they slept well, without pain. The hematic values of the liver function test, conducted as a control, were the same as those recorded before surgery. Both of the patients were discharged on the second day post-surgery.

From our findings, we can conclude that electro-acupuncture together with homeopathy is a useful alternative to the common drugs used in both the intra and post-surgery phases. In these practical case studies, we observed that stimulation with needles was able to achieve remarkable stabilization of the autonomic nervous system. Indeed, there were no haemodynamic or blood pressure changes that would have made it necessary to adjust anaesthesia, use vasopressor drugs, deepen hypnosis or administer an opioid or other pain drug. Unlike commonly reported from scientific literature that shows how CAM can help the reduction of analgesic drugs like opioids in intra- and post-surgical phases, we want to show how these medicines can be totally avoided with significant advantages for patients. Indeed, they can have a less number of complications related to drugs and a less work of the excretory organs. In these case studies, the advantage of the alternative treatment was the great support offered to patients, who were thus able to receive fewer drugs associated to numerous potential comorbidities, with an accordingly lower exposure to risk of adverse events. Above all, this treatment avoided the need for post-surgical recovery in a protected area, thereby reducing the hospitalization time. Last but not least, all these new approaches can deliver conspicuous economic savings for the hospital.

The very promising results observed in this study can open new ways for a better and wider use of integrative medicines in surgical settings. It should be emphasized here that these integrative medicines are not intended to replace the conventional treatments. However, as their name indicates, they can provide a significant and useful support in particular cases, such as patients with allergies or organic disorders for whom the common treatments are contra-indicated or might bring many complications. In this way, the application of traditional Chinese medicine can help improve the common practice of Western medicine.

Conflict of interest

The authors declare that there are no conflicts of interest.



Figure 1 Electro-acupuncture before the surgery

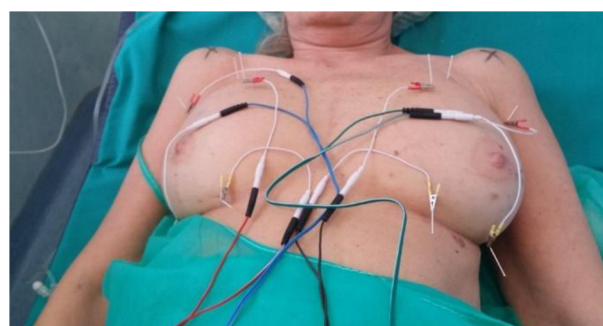


Figure 2 Electro-acupuncture before the surgery



Figure 3 Case 1 - Initial phases of anesthesia

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 2° seduta 03/05/2016 h 12:20 → 12:00
 3° seduta 03/05/2016 h 13:00 → 13:20

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PA	151/129	115/76	122/74	112/70	100/86	119/68	118/64		150/120
PC	56	62	60	60	55	58	58		59
BIS									
Propofol mg/kg/h									
Severoflorano mg/kg		3,2	1,8	1,8	1,6	1,4			
Deflozepam mg/kg									
atropina									
etidrina									
metazocin	3 mg								
Pain Tildina		50 mg							
Acetilcolina		60 mg			10 mg				

Figure 4 Intra surgical data (Case 1)

eta 74
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2 ⁰⁰	120/63	70		0	5 pr. ARNICA II.		
4/5 6	110/60	70		0			
8			99	0			
10	110/60	70		0			
14	113/63	56		0			
18			99	0			
22	110/60	60		0			
5/5 6	116/57	53		0			
8			99	0			
10	110/60	60		0			

Figure 5 Post-surgical pain evaluation (Case 1)

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