

Photomedicine : The Breakthrough Modality for Brain Trauma: Dystonia a case study.

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Abstract:

Objective:

Lou Banas, Photo-medicine Therapist has been doing pioneering work with brain injury and Neurodegenerative disease for 5 years. He was introduced to Terry Jo Brooks-Devlin Psychiatric Nurse Practitioner, whose 17-year-old daughter developed Dystonia, approximately six months after experiencing sudden cardiac arrest. It was decided that “Light” therapy would be administered as a last resort as all other interventions including medication, Botox injections, and physical therapy treatments were of minimal help for the pain and limited movement she suffers.

Method:

Patient was illuminated in the prefrontal cortex in four areas and Circle of Willis (one area) for duration of two and one-half minutes every 48 hours for 5-6 treatments. We utilized the Theralase multi-probe (905 nm. /660 nm.) at 60 milliwatts. [1]

Conclusion:

Patient showed significant improvement starting with second treatment. Precluding symptoms included: neuropathic pain, muscle spasticity, brain “fog”, and anxiety. Post treatment improvements were: no pain, increased movement and almost no spasticity, no brain fog, minimal anxiety. The subject ceased taking benzodiazepines, started driving, and doing more

physical and mental activities. The need to avoid stimulating events like shopping at the mall or rock concert was no longer an issue. Clinical studies should be initiated. This modality could play a key role in reducing the significant health care costs projected for treating neurodegenerative disease.

1. Introduction

Dr. Richard M. Restak published **The Brain, The Last Frontier** due to the fact it is the one organ we still want to learn more about and how to treat. [2] It is well documented that many scientific discoveries are the result of a serendipitous event (Isaac Newton?) We believe that in 2009, we were the witness' and the catalyst for such a discovery. The opportunity to use this new technology, Low Level Laser Therapy (LLLT) now referred often referred to as Photo-Medicine (PM) was in Dr. William Stephan's primary care practice. Dr. Stephan, a well respected, primary care physician, places heavy emphasis on preventive and alternative medicine. He has been using PM for over 11 years and as a primary care physician sees all types of injury. On several occasions, I was able to assist him with the treatment of patients. Although we had a great success treating many different types of injuries, the most remarkable treatments were for migraine, concussion and dementia. Patients who had suffered a concussion or migraine had significant and sometimes total healing with these treatments. We knew this was remarkable but we assumed we were only treating superficially, not knowing **the skull istranslucent.**[3]

The following case regarding the healing of a young woman with Dystonia is unique to this therapist. This case further advances my argument that at last a safe, non-invasive treatment is now available for many brain disorders.

2. Case Study

I am a psychiatric nurse practitioner and I am presenting the following case study of my daughter who suffered cardiac arrest.

I found my daughter, age 17, in the shower. She was unresponsive, not breathing and no pulse. I initiated CPR and my son called 911. She was defibrillated on the scene and taken to the hospital. She was in a coma, hypothermia treatment was implemented and she awoke 5 days later. She slowly showed signs of neurological recovery. It was found she has a rare syndrome called Brugada and my son was assessed and found to have this syndrome as well, which ultimately manifested by sudden cardiac arrest. They both now have internal cardiac defibrillators. Christine began a course of physical, speech, and neurological rehabilitation. Approximately 6 months after the arrest, she started to have balance problems and increasingly severe pain in her upper left bicep. The pain became so severe and was affecting her face, speech, neck, left arm, leg, and foot. Her physical therapist and I decided this was more neurological in nature and she was referred to neuro-rehab physical therapist. At this time, her neurologist began treating her with Botox injections for muscle spasticity and because of the extent of her damage, referred her to a specialist in this field. She saw four different neurologists before she started treatment for dystonia; most characteristic of acquired dopamine responsive dystonia. She also, at my suggestion, started taking carbidopa-levodopa, which is used for Parkinson's disease, but since her anoxic encephalopathy was to the basal ganglia area, we thought it was worth a try. There was slight improvement in pain with the two treatments, of Botox but she continued to suffer greatly. About two months later, she started taking Vyvanse, after a trial of Adderall, which seemed to help her with focus and concentration. She was also taking a benzodiazepine to help with anxiety and muscle relief. We realized more of the extent

of her disability when she failed all but one of her college courses. At this point, we were fearful that nothing else could be done to improve her condition. She was unable to drive, work, bike, walk the dogs, or do most of any other activities that she enjoys. She had difficulty putting on makeup, doing her hair, and walking. She came to me one day and asked about having her arm amputated. She had done some research and said she would rather not have an arm than have to deal with this type of pain and disability.

I met Mr. Banas when I went to Dr. Stephen's office for treatment of a knee injury. Mr. Banas, a laser therapist, spoke of the pioneering work he was doing with brain injury. We made an appointment to see him and one year and 7 months from the date of her arrest, she received her first laser treatment. After about the third treatment she started to feel that her arm muscle was looser and she was able to move it more. Soon she noticed increased movement and less pain. She started to notice the brain fog had lifted and she was starting to do more activities. She was unable to drive prior to treatments, as she could not manage the physical aspect and the concentration involved. After about 5 treatments, she was able to drive and signed up for her license. She reports no pain at all now. Movement in her arm has improved more than 90%. She is biking, driving, and moving her arm with almost no limitations. There is no more consideration for amputation, and she is considering discontinuing the Botox as this has only hindered her movement at this point.

3. Discussion

Dystonia is a very complex, highly variable neurological movement disorder characterized by involuntary muscle contractions or spasms. It is a disorder that knows no age, ethnic, religious,

sexual, or socioeconomic barriers – it can affect young children to older adults of all races, creeds, ethnicities, or social status.

Dystonia results from abnormal functioning of the basal ganglia, a deep part of the brain, which helps control coordination of voluntary movement and inhibition of involuntary movements. This region of the brain controls the speed and fluidity of movement and prevents unwanted movements. Because this important basal ganglia function is altered in Dystonia patients, they experience simultaneous contractions of opposing muscle groups, resulting in abnormal postures, twisting or repetitive movements. These can affect any part of the body, including the hands, feet, arms, legs, trunk, neck, face, eyes and vocal cords. Symptoms may or not be obvious to the casual or even a trained observer. Depending on the affected body part, Dystonia can seriously impact daily functions. For example, if neck muscles are affected, a patient may have difficulty with balance, posture, chewing, or swallowing. In some cases, Dystonia may also be quite painful. Though not life-threatening, the involuntary nature of the disorder may be embarrassing, causing emotional distress or depression in some individuals. (4)

An estimated 300,000 people in the United States have been diagnosed with Dystonia or are waiting proper diagnosis, making it the third most common movement disorder behind essential tremor and Parkinson's disease. The American Dystonia Society has an on-line Dystonia networking site to provide peer support at [ADS Community Center](#) that can help address some of these issues, but patients may need to be treated separately for mental health issues caused by the challenges of coping with this disorder. (5)

4. Conclusion

This is the third manuscript submitted for publication by this author. At this point in time over 100 patients have been treated for various brain disorders including Alzheimer's (early and late-onset), vascular dementia, PTSD and TBI. Currently, there is an ongoing clinical trial at Boston's Children's Hospital for concussion. A pilot study is being planned at the VA Medical Center in Buffalo, New York. The study will conduct three different groups to include PTSD, TBI, and TBI /PTSD. This non-invasive, painless treatment, which results in significant improvement with 5, or 6 - 15 minute treatments over a two-week period is a true breakthrough in medicine. During the pre-pilot discussion in Buffalo, the psychiatrist in charge of overseeing the care of the TBI/PTSD patients stated, "... finally something may be available to help my patients". Full clinical trials need to be conducted in all areas.

5. References

1. Theralase Inc., Toronto, Canada.
2. Richard M. Restak M.D., *The Brain, The Last Frontier*, Mass Market Paperbooks, January 1, 1980.
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4. Albanese A, Bhatia K, Bressman SB, et al. Phenomenology and classification of dystonia: a consensus update. *MovDisord* 2013; 28:863.
5. Friedman J, Standaert DG. Dystonia and its disorders. *NeurolClin* 2001; 19:681.

