

A PERSONAL PERSPECTIVE OF TRAUMATIC BRAIN INJURY

■ Barbara Anan Kogan, O.D.

Abstract

Optometrist Barbara Anan Kogan incurred a traumatic brain injury in 1997. This article describes the acute medical and rehabilitation systems she subsequently experienced. Her resulting motor, cognitive, memory, attentional and visual problems are discussed.

Key Words

traumatic brain injury, neurology, neuropsychology, occupational therapy, optometry, vision therapy, diplopia, torticollis

My first contact with a brain injured patient occurred in 1983 during one of my student externships. This patient was my age, 35, and she had suffered a medication-induced stroke. Over the following years in practice, I provided care for patients whose brains had been compromised, some from trauma (TBI), some from stroke, and some from congenital or degenerative conditions. My education at the Southern College of Optometry had provided me with a basis for managing these patients. I had a good understanding of electrodiagnostics: I was well versed in the theory and clinical use of electroencephalography (EEG), the visually evoked potential (VP) and computerized axial tomography (CT). And I was well aware of the sequelae of brain injury such as visual field loss, ptosis, torticollis and damage to the cranial nerves. My most memorable patient was one whose dramatic visual changes caused me to suspect a serious neurological etiology. She subsequently received a diagnosis of Multiple Sclerosis.

On August 25, 1997 I fell from my bicycle while on a two-day vacation on the Eastern Delaware shore with my husband, and incurred a near fatal TBI. My medical records state the reason for admission to the hospital was a contusion of the right temporal lobe with some subarachnoid bleeding in the Sylvian fissure. The cause of the fall was never determined. I was unconscious and only was able to open my eyes reflexively.

The emergency room physician sutured a contusion around the left orbit. Pupils were reported as 6-7mm, equally round and responsive and my extraocular muscles were intact, and my deep tendon reflexes were symmetrical.

Shortly after a CT scan was done, I suffered a psychomotor seizure and my level of consciousness deteriorated further. This was my second seizure. The first one was at the scene of the bike accident and was apparent to my husband who found me lying in a pool of blood. I had not previously experienced a seizure.

My assessment was charted as closed head trauma with coma and seizure. A respiratory insufficiency or hypoxia may have been secondary to Benzodiazepine sedation or the head trauma. I showed an "obvious" left hemi paresis. A second CT scan taken some 24 hours following my admission revealed an increase in the size of the intracerebral clot in the right and frontal temporal regions with some surrounding edema. The neurosurgeon performed a right fronto-temporal craniotomy to alleviate the edema, but a cerebral aneurysm was ruled out. Further care was given to reduce the intracranial pressure.

After the surgery the ventricles that were compressed initially expanded and clinically I began to make slow progress. It was noted in my chart that I now made eye contact and was able to squeeze the neurosurgeon's hand.

Six days after the accident, I experienced difficulty breathing. While I was still

in a primarily unconscious mode, a tracheostomy was performed. A chest x-ray revealed bilateral lobe infiltrates with a staphylococcus aureus culture. My liver function was impaired, but because I was diagnosed as hypoglycemic in 1970, diabetes insipidus was ruled out even when various glucose testings revealed significantly elevated levels. At that time my chief care-givers were the neurosurgeon and the pulmonary surgeon. Once they had provided all the critical care they could, I was transferred to the coronary care unit (CCU) for careful monitoring by the medical staff.

My husband was extremely instrumental in monitoring my progress. Initially he thought I merely fell off my bicycle and would be fine within several hours. His decision to sign the craniotomy consent form had been a rude awakening of the seriousness of my condition. The frequent and frank discussions with the neurosurgeon about my survival and the state I would be in if I survived were extremely sobering. He took full responsibility for my care, survival and comfort and put his own needs aside. This weekend holiday had turned tragic with life-long consequences. He faced so many unanswered questions.

On the eighth day following the accident, I finally regained full consciousness. The CCU nurse who was attending said the first thing she did was put on my glasses. I pushed them up and tried to adjust them. My first words were, "I have patients tomorrow morning at 8:00." I did, in fact, have vision therapy patients scheduled the morning after we were to return to Washington, DC.

She immediately reached my husband on his cell phone and when he came to see me, I cried. The nurse told him that was normal hospital depression. He was ecstatic and I was "depressed." During that awful week, he also attended to my office and decided to keep it open. Fortunately the two staffers I had were wonderful and devoted. He sought the advice of my colleague and friend on how to provide optometric coverage. She suggested he contact another practitioner, who not only comes from a family of optometrists, but, is also married to an optometrist. My husband had previously met Dr. Stephen Feinberg at an annual Skeffington Symposium. They negotiated a patient care schedule.

Several days after regaining consciousness I was transferred by ambulance for the approximately 100-mile ride to the National Rehabilitation Hospital in Washington, DC. Coincidentally, this hospital is only a few blocks from my office. It was also the hospital where former President Ronald Reagan was taken after he was shot in Washington, DC.

I do not remember anything or anyone during my time in the Delaware hospital and I remember very little about the next five days at the DC hospital. I was now placed under the care of a neurosurgeon who was recommended by our family internist. My husband continued his care for me at the hospital.

I was then transferred to the National Rehabilitation Hospital and this third hospital stay was to be the final step before returning home to be with my husband and recuperate. I was admitted to the TBI Unit and was assigned to the same physiatrist who treated Dr. Robert Kraskin when he was hospitalized prior to his untimely death. Under the physiatrist's direction, I received several different therapies, but at this time my visual status was not considered.

Because of surgery to my trachea, I was as yet unable to speak but could communicate by writing. In this manner, I informed the physicians and nursing staff that I would be home in a few weeks and back in the office a few weeks later. I did not as yet understand or accept the seriousness of my condition.

However, the hospital-based rehabilitation lasted about one month. A rigorous regimen followed with several therapists who were each scheduled to work with me for between one and two hours daily. It was similar to a work schedule. The initial goals of the occupational therapists were to get me to sit up, maneuver into a wheelchair and wheel myself to the bathroom. I had neither the body balance nor muscle strength for any of these tasks. And I could not move myself from the wheelchair to the shower bench because I had difficulty bending. This basic, daily task became minimally easier over time, and in the last week of my hospital stay I used a cane to walk to the bathroom and was finally able to wash and dress myself. I still used a shower bench and needed assistance. The occupational therapist also worked with me in developing body balance and movement in space.

The physical therapy stressed walking on a flat surface. Within three weeks, I walked up and down steps with a cane and assistance, and went outside for the first time since my accident. I felt like a prisoner who was out on parole. My therapies were extended to activities like ball throwing and catching from standing, seated and bent positions.

The occupational and physical therapies initially were one-on-one but in the last week of my stay were both one-on-one and group. I came into contact with patients in their 20's who had incurred TBI, primarily from automobile accidents. There were also senior citizens who suffered from accidents, strokes and brain tumor surgery, and I became aware of the pediatric TBI unit.

As I progressed in my rehabilitation, I was transferred out of the "lock down" unit into one for less severely afflicted patients. My roommate there was approximately 10 years older than I and had suffered from a TBI after falling. She was a diabetic hypertensive who didn't take either condition seriously.

A speech and language therapist worked with me and gave me what I felt were boring and inappropriate exercises. Once I had the tube removed from my trachea, I gradually regained my voice and became even more angry over the therapy. There were no apparent deficiencies in this area.

A neuropsychologist did a brief evaluation and spoke with me for a few hours during this hospital stay about coming to terms with this terrible tragedy and its potential lifelong implication. An EEG revealed marked right hemispheric slowing. This was consistent with the visual symptoms I was experiencing. For example, I was frequently closing my left eye. However, when I requested an optometric or ophthalmological evaluation, one of the attending physicians informed me that it was out of the question.

Several colleagues visited me and I discussed my uncontrollable left eye closure. I complained about intermittent vertical, oblique diplopia and that neither my bifocal nor my single vision reading glasses provided clarity. I did an in-bed self confrontation test and with relief felt that, at least on a gross basis, I did not have a visual field deficit. It was apparent to my husband and visitors that I had developed a left torticollis. I became more aware of

my visual dysfunctions and wanted to begin some vision therapy. However, I realized that much in line with Dr. Gerry Getman's teachings, I had to go through a developmental process: that I had to redevelop the tone and function of my gross musculature before I could gain control of my fine muscles. Thankfully, this was what was being done in my occupational and physical therapy. Nevertheless, when the opportunity arose, I would try to do fixations in the four corners of my hospital room. I also began to practice near-to-far fixations for accuracy and speed. But I was limited by fatigue, which was a predominant factor during this stage of rehabilitation.

Then, approximately five weeks after the accident, I was discharged from the hospital, and was able to go home in my husband's car. I was greatly relieved that the trip wasn't made in an ambulance. This began the next phase of my rehabilitation. I received occupational therapy for the next four weeks. We worked on simple activities such as walking more confidently with a cane and then unaided, practicing repositioning my body to get in and out of a bathtub, bending and lifting a pot from the kitchen cabinet to the stove. And, some three days after arriving home, I received a thorough optometric evaluation from Dr. Jeff Kraskin. His findings included an impaired superior oblique muscle resulting in intermittent strabismus, thus explaining the diplopia, and my frequently closed eye. It also accounted for my perception of objects being slanted from the 1:00 to the 7:00 position, and objects from mid-range to distance appearing to spin. A more detailed visual field test revealed a superior central loss in the right eye and a superior temporal loss in the left eye. Dr. Kraskin also found that my myopia had increased about 25% and 10% in my right and left eyes respectively.

Some six months after the accident I began a program of vision therapy with Dr. Kraskin. We initially worked to improve my basic mechanical visual skills, with particular emphasis on ocular motility. Gradually we moved into techniques to enhance binocularity, more effective and efficient visual motor integration as I moved through space, and eventually to some basic visual perceptual skills.

As I write this article I feel that my visual status is greatly improved. The diplopia is not nearly as frequent, and I

virtually never have to close one eye. I still have a torticollis, although it is less pronounced than previously. My corrected vision is no longer blurred, although my myopia did increase somewhat since the accident, and I once again have the dexterity to be able to insert and remove my contact lenses. And the feeling of being overwhelmed by visual and auditory stimuli has lessened, although it is still troublesome, particularly in a noisy shopping center, the accompanying movement of people, and an overabundance of merchandise. This scenario tends to distort my perception of moving through space.

I still have difficulty talking when there is background auditory information, as from TV, but this problem is getting better. My short term memory is still deficient as is my ability to concentrate. But I have gained back some of the 30 odd pounds I lost during my hospitalizations. My balance and stability have slowly improved so that I am now able to drive, cook, and perform some household tasks although I still fatigue quite easily.

I have decided to stop practicing optometry: my visual disabilities, impaired concentration and loss of energy have precluded my ability to provide patient care, and I have finally accepted the fact that I am permanently disabled. This was not an easy decision, but rather a rational one.

The accident has created a different me who lives a different life than the previous me. Many of the things I took for granted and were performed effortlessly now require conscious thought and practice. But I am thankful for the victories I attain when I'm able to once again do these things. And I am now fully aware of the importance of the support and love I received from my husband Phil, and from the local and national behavioral optometric families.

Optometrists are increasingly providing care for patients who have suffered TBI. I now know that only one who has incurred this condition can truly understand the magnitude of the effect it has on the individual's overall motor and cognitive functions. Consequently, in addition to providing the most complete ocular and visual care, it is critical for the optometrist to appreciate the social, psychological and personal changes with which the patient must now contend. When the optometrist is able to think of these changes from the patient's perspective, the resulting care will be optimized.

Note: On September 24, 1998, Stephen Feinberg, O.D., officially took over the practice of Barbara Anan Kogan, O.D.

Contributing author:
Barbara Anan Kogan, O.D.
3634 Veazey St. NW
Washington, DC 20008-3135
anan@sprynet.com
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ENDLESS JOURNEY

Endless Journey: A Head-Trauma Victim's Remarkable Rehabilitation by Janet A. Stumbo and published by OEP, is a first-hand account of a survivor of a traumatic brain injury. It shows how behavioral optometric care helped her regain much of her visual functioning and get on with her life as a veterinarian and writer. An inspiring story of determination and rehabilitation.

See publication announcement on page 162 of this Journal.