Auriculotherapy

Short Term Favorable Changes of the Clinical Picture of a Patient in Minimally Conscious State (M.C.S.) after Ear Acupuncture (Auriculoacupuncture) treatments:

A Case Report

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2013

ABSTRACT:

The purpose of this case study is to inform specialist that there are different approaches to Physical Therapy treatment intervention. It introduces a case study report of a 33 years old male as a patient in Minimally Conscious State for 11 years, who showed improvements in his clinical picture after 7 treatments of ear acupuncture. The particular treatment of ear acupuncture was administered by a Physical Therapist trained in “Dr.G. Bazzoni” method of Auriculoacupuncture.

Key Words: Brain Injuries , Minimally Conscious State (M.C.S), Case Report , Physical Therapy , Ear Acupuncture , Auriculoacupuncture , Dr. G. Bazzoni approach.
INTRODUCTION

Acquired severe brain injuries are considered devastating, twenty to forty percent of persons with such injuries do not survive. The rest of them belong to a spectrum with a wide range of disturbances of consciousness. Consciousness refers to the awareness of self and the environment. The diagnosis given these people depends on whether their eyes are open or closed certain periods of the time, the state of complete unconsciousness with no eye opening is called Coma. The state of complete unconsciousness with some eye opening and periods of wakefulness and sleep is called the Vegetative State (1). Minimally state of consciousness (M.C.S.) is defined as "a condition of severely altered consciousness. In which minimal but definite evidence of self or environmental awareness is demonstrated (2).

It includes cognitive impairments and severe motor and sensory deficits. Treatments options are very limited, they include pharmacologic and nonpharmacologic. Rehabilitation is offered in an attempt to minimize these impairments (3). Physical therapy goals include contracture prevention, minimization of spasticity, strength, balance, posture and generally deterioration prevention. Physical therapist can use any number of intervention strategies designed to improve cardiopulmonary, integumentary, musculoskeletal and neurologic function. One of the methods a physical therapist can practice is auriculoacupuncture (ear acupuncture).
Ear acupuncture is a distinct form of acupuncture, according to the French school every auricular acupuncture point corresponds to certain anatomical structure, according to the Chinese school there are acupuncture points which correspond to function and symptoms (4).

This particular concept of Ear Acupuncture (Dr. G.Bazzoni approach) is based on the assumption that the auricle is like a touch screen, or a monitor which depicts all the information about the injury of the body, the active points correspond to certain tissue and functions, by stimulating those points on the auricle the signal is transmitted to the Central Nervous System (the main computer) in order to initiate the appropriate function i.e. increase circulation, decrease spasticity, decrease inflammation, etc, by releasing neurotransmitters and hormones. The afferent stimulation to the C.N.S is via three nerves: a). branches of the upper cervical roots (C 1, 2, 3). b). the (IV) trigeminal and c). the (X) vagus cranial nerve. Points are found either by palpation (increased tenderness) and or by electrical detection (5).

Experimental research on ear acupuncture suggests favorable results in withdrawal syndromes, activation of hypothalamic satiety centers, inhibition of neurogenic inflammation pain modulation, anxiolytic and muscle relaxant effect (6-10).

**Case Description.**

The patient is a 33 year old right handed male who at age 21 suffered a severe closed head injury in a motor vehicle accident. He remained in a coma.
for thirty days followed to a Vegetative State for another month and subsequently to M.C.S. The diagnosis was also confirmed by PET scan and fMRI two years ago, structural MRI showed widespread “post – traumatic diffuse axonopathy and significant atrophy at the cerebellar-vermis and the pontine-midbrain level”. He remained nonverbal, incontinent and totally depended for all personal care. He responded to visual and sound stimuli via eye contact and with movement of his right thumb in extension occasionally. At home he received Physical Therapy treatments including ROM, balance training, and upstanding vertically on a special frame three times a week, his parents also performed ROM exercises two times daily.

Ear acupuncture was discussed with his parents as an adjunct treatment to observe if the patient responds with any favorable changes. The patient was treated in seven home visits as this number of treatments was assumed to be close to the minimum number which any neuroplasticity changes would need to take place, once every other week with semi permanent needles, seven (Pyonex 0.6) at the following points: 1. Shenmen, 2. Autonomic nervous system, 3. Liver, 4. Lung two, 5. Jerome, 6. Master Cerebral, 7. Master Oscillation point or Reticular system point (photo 1). All points were detected electrically by the “pointoselect” digital device since all of them were functional points. They were selected because of their function which has been observed respectively on 1. General homeostatic mechanism, 2. Blood circulation, 3. Decrease in spasticity, 4. Triggering the cholinergic antiinflammatory pathway, 5. Skeletal muscle relaxation, 6. Decrease in
central sensitization, 7. Bilateral activation of nuclei in Reticular formation and improvements on attention span. At the medial surface of the auricle the patient responded with flexion withdrawal movements of his extremities upon palpation and they were excluded for treatment since his parents worried that the stimulation would be painfull. The left ear was chosen to start first, contralateral to his dominant side, two days before the scheduled treatment the needles were taken off and the contralateral ear was treated, the previous days his parents were instructed to stimulate the needles three times daily by pressing each needle ten times.

After the second treatment the parents reported that the patient had significant less drooping saliva out of his mouth and better swallowing, after the fourth treatment they noticed significant reduction of spasticity also after the last treatment they reported that the patient had a definitely “healthier” more vigilant eyesight and better head posture with less extensor tone of the trunk while sitting on the wheelchair.

**Discussion**

This particular method of ear acupuncture that was applied is based on the concept developed by Dr. G. Bazzoni. He educates Physicians and Physical therapist treating the entire body. According to his approach, the C.N.S. receives all the informations from the periphery then it depicts these informations to the auricle with ear acupuncture points which can be detected by palpation or by electrical resistance, thus by stimulating the selected
acupoints with acupuncture needles or electrical current or semi permanent
needles the C.N.S. could alter its affected function and react therapeutically.
This is the first case reporting such treatment and effects in patients
diagnosed at M.C.S. The mechanism of these favorable changes in spasticity,
swallowing, awareness, muscular tone, visual contact is unknown. Activation
of the Parasympathetic Nervous System via the vagus nerve noninvasively
has shown multiple therapeutic changes in CNS disorders, examples include
Vagus Nerve Stimulation (V.N.S.) for epilepsy, depression and anxiety.
V.N.S. may suppress inflammation and excitotoxicity through the release of
Norepinephrine and Serotonin respectively (11, 12, 13). Also V.N.S. through
the activation of the cholinergic antiinflammatoty pathway can suppress brain
parenchyma inflammation and peripheral inflammation leading to
neuroprotection. Vagus Nerve Stimulation causes the release of
Norepinephrine from locus cerulius as early as one hour after stimulation,
Serotonin was released from dorsal raphe nucleus at day 14th of stimulation.
The dorsal raphe nucleus projects serotoninergic neurons to many parts of
the brain including the cerebral cortex (12).

Conclusions

Given the relative young age of victims and the relative poor long term
prognosis, auriculoacupuncture may offer a little hope for patient and their
family. More work is needed to include additional ear acupuncture points, electroacupuncture, bilateral stimulation and more treatments until there is a plateau of improvement and to reassess the effectiveness short and long term.
References
