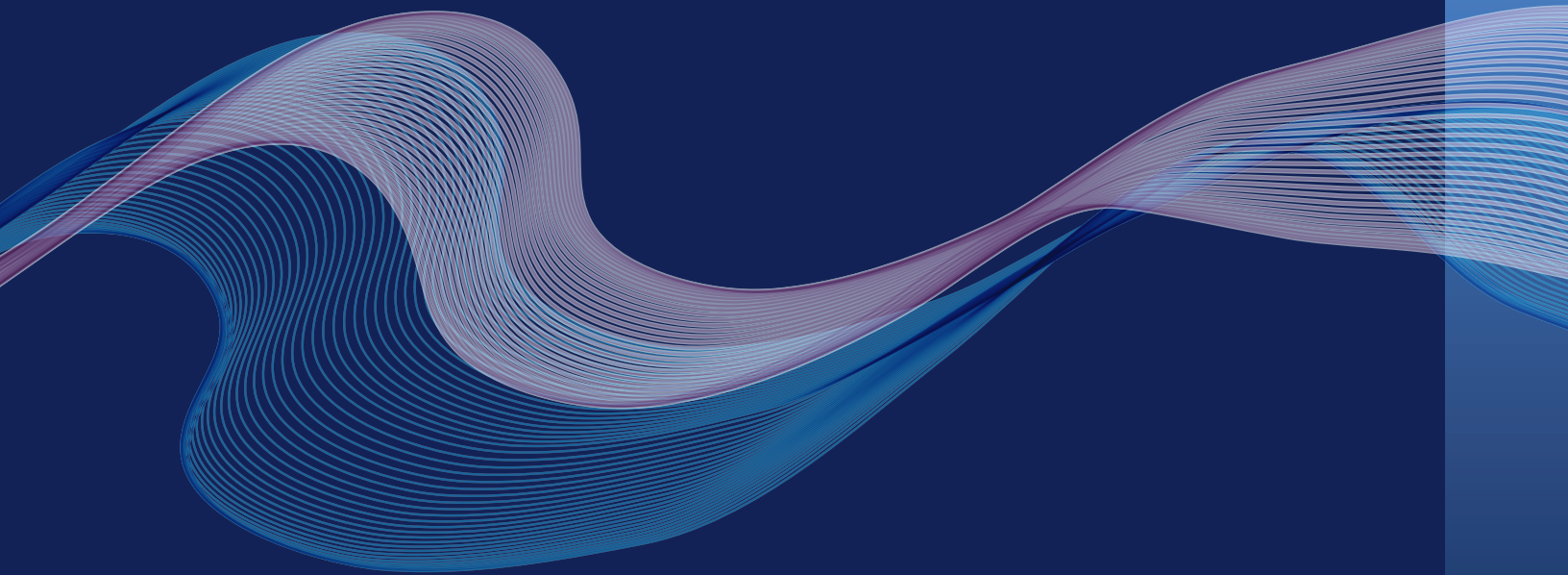


Rehabilitation

The Road Back



Jefferson[®]
HEALTH IS ALL WE DO

HOME OF SIDNEY KIMMEL MEDICAL COLLEGE

Multidisciplinary Effort Links Cardiovascular Dysfunction to Spinal Cord Injury

TR, a 74-year-old male with a longstanding history of orthostatic hypertension, was admitted to the Cardiac Intensive Care Unit at Thomas Jefferson University Hospital due to increasing frequency and severity of syncopal episodes resulting in falls. Previous neurologic, endocrine and cardiac system testing could not identify a definitive cause for his postural hypotension, and his symptoms were attributed to Bradbury-Eggleston Syndrome, a degenerative condition of the autonomic nervous system.

Fortunately, TR had not sustained any injuries from his previous falls, but he and his medical team were concerned about the potential circumstances of a subsequent occurrence and that, in the meantime, his lifestyle was becoming increasingly dependent and sedentary. TR, in fact, had conveyed that there were days he was unable to even get out of bed due to sudden decrease in blood pressure upon standing.

A Rehabilitation Medicine Consult

TR's cardiac care team requested a comprehensive assessment from Jefferson's Department of Rehabilitation Medicine. While performing the assessment, Christina V. Oleson, MD, Associate Professor of

Rehabilitation Medicine, Sidney Kimmel Medical College at Thomas Jefferson University, delved into TR's complaints of increasing neck pain and postural changes that further limited his mobility.

Dr. Oleson suspected that TR's longstanding cervical stenosis and degenerative changes had become severe enough to cause compression of his spinal cord. In this region of the spine, pressure on the cord can interrupt autonomic innervation to the cardiovascular system. To confirm her suspicion, Dr. Oleson recommended that TR undergo a CT myelogram.

TR's cardiac team agreed and approved his transfer to Jefferson's Comprehensive Acute Rehabilitation Unit (CARU), which provides patients with state-of-the-art, individualized medical and rehabilitative care, along with emotional, social and psychological support to help them reach optimal independence and return to their homes and life in the community. The team helped TR achieve the medical stability necessary to undergo his CT myelogram. At this point, however, despite his best efforts, TR's rehabilitative progress was limited due to ongoing blood pressure instability and near-syncope that required the staff's close supervision and monitoring.

The Interdisciplinary Team at Jefferson

Physiatry	
<ul style="list-style-type: none"> • Coordination of medical care and therapies • Medication management 	<ul style="list-style-type: none"> • Team conference facilitator • Prevention of secondary complications
Rehab Nursing	
<ul style="list-style-type: none"> • Patient specific education • Evidence-based nursing bedside care 	<ul style="list-style-type: none"> • Close monitoring of blood pressure • Carryover of rehabilitation techniques
Speech Language Pathology	
<ul style="list-style-type: none"> • Swallowing strategies 	<ul style="list-style-type: none"> • Cognitive training • Voice training
Rehabilitation Psychology	
<ul style="list-style-type: none"> • Adjustment to disorder • Coping and pain management 	<ul style="list-style-type: none"> • Promoting resilience and progress toward patient goals • Patient and family counseling
Recreational Therapy	
<ul style="list-style-type: none"> • Leisure exploration • Promotion of health and wellness 	<ul style="list-style-type: none"> • Patient-centered activities with carryover of rehab skills • Resources for education and support upon discharge
Physical Therapy	
<ul style="list-style-type: none"> • Gait and transfer training • Home exercise program 	<ul style="list-style-type: none"> • Balance retraining • Upright tolerance and postural training
Occupational Therapy	
<ul style="list-style-type: none"> • Home management and community living skills • Cognition and safety training 	<ul style="list-style-type: none"> • Activities of daily living • Education and functional problem solving

The interdisciplinary team provided an individualized program for TR to address his impairments, increase activity at the participation level and develop a discharge plan to ensure functional independence.

Subsequently, the results of TR's CT myelogram confirmed Dr. Oleson's diagnosis of cord compression as the primary cause of his cardiovascular dysfunction, prompting her to collaborate with members of Jefferson's departments of Radiology and Neurosurgery for a treatment plan. They determined TR to be a good surgical candidate and transferred him to the Neurological/Neurosurgical Intensive Care Unit for a posterior cervical decompression and fusion procedure.

Substantially Restored Independence

Three days after this procedure, TR was transferred back to the Rehab Unit. This time, his vital signs remained stable with no issues of orthostatic hypotension during his therapies. Feeling much less pain after surgery and considerably stronger, TR was much more responsive to his Rehabilitation Medicine team's efforts to increase his upright tolerance and functional mobility. Within two weeks, he was able to move and complete various activities of daily living with stability of vital signs and without symptoms. The team also educated his wife regarding post-operative precautions, bracing and equipment recommendations for mobility. Today, TR has regained much of his functional independence and requires only 25 percent of the medications he formerly took.

Onsite Model Spinal Cord Injury Center

A key factor in these results was the close multidisciplinary collaboration between Jefferson specialists in rehabilitation medicine, cardiology and neurosurgery. It resulted in establishing an accurate relationship between the patient's cardiovascular dysfunction and spinal cord injury. And it allowed the patient to experience fast, convenient and seamless transfer into neurosurgery and back to the Rehab Unit. The smooth transition between the acute care hospital and the Rehab Unit proved to be efficient and focused on a long-term positive outcome for the patient.

In partnership with Magee Rehabilitation Hospital, Jefferson is one of only 14 hospitals in the nation – and the only one in the Philadelphia region – that is both a Level 1 Regional Resource Trauma Center and a federally-funded Spinal Cord Injury Model System – as designated by the National Institute on Disability and Rehabilitation Research in the U.S. Department of Education's Office of Special Education and Rehabilitative Services.



TR's progression through Thomas Jefferson University Hospital services were provided during a single episode of care.

Warm, Creative Care Gave Voice to a Little Boy

At the age of 3, a child should be able to say basic sentences and begin to work on preschool-level concepts and early literacy. That was not the case with Spencer, who laboriously approximated some words understood only by his family. Spencer was accurately diagnosed elsewhere as presenting a severe degree of childhood apraxia of speech (CAS), a neurological childhood speech sound disorder in which the precision and consistency of movements of underlying speech are impaired even when neuromuscular deficits are not present. However, to the frustration of his family, Spencer was placed on a waiting list for therapy. His loved ones were also advised that Spencer's likelihood of ever speaking fluent English was small.

Spencer's family was unwilling to accept that outcome and knew that he could not wait for treatment if he was going to be ready to start kindergarten by age 5. Fortunately, someone recommended to them the Pediatric Program within JeffFIT, which provides outpatient speech language pathology as well as

physical therapy and occupational therapy. At JeffFIT's Center City office at 25 S. 9th Street on the Thomas Jefferson University Hospital campus, Spencer came under the care of Dermis E. de Jesús, MA, CCC-SLP. Realizing the urgency of Spencer's case, Ms. de Jesús immediately initiated his speech therapy.

Speech-language pathologists recommend prompt intervention when there is a confirmed or suspected diagnosis of CAS. Early childhood has been considered a critical period of intervention because it is a time of rapid changes in the brain. The most hopeful cases tend to be those children with receptive or comprehension skills that are higher than what they are able to express; therapy can bridge that gap, facilitate expression and continue growth of speech-language skills.

During her seven years at Jefferson, Ms. de Jesús has treated many patients with CAS of various severities. She recognized Spencer's case as especially urgent not only due to his advanced age and but also because his

receptive language abilities had not been evaluated, which made the prior institution's prognosis of Spencer's future communication skills premature at the very least. Ms. de Jesús' opinion was further supported by Spencer's mother, who, as a schoolteacher, had a strong sense that Spencer had a lot going on in his mind that he wanted to convey.

Warm, Creative Interaction

"At Jefferson, we not only have a very high commitment to remaining up-to-date in speech-language pathology techniques but also in making treatment functional for children," notes Ms. de Jesús. "Providing top-quality pediatric services with warm, creative interaction is something that parents welcome."

Over the next two years, Ms. de Jesús demonstrated remarkable, unwavering commitment, warmth and creativity, not to mention patience and energy, in developing Spencer's speech-language skills. She literally bent over backwards to keep him engaged by playing twister with him. She integrated multiple, systematic drills into fun activities that were rewarding to him. Soon, Spencer began to learn words and to speak them clearly.

Involving the Family

Ideally, Ms. de Jesús would have liked to have seen Spencer more frequently than once a week. That was not possible, however, due to his family's busy schedules. So, in addition to engaging and teaching Spencer, she put equal time each week into demonstrating to his parents and sister strategies they could use with him at home, in order to maintain and build upon the progress she made with him each week. She coordinated these activities

in ways that seemed natural to the family, making sure to carefully explain goals and strategies to each of them. She instructed them in using an iPad to enhance communication and to complete articulation drills emphasizing movement patterns and providing visual and tactile cues. She also tasked them with providing her with weekly feedback, including what Spencer had learned, and what he'd been most excited about learning between his visits with her, and, particularly, if he'd used any new words in the context of social interaction.

"There's a huge connection between what we accomplish and the education we provide to families," notes Ms. de Jesús. "They represent different backgrounds and needs – many of them are all busy working people, others have at least one stay-at-home parent or relative that enables them to be more flexible and bring the child in to see us more frequently. Serving a diverse community and being able to meet the individual needs of each patient and family is something we do well."

Those needs also include providing information and documentation necessary to ensure maximum coverage from their insurance companies. Families such as Spencer's rely on Jefferson's expertise to show that the treatment provided is as appropriate, cost-effective and efficient as possible.

Today, Spencer talks eagerly. He no longer has speech and language delays. This optimal outcome is a testament to the hard work and dedication of Spencer, his family and Dermis de Jesús, Spencer's speech-language pathologists in Center City. Jefferson's speech-language pathologists are also available to see pediatric and adult patients at Jefferson's Methodist Hospital in South Philadelphia.

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