

Introduction

Plastic surgery has made incredible technological advances in the past 20 years. There have been improvements in surgical techniques, in the materials used, and in supportive care after surgery. These advances have led to improved results, safer surgeries, and easier recoveries.

Over the same period, there has been a rapidly growing movement to integrate traditional Western medical practice with complementary and alternative therapies from other perspectives. Surveys conducted 10 years ago of cancer patients from 13 countries, including five from the US, revealed that approximately 31% used these therapies. That number is undoubtedly higher today. The notion that we can influence health with our minds is an appealing concept for many Americans. It affirms the power of the individual, a basic value of American culture. Some mind-body interventions have already moved into mainstream medicine, such as meditation, biofeedback, and yoga^{1,2}.

Therapies such as acupuncture, homeopathy and guided imagery have exploded in popularity, especially among cancer patients. Many hospitals and universities have established pre-surgical programs to help patients achieve better surgical results and lessen emotional and psychological stress. Well-established benefits include a reduction in anxiety, discomfort, and pain, reduced length of hospital stay, and improved coping skills. It is possible to establish similar programs in smaller, community settings. I began with patients in my own plastic surgery practice, and have extended the services to the local surgical community.

Definitions and explanations

“Complementary and alternative” refers to a group of regimens and therapies that are different from the methodology and practices taught in Western medical schools. It is important to distinguish “alternative” from “complementary” therapies – alternative therapies are used *instead of* conventional therapy, whereas complementary or adjunctive therapies are used *in addition to* conventional therapy. The same regimen or therapy can be either alternative or complementary, but there is a danger when alternative therapies are promoted or used in place of surgical or medical treatment: their efficacy in treating disease are often unproved and potentially harmful. Complementary therapies that relieve stress and enhance well-being are safer because they do not encourage patients to delay or replace conventional therapy.

As these non-traditional therapies have become more and more popular, the lack of government regulatory authority and the paucity of scientific information derived from good research has become apparent. Many unproved remedies line grocery store and pharmacy shelves. Some contain harmful ingredients, or may interact with prescription medication, or should be discontinued before surgery because of their anticoagulant effects. Others can increase sensitivity to radiation therapy or can alter the effectiveness of chemotherapeutic agents. The quality and accuracy of information that is available to physicians and their patients about these issues varies widely -- many publications, especially those on the internet, that appear to be objective actually are sponsored by commercial enterprises that promote and sell their own products².

These issues have contributed to two recent trends: there has been a tremendous increase in the quantity and quality of research on non-traditional practices, and a similar, albeit smaller increase in regulatory authority. The number of randomized trials of complementary treatments has approximately doubled every five years. Most of the early studies involved small numbers of patients and were of poor methodological quality, but there have been recently published high quality systematic reviews of complementary medicine that provide a reliable basis for making healthcare decisions. The National Institutes of Health, through the National Center for Complementary and Alternative Medicine (NCCAM), supports at least 10 research centers,

mostly based at major universities. NCCAM's mission is to explore complementary and alternative healing practices in the context of rigorous science, to train researchers, and to disseminate authoritative information to the public and professionals. These institutions provide the sort of intellectual and practical infrastructure essential for high quality research, which has been missing in complementary medicine. The increase of high quality research has made it possible for conventional medical bodies to publish guidelines and consensus statements. The National Institutes of Health have issued consensus statements supporting the use of hypnosis for pain related to cancer and the use of acupuncture for pain and nausea. Acupuncture, hypnosis, and relaxation techniques are included in guidelines on the management of pain associated with cancer that have been published by the US National Comprehensive Cancer Network³⁻⁶.

Acupuncture

Acupuncture is the insertion of fine needles into specific points on the body's surface for the purpose of manipulating the flow of energy (Qi) within the body. Pain and illness represents an obstruction in the normal flow of Qi and acupuncture restores free flow. Acupuncture point selection is based on information gathered during the history and physical examination.

Aromatherapy

Aromatherapy uses the concentrated essential oils of various plants for therapeutic purposes. These oils can be administered through massage, inhalation, compresses and baths. While commonly associated with pleasant applications for beauty and general relaxation, essential oils have complex chemical components that, like herbs, have medicinal properties that affect the body in a variety of ways. Understanding these uses requires training in the appropriate selection, preparation and application of these oils as well as knowledge of their toxicities, side effects and interactions with pharmaceutical drugs.

Homeopathy

Most physicians have a difficult time with this form of therapy because it is totally contrary to conventional pharmacological principles. One of the main principles of homeopathy is that if a natural substance can cause symptoms in a healthy person, then in a diluted form it can stimulate self-healing of similar symptoms in a sick person. Homeopathic remedies are made from plant, mineral, and animal extracts and diluted to varying degrees. The process of producing remedies is very precise. Every major homeopathic company or pharmacy around the world follows the same protocol. Homeopathic solutions can be diluted to the extent that literally no molecules of the original substance remain; yet according to homeopathic philosophy the more diluted is a remedy, the greater its potency.

Reflexology

Reflexology is the physical act of applying pressure to the feet and hands with specific techniques. It is based on a system that reflects an image of the entire body onto the feet and hands so that massage there effects a physical change in the corresponding body part. In addition to increasing the flow of energy into the affected area, the practice provides relief from tension, stress and anxiety.

Complementary medicine and surgery: The evidence

The philosophy and methodology underlying many complementary therapies is somewhat difficult to understand from the perspective of traditional western medicine. The same rigorous scientific analysis, however, applies to any therapy, and the same rules of evidence and

study design apply to any research, whether conventional or alternative. Outcome studies are more appropriate for holistic models of health, and although randomized control trials may be technically possible for these therapies, the study design needs to be creative to eliminate bias.

One of the best sources for information on complementary therapies can be found at the Cochran Reviews. The Cochran Collaboration prepare, disseminate and continuously update systematic reviews of randomized clinical trials in all areas of health care. A 'complementary medicine' field has been established. Cochran reviews and protocols can be accessed at http://www.compmed.umm.edu/cochrane_reviews.asp

Acupuncture

Acupuncture enjoys the most credibility of all the complementary medical systems, because a large body of laboratory physiologic data has been accumulated. In the case of anesthesia induced by acupuncture, it is likely that there occurs the stimulation of high-threshold, small-diameter nerves that send signals via the spinal cord to the periaqueductal gray area of the brainstem and the hypothalamus to trigger the release of endogenous opioids. There are measurable changes in plasma and corticospinal fluid levels of endorphins, enkephalins, and stress-related hormones such as ACTH. In fact, a study showed that the effects of acupuncture in one rabbit can be transferred to another rabbit by cerebrospinal fluid transfusions, and other studies have shown that acupuncture analgesia can be reversed with naloxone (an endorphin antagonist) in a dose-dependent manner⁷⁻¹².

There is evidence that acupuncture inhibits several key steps in the inflammatory response (early-phase vascular permeability and leukocyte adherence to vascular endothelium) to a degree equivalent to aspirin and indomethacin. It may be that acupuncture also stimulates the gene expression of neuropeptides¹³⁻¹⁵.

Imaging studies have demonstrated remarkable findings related to acupuncture: a functional MRI study found that a specific acupuncture point in the foot related to vision activated the same region in the occipital lobe that was activated by direct light -- stimulation of nearby sham points did not result in similar activation. Other studies show that specific acupuncture points, but not controls, activate pathways that diminish pain signals and also deactivate multiple areas within the brain that participate in pain processing¹⁶⁻¹⁸.

In contrast to the physiological data generated in studying acupuncture, most studies in complementary therapies are fundamentally clinical. In the field of surgery, good evidence for the benefits of complementary therapies currently exists in the following areas:

Acupuncture/acupressure for post-operative pain

39 patients undergoing oral surgery were randomly assigned to receive either real acupuncture or placebo acupuncture. Patients in the acupuncture group were pain free nearly twice as long as those in the placebo group. When post-operative pain occurred, the acupuncture group required only about two-thirds the amount of medication as the placebo group. Another study had 48 patients who underwent mastectomy and axillary dissection, and who were treated with acupuncture on the fifth and seventh days after surgery. 32 patients with the same operation did not receive acupuncture. The acupuncture group had significantly less pain and greater arm movements. Another study evaluated 40 patients undergoing knee arthroscopy, and who were randomized to receive either acupressure or placebo stimulation after awakening from anesthesia. Pain scores were lower in the acupressure group¹⁹⁻²¹.

The combination of acupuncture and massage decreased pain and depression following cancer surgery in a randomized controlled pilot study of 138 patients²².

Acupuncture/acupressure for post-operative nausea and vomiting

There have been four well-designed studies reported to date. 81 patients undergoing laparoscopic gynecological surgery were randomized in a double-blind study to receive either intra-operative acupuncture or placebo. Acupuncture reduced the incidence of postoperative nausea or vomiting in the hospital from 65% to 35% compared with placebo and after discharge from 69% to 31% compared with placebo. In another study of 220 patients, vomiting was reduced from 39.6% to 26.8% of patients who underwent either gynecological or breast surgery and who were randomly assigned to receive either acupuncture or placebo acupuncture. A third double-blind, randomized study evaluated acupressure in 94 patients who had spinal anesthesia for a Caesarian section: acupressure reduced the incidence of nausea or vomiting from 53% to 36% compared with placebo when administered during the operation and from 66% to 36% after the operation. The same group of researchers reported a double blind, randomized study that compared acupressure to placebo in 104 patients undergoing laparoscopy: acupressure reduced nausea and vomiting from 42% to 19% compared with placebo within the first 24 hours after the procedure²³⁻²⁶.

Reflexology/foot massage

A randomized controlled trial of 100 patients undergoing cardiac surgery studied the effect of foot massage with neroli (orange blossom) oil on the first post-operative day. There was a statistically significant improvement in the respiratory rate and the reduction of anxiety and tension from one hour to several days afterwards²⁷.

Guided imagery

104 patients undergoing open heart surgery were randomized to receive either standard care or preoperative guided imagery with light massage. Pain and tension scores decreased significantly in the complementary group in the first two days after surgery. Similar results were reported in a group undergoing elective colorectal surgery, and additionally there was an decrease in the use of narcotics and the time to the first bowel movement^{28,29}.

What I do

In my practice, I have carefully introduced several complementary medical therapies. They include acupuncture, homeopathy, Thai massage, aromatherapy-guided imagery, reflexology, nutritional supplementation and dietary counseling, and psychotherapy. My goals are threefold: 1) to improve patient comfort, both preoperatively and postoperatively, 2) to decrease postoperative swelling and bruising, and most importantly, 3) to teach patients how to incorporate healthy practices of proper nutrition, stress reduction, and self-awareness. Each patient does not see every practitioner, and some do not feel as though they need to see any – but almost everyone can benefit from some of the complementary therapies.

Although the scientific evidence for these therapies is still growing, their long term use in many parts of the world demonstrates their inherent safety. Evidence based medical research has demonstrated that while scientific evidence is important in clinical judgment, clinical experience and expertise also play a role in patient care. The lack of evidence from randomized clinical trials does not necessarily imply lack of patient benefit.

Currently, I am using the following modalities:

1. Acupuncture: Preoperative acupuncture has been shown to reduce the pain of surgery. It also increases the flow of “energy” into the areas that will be operated upon, and I assume this leads to better wound healing.

2. Aromatherapy-guided imagery: It is well established that a positive mental attitude and the minimization of anxiety before surgery will lead to better outcomes. The practitioner creates a comfortable and relaxing mental state while incorporating the aroma of essential oils. The patient takes home a vial of the aroma that they have chosen and during the preoperative period and afterwards, by smelling the oil, they can be brought back to the sense of calmness and relaxation that they experienced during the session with the practitioner.

3. Homeopathic remedies: Different homeopathic remedies are tailored to the various phases of the surgery, starting from before the surgery and ending several weeks to months afterwards. The remedies used early in the treatment course help to decrease the trauma of the surgery and remedies used after the surgery help to minimize and detoxify the after effects of anesthesia.

4. Thai massage: known as the “lazy man’s yoga”, Thai massage combines massage, acupressure, energy work, yoga, and relaxation. Patients receive a treatment just before surgery to relieve stress and, from an Eastern perspective, to decrease congestion in muscles, joints, the lymphatic system, and connective tissue by opening lines of energy into the affected areas.

5. Nutrition: It is clear that dietary insufficiencies impair wound healing and that a proper diet around the time of surgery can provide the body with the building blocks needed to heal surgical wounds. I give my patients a natural dietary supplement before and after surgery that is rich in anthocyanins and other antioxidants, glucosamine, and essential fatty acids such as Omega 3, 6 and 9, vitamin C. There is an extensive consultation with a nutritionist, which is especially important for those undergoing body contouring procedures (such as abdominoplasty or liposuction), which are often necessary because of poor diet and exercise.

6. Medical aesthetics: Patients undergoing facelift, blepharoplasty, and body contouring procedures are treated before surgery with therapies such as microdermabrasion, ultrasound, steaming, and oxygen treatments to hydrate and prime the skin’s wound healing system. After surgery, additional treatments may include enzyme masks, blue or red light treatment, a body wrap in a heated immersion bed, and massage with serums customized to skin type and healing progress.

7. Well-breast massage: Breast surgery patients undergo breast massage by a practitioner who stimulates the flow of lymph and energy in the breast before and after surgery. My western training makes me consider fluid movements in blood vessels and lymphatic vessels but I understand that the eastern philosophies discuss the same issues in terms of energy flows.

8. Reflexology: Reflexology is the physical act of applying pressure to the feet and hands with specific techniques. It is based on a system that reflects an image of the entire body onto the feet and hands so that massage there effects a physical change in the corresponding body part. My patients undergo a treatment several days after surgery, when they are still in the uncomfortable early post-operative phase. In addition to increasing the flow of energy into the affected area, the practice provides relief from tension, stress and anxiety.

9. Psychotherapy: Plastic surgery can be such a life-changing experience that unexpected emotional, physical, and mental issues often arise that can be difficult to handle. A psychotherapist with extensive experience in the concerns surrounding body image and family stresses is available for consultation before and after surgery.

The most important thing for me in my practice is to incorporate a complementary medical treatment program that is not harmful and is gentle. Because there are so many complementary practitioners available, I often find my role to be that of a quality control expert, trying to separate the practices that are truly beneficial from those that are useless and sometimes even

circumspect. I am encouraged at the increase in randomized, placebo controlled clinical trials designed to test the effectiveness of these modalities. When more data becomes available, I will modify the integrative medicine program accordingly.

The Integrative Medicine program is not for everyone, and not everyone benefits from the program. I caution my patients that the degree to which they can influence the course of their recovery through mental or emotional work is highly variable, and that their efforts may not make a difference. I do not want them to feel guilty or inadequate if their recovery is difficult despite their best efforts. There are patients who ask that I operate on them without any holistic therapies. The large majority of my patients, however, are enthusiastic about the program, and many refer to it as the "Whole Being Plan."

References

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