

PHOTOESSAY

Integrating Ear and Scalp Acupuncture Techniques into the Care of Blast-Injured United States Military Service Members with Limb Loss

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Figure on opposite page: Blast injuries can lead not only to traumatic limb amputation but also to other major injuries (such as fractures, neuropathies, and blood-vessel damage) to the contralateral limb and these conditions create unique pain management challenges while slowing functional recovery. With life-saving care and current amputee rehabilitation technologies, U.S. Service members with multiple limb loss are able to regain higher levels of function than ever before.

Clockwise starting at top left: logo for Armed Forces Amputee Patient Care Program; Joseph Helms, M.D., teaching scalp acupuncture techniques to staff and residents of the Physical Medicine & Rehabilitation Service, Walter Reed Army Medical Center (WRAMC); physicians performing ear acupuncture on an amputee patient; collage from WRAMC showing service members; amputee patient walking with new prosthesis; stimulating (tonifying) scalp acupuncture needles in a U.S. military service member who sustained a blast injury resulting in lower extremity limb loss; and two service members standing near parallel bars.

All photos courtesy of Richard C. Niemtzow, M.D., Ph.D., M.P.H.

Acupuncture has a rich and ancient history as evidenced by the discovery of gold and silver acupuncture needles within the burial tomb of the second century BC Prince of Chungshan. However, within the U.S. Armed Forces, the incorporation of acupuncture into modern military medical practice is a relatively new development.

The effectiveness of acupuncture is well known to many cultures. Its widespread use is primarily credited to the Chinese and to Mao Zedong's legion of "barefoot doctors" (indigenous practitioners) who promulgated the use of acupuncture during the period of the Chinese Cultural Revolution (1949–1970s). Although acupuncture continues to gain popularity in civilian sectors across the globe, use of acupuncture techniques by U.S. military medical personnel is still a relatively nascent process. Given the unique nature of blast and combat-related injuries sustained by American military service members during current operations in

Afghanistan and Iraq, ear and scalp acupuncture techniques have promise in helping to reduce the pain associated with battlefield wounds.

One of the first persons to introduce acupuncture to U.S. military medical personnel was the (then) Army Major (Dr.) Norman Rich, who, along with Army Lieutenant Colonel (Dr.) Francis Dimond, Jr., reported on their experiences at the 2nd Surgical Hospital in Vietnam, in a 1967 edition of *Military Medicine*.¹ A more contemporary reference to the use of acupuncture in a military setting came in 1976 when two members of the Indian Armed Services, Lieutenant Colonel S. Mandal and Brigadier General N.C. Das, reported significant improvement (i.e., improvement greater than 75%–80%) in 98 of 131 patients treated for refractory pain syndromes at the Army Hospital, Delhi Cantt-10.² More recently, Wang Faqiang et al. studied the use of acupuncture in the amelioration of psychologic stress reactions among

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armed police forces in China engaged in antiterrorist military training.³ Acupuncture has also found a place on the front lines of the current conflict in Iraq, where at least one Navy Battalion Surgeon has effectively applied acupuncture techniques to treat a variety of conditions, from combat stress to injuries associated with exploding improvised explosive devices (IEDs).⁴

The U.S. Air Force (USAF) has been instrumental in educating a small number of USAF military physicians in acupuncture as an adjunct to Western medical practice. Over the last few years, acupuncture has been used on a daily basis for musculoskeletal pain and other conditions at U.S. military medical treatment facilities such as Andrews Air Force Base, MD, Walter Reed Army Medical Center (WRAMC), Washington, DC, Keesler Air Force Base, the Pentagon, Washington, DC, Luke Air Force Base, Scott Air Force Base, Travis Air Force Base, and at the Naval Medical Center San Diego, CA. During the past year, acupuncture techniques taught by Colonel (Dr.) Richard Niemtzw (first author of this Photoessay), USAF and Joseph Helms, M.D., a renowned civilian medical acupuncturist, have been added to the pain-management arsenal available to injured Service members returning home from the current conflicts in both Afghanistan and Iraq. Many of these Service members have experienced a variety of blast-related injuries including limb loss, soft-tissue damage, long-bone fractures, and peripheral neuropathies, which result in challenging pain issues for patients and staff members alike. New limb amputees with "dirty" wounds from, for instance, IEDs, commonly must endure frequent painful serial wound washouts and debridements, complex dressing changes, and placement of external fixators and related instrumentation. In addition, there are issues related to associated phantom and/or residual limb pain. Intravenous analgesics, nerve blocks, and oral medications are among other approaches to pain relief that may be started in the theater of battle. These approaches adjusted and fine-tuned after medical evacuation back to the United States.

In addition to the Western spectrum of pain-management techniques, our use of auricular acupuncture treatment points remote from the painful site of traumatized tissues has special appeal for our patients with healing wounds. In most cases, French *Aiguille Semi-Permanente* (ASP; Sed Atelec, Cheminols Muriens, Irigey, France) needles were inserted bilaterally and sequentially into the Cingulate Gyrus, Point Zero, Shen Men, Omega 2, and the Thalamic point, using the techniques previously described by Niemtzw.⁵ Patients often reported significant improvement in pain that lasted hours or days. Effective analgesia has also been achieved using scalp acupuncture techniques, an approach demonstrated by Helms at WRAMC. Both ear and scalp techniques may be performed at the patient's bedside or in the outpatient clinic. These techniques are useful together or separately and are techniques are mostly offered when Western pain-management techniques have not sufficiently resolved

patients' discomfort so that sleep and participation in rehabilitation programs are compromised significantly. We have found that some service members associated needles with pain and thus were quite hesitant to try anything that was perceived as adding more discomfort. In these situations, the acupuncture approach is discussed and the treatment may be deferred pending a patient's further consideration. Ear and scalp acupuncture approaches are combined easily with the protocols and procedures of conventional rehabilitation and can be comprehended and applied by physicians without prior acupuncture training or experience. It is clear that focused research is warranted to confirm our anecdotal clinical observations with this young-adult, otherwise-healthy, blast-injured military population.

During February 2006, the WRAMC conducted a weekend acupuncture course for physicians who routinely provide care for injured Service members with limb loss. This course was given as part of the U.S. Armed Forces Amputee Patient Care Program. The course was coordinated by Col. Jeff Gambel, M.D., Medical Corps, U.S. Army and Chief, WRAMC Amputee Clinic. The scalp acupuncture portion of the course was taught by Dr. Helms and Dr. Jason Hao, O.M.D., while the ear acupuncture portion was led by Colonel (Dr.) Niemtzw and Colonel (Dr.) Stephen Burns, O.M.D., both from the USAF. Particular attention was paid to the synergy produced by combining the two techniques. The willingness to offer Service members with limb loss the best modalities available from conventional allopathic, osteopathic, and alternative medicine was unique to this course. After all, many of these mostly young adults are quite motivated and able to return to very high levels of functioning with the proper support. Some injured Service members choose to return to active duty and are encouraged to do so.

While the rich and vibrant history of acupuncture continues to develop, members of the U.S. military medical profession seek new applications of acupuncture as an instrument of healing. Complementary and alternative medicine (CAM) truly represents an approach that can be integrated into current medical practice to relieve the pain of injured Service members. CAM may influence Western medical practice as we pursue a better understanding of mechanisms and clinical evidence. The real test of these techniques in well-designed, blinded, randomized clinical trials with this unique population is yet to come. For the moment, our clinical observations, which have similarly guided countless other physicians before us, are encouraging with regard to the effectiveness of ear and scalp acupuncture. Our combat heroes with complex battlefield injuries deserve no less.

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