

Battlefield Acupuncture in the U.S. Military: A Pain-Reduction Model for NATO

Richard C. Niemtow, MD, PhD, MPH, COL (Ret) USAF, MC, FS,^{1,*} J.-Louis Belard, MD, PhD,
COL (Ret) French Medical Corps,² and Raphael Nogier, MD³

ABSTRACT

Background: Acupuncture originated in China more than 5000 years ago. Battlefield Acupuncture (BFA), developed by Niemtow, consists of treating 5 points on each ear, using semi-permanent needles to reduce pain in a few minutes. Easily taught to North Atlantic Treaty Organization (NATO) troops, this methodology can be explained in 3 hours.

Objective: This article describes how the BFA technique may be taught to military medical personnel in a few hours and may be used in a NATO medical treatment facility or battlefield environment without the necessity for patients' disrobing.

Methods: Five tiny, sterile 2-mm needles are inserted into specific points of each ear. The points are: (1) Cingulate Gyrus; (2) Thalamus; (3) Omega 2; (4) Shen Men; and (5) Point Zero. The needles may remain in the ears for up to 3 days.

Conclusions: BFA produces rapid pain relief in a few minutes with almost no side-effects. This is an ideal technique to use when pain has not responded to narcotics or when habit-forming drugs are not desired, especially during critical military missions.

Key Words: Acupuncture, Battlefield Acupuncture, Pain, US Military, NATO Acupuncture Course, Auriculotherapy

INTRODUCTION

ACUPUNCTURE is a psychobiologic therapeutic modality supplementing existing care in the interrelated psychologic and physical areas of trauma. Developed by the Chinese more than 5000 years ago, acupuncture still forms the basis of medical care in China and is integrated with Western medicine in many hospitals. The Chinese invented acupuncture, and the French invented auriculotherapy.

Classically, acupuncture is described as needling specific points on an acupuncture meridian that influences the movements of Qi and have specific physiological manifestations. This movement of Qi flows in accordance to the concept of Yin and Yang; as Yang increases, so Yin decreases, and the converse is true. When movement of the Qi is blocked, illness is said to manifest.¹ Despite many attempts, modern biomedical science has been unable to prove the existence of meridians, acupuncture points, or energy Qi.

¹USAF Acupuncture and Integrative Medicine Center, Joint Base Andrews, MD.

²Former Chair, NATO Group on Integrative Medicine, Contractor Henry Jackson Foundation Research Advisor, Defense & Veterans Brain Injury Center, Rockville, MD.

³President of Groupe Lyonnais d'Études Médicales, Lyon, France.

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Although acupuncture points are reported to be characterized by low electrical resistance points, the literature presents various views. Histologic analysis of the acupuncture point reveals an area containing conjunctive tissues supporting miniscule structures, nerve fibers, lymphatic and capillary vessels, and arterioles.² The physiologic significance of this complex is not clearly understood. Body acupuncture points are said to be permanently electrically active as opposed to auriculopoints that appear to be electrically active when disease is present and that disappear when pathology is absent. No histologic analyses of ear acupuncture points have been found in the literature by the current authors.

Despite the inability to prove the existence of acupuncture meridians and points, acupuncture is used around the world in either a primary or adjunctive mode to treat pain and other diseases. Acupuncture is nonetheless recognized as a low-risk, low-cost modality.¹

A medical technique developed and promoted by Paul Nogier, MD, in the 1950s enables treatment of pain or functional disorders by using only ear points. This technique, is known as auriculotherapy or ear acupuncture. A very precise somatotopy exists on the ear, and each organ of the body has a correspondence on the auricle.³⁻⁵

Acupuncture utilization in the military is not a new concept. During the 5000-plus years of the history of acupuncture in China, this modality has been well-embedded into that country's military and civilian medical cultures. As recently as the Vietnam conflict when Hanoi was cut off from Western medical supplies, military and civilian hospitals resorted to acupuncture as a mainstream medicine. Captured North Vietnamese military medics carried a small number of acupuncture needles and moxa as their only medical equipment. Moxa is a plant that, when carefully ignited on an inserted acupuncture needle, serves as a stimulant and may have apparent healing properties as a result of absorbed vapors through the skin.

In the 1980s, acupuncture was acknowledged but not widespread in the U.S. Armed Forces. History notes that several military physicians endeavored to practice acupuncture but it never achieved widespread popularity or acceptance. It was not until the mid-1990s that acupuncture truly gained a solid foothold in military medical practice.

The fact that acupuncture is steadily achieving an increasingly prominent role in the U.S. Military is directly attributed to the tireless efforts and innovative approaches of the first author, a radiation oncologist, COL (Ret) Richard C. Niemtow, MD, PhD, MPH. He started the first military acupuncture clinic at the Walson Air Force Hospital in Fort Dix, NJ, in 1995. He transferred later to Edwards Air Force Base, CA, and started another acupuncture clinic. The Assistant Secretary of Defense, Sue Bailey, DO, asked Dr. Niemtow if there was any role for acupuncture in the treatment of breast cancer. In response, he presented at a Breast Cancer Conference at the National Naval Medical Center (NNMC) in San Diego, a lecture entitled, "The Role

of Acupuncture in Breast Cancer: Magic or Medicine?"⁶ The presentation was so well-received that he was invited to become the first full time medical acupuncturist in the history of the United States Armed Forces. He was transferred as a guest of the United States Navy at NNMC from August 1999 to August 2002.⁷ During the summer of 2001, Dr. Niemtow designed the well-known Battlefield Acupuncture (BFA) for acute and chronic pain relief (Fig. 1).⁸

Using the BFA technique, Dr. Niemtow inserted tiny sterilized <2-mm gold plated acupuncture semi-permanent (ASP) needles developed by Paul Nogier, MD over 30 years ago (Aiguille d' Acupuncture Semi-Permanente, Sedatelec, Chemin des Muriers, Irigny, France) into specific points in the ear in a well-defined unique sequence of points as follows: (1) Cingulate Gyrus; (2) Thalamus; (3) Omega 2; (4) Shen Men; and (5) Point Zero. Paul Nogier, MD, described all of these points except Shen Men, which was described by the Chinese).³⁻⁵ This technique achieves pain attenuation to zero or near zero in many circumstances and produces remissions of hours, days, weeks, or months depending on each patient's pathology.⁸

The sterilized needles, which may be carried in the combat pocket, are easy to dispose of and may be inserted into a patient's outer ear in any environment—land, sea, or air—in <5 minutes. The technique may be taught in a few hours to non-acupuncturists. Over the past decade of intense use by hundreds of health care providers, few if any side-effects or ear infections have been reported. This technique is fast, portable, and rapidly deployable in any environment, and does not require patients to undress.⁸

The ear is considered to be a microsystem that reflects the entire body, which is represented on the outer portion of the ear (auricle). Traditionally, pain treated by auriculotherapy

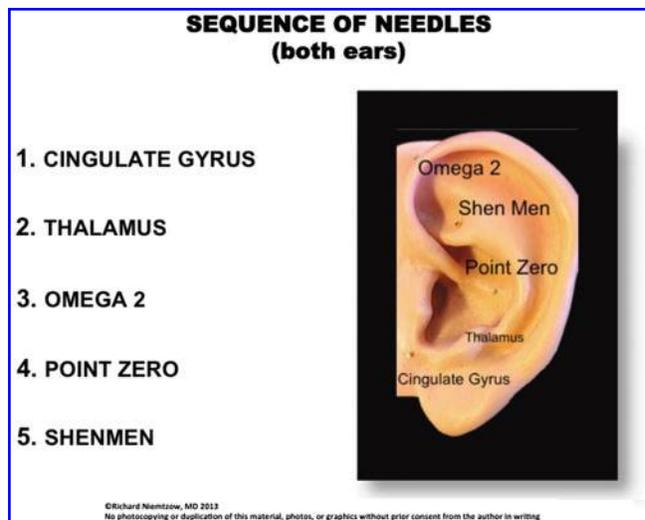


FIG. 1. Sequence of Needles (Battlefield Acupuncture) for both ears. © Richard Niemtow, MD, 2013. No photocopying or duplication of this material, photo, or graphics without prior consent of the author in writing.

utilizes known anatomical areas in the ear corresponding to body morphology.⁹ For example, if a patient experiences acute or chronic back pain, needles are placed in the ear in known points that correspond to the spine. Dr. Niemtzwow has used both electrical and laser stimulation on the BFA points with similar results. Laser and microcurrent electrical stimulations are appropriate for patients who fear needles (such as children).

MECHANISM OF ACTION

Theoretically, when placed in the BFA points, the needles interfere with processing of pain in the central nervous system at the hypothalamus, thalamus, cingulate gyrus, cerebral cortex, and other structures.¹⁰ Functional magnetic resonance imaging research studies from Zang-Hee Cho, PhD, and Dr. Niemtzwow suggest that this is the case, and it is probable that the rapid resolution of pain may be the result of direct communication from the ear to the brain.¹¹⁻¹³ The exact mechanism of action is unknown.

TECHNIQUE

ASP gold needles are semi-permanent needles that can remain in the ear acupoints for up to 3-4 days or longer before being pushed out to the skin surface by the previous flattened epidermis.

The clinician, after obtaining proper history and performing a physical evaluation of the patient's complaint of pain, initiates the BFA technique by placing the patient in a sitting position and needling, sequentially, the Cingulate Gyrus, Thalamus, Omega 2, Point Zero, and Shen Men points (see Fig. 1). For example, a needle would be inserted into the Cingulate Gyrus point of the left ear, and then another needle would be inserted into the Cingulate Gyrus point of the right ear. After each needle placement, the patient would walk for 1-2 minutes. One ear would be considered dominant when the patient's pain drops 2 units on a visual analogue scale (VAS) used for assessing for subjective pain. If a dominant ear is determined, the ASP needles would be continued on that ear to achieve a pain score of <1 (on the VAS). If that is not achieved, BFA would be continued on the nondominant ear until a total of 10 needles, 5 on each ear have been placed.^{8,12}

Note that the Thalamus and Omega 2 points are classically located in the hidden areas of the ear. However, placing the needles in the external and visible areas of the ears, appears to be easier and more effective.⁸

The patient is allowed to ambulate for about 2 minutes to determine if pain attenuation has occurred. If no pain attenuation has occurred, an ASP needle is inserted into the Cingulate Gyrus point of the opposite ear, and the patient ambulates to determine the new pain level.

If pain attenuation >0 has been achieved via the Cingulate Gyrus point, another ASP needle is placed in the Thalamus point in the ear that has produced the most pain attenuation. The patient ambulates again, and the new pain level is determined.

ASP needles are placed in a similar sequential manner into the Omega 2, Shen Men, and Point Zero points of whichever ear produces pain attenuation. After the dominant ear has received ASP needles into all the BFA points, the patient's pain level is evaluated. If the pain level is 0-1/10, the therapeutic goal has been achieved. When the patient's pain level remains above 0, the contralateral ear is needed in a similar manner.

The maximum number of ASP needles used in each ear is 5.⁸

AIR FORCE ACUPUNCTURE AND ALTERNATIVE MEDICINE CENTER

The U.S. Air Force established the United States Air Force Acupuncture and Alternative Medicine Center (AFAC) at Joint Base Andrews as the only full-time acupuncture center in the Department of Defense (DoD). The purpose of the Center is to treat referred active duty and retired military personnel and their dependents, and to teach acupuncture, principally BFA, to physicians and other health care providers in the Armed Forces. Certified BFA and BFA "Train the Trainer" courses have been established. The BFA course can be accomplished in 1 morning or afternoon, including practice with patients. The BFA Train the Trainer course requires that each candidate be a physician medical acupuncturist who is actively practicing acupuncture in the Armed Forces. This course is completed in either a single morning or afternoon. The candidate must teach one BFA course under supervision of the AFAC to achieve certification.

A database is kept of students who have completed both courses. Estimated costs of teaching are only \$50 per student, not including transportation, lodging, and per diem expenses if required. AFAC personnel will travel to other locations if it appears to be cost-effective to teach on site instead of requiring students to travel to the center. To date, ~500 students have been trained in the DoD. The number of available certified students varies, with physicians leaving the service after completing their military obligations and/or entering retirement.

DISCUSSION

Military use of the BFA technique centers on times when a narcotic cannot be used because the resultant lethargy would affect a critical mission negatively. As the ears are almost always accessible, this method is very convenient

and simple to practice without undressing patients, especially during combat situations. A patient should experience a reduced pain period of minutes, hours, days, weeks, or months, depending on the pathology treated. BFA may be repeated many times. The clinician should observe the patient's ear for irritation or infection. The current authors have not noted any infections in the ears of patients. In some cases, a patient will experience healing and will have a long lasting pain-free period. Other patients who are usually older and have more complicated pathologies will not experience complete healing. The needles can take the place of pain medication. Dr. Niemtzwow has found that treating a patient with ASP needles biweekly is sufficient in most cases.

The DoD and Veterans Affairs (VA), Joint Incentive Fund (JIF) recently allocated the DoD-VA \$5.4 million for BFA. This proposal obtained funding to: (1) establish a uniform training program for BFA across the DoD and VA; (2) train a small cadre of physicians in the DoD and VA in medical acupuncture; and (3) initially establish the availability of acupuncture as an option at all levels of care throughout the DoD and VA. This funding would also enable establishment of uniform credentialing standards and quality-assurance processes to facilitate integration of acupuncture safely into the mainstream of military and veterans' care.¹⁴

CONCLUSIONS

BFA is a recommended technique to be promoted throughout the NATO medical system. This technique has been received very well and is in great demand by U.S. Military health care providers and Special Forces.

RECOMMENDATIONS

Military Services members experience pain. This is independent of the Military being at war or during peacetime. For centuries, opioids have been used to treat pain conditions; this is a form of pain management that is widely continued today. Opioids' side-effects may be a crippling factor with respect to Military readiness. Although, opioids have some benefit for acute pain management, habitual use of these drugs for chronic pain management has no benefit. Rather, there are serious negative effects, which include degradation of military performance. However, there are new programs investigating new treatments and modalities for pain management.

One such project is the ongoing initiative of the U.S. Armed Forces and VA. It is a JIF program called "Acupuncture Training Across Clinical Settings" (ATACS). The goal of this program is to develop, pilot, evaluate, and implement a tiered acupuncture education and training program

for health care providers within the DoD and VA systems, to include BFA. Despite the paucity of clinical trials in BFA use in military populations, there is evidence that BFA may have significant benefits for treating acute and chronic pain. The preliminary data of the ATACS project combined with other studies using BFA in military populations suggests:

- (1) BFA may help reduce and possibly replace opioid usage.
- (2) U.S. troops in Afghanistan and Iraq who had received BFA regarded it more favorably than receiving habit-forming drugs.
- (3) Physicians demand to be educated in and practice BFA.
- (4) BFA is a safe, effective treatment option that can produce rapid pain attenuation and return to duty without untoward effects.
- (5) Patients request BFA over narcotics.
- (6) BFA has been shown to have a favorable effect on operational readiness.
- (7) Long-term BFA may offer significant cost savings over narcotics.

BFA can easily be used as a primary treatment or as an adjunct to various pain modalities now practiced in NATO medical communities. It is therefore recommended that a BFA program similar to the successful program in the U.S. DoD and VA health systems be implemented as a demonstration project at several NATO bases. The project would include education of health care providers in BFA technique and delivery as well as the development of a cadre of local or regional BFA trainers to ensure sustainability.

AUTHOR DISCLOSURE STATEMENT

COL Richard Niemtzwow, MC (Ret, MD, PhD), is a retired Colonel from the United States Air Force. He is currently employee with the United States Department of Defense. He was appointed to the NATO panel HFM-195 ("Integrative Medicine Interventions for Military Personnel") as a technical team member. Resources from the Department of the United States Air Force supported the travel expenses to the first five team meetings. The sixth meeting was paid through personal resources. No competing financial conflicts exist. **Jean-Louis Belard, MD**, is a retired Colonel from the French Army. He was appointed to the NATO panel HFM-195 ("Integrative Medicine Interventions for Military Personnel") as the first Chairman and as a technical team member from March 2010 through September 2013. Resources from the United States Department of Army supported the travel expenses to the meetings attended. No competing financial conflicts exist. **Raphael Nogier, MD**, co-author, is a medical doctor in Lyon, France, specialist in auriculotherapy. The co-author did not receive any funding by governmental or non-governmental organizations to write this

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Address correspondence to:
 Richard C. Niemtzw, MD, PhD, MPH,
 COL (Ret) USAF, MC, FS
 United States Air Force Acupuncture
 and Integrative Medicine Center
 779th Medical Group
 1050 West Perimeter Road
 Joint Base Andrews, MD 20762
 E-mail: n5evmd@gmail.com