

When Time is of the Essence Barrow and trauma doctors work quickly to reduce the damage of spinal-cord injuries

Linda Browning, 57, was driving home from her job as an RN case manager for the Oncology/Medical Surgical Unit at St. Joseph's Hospital when her van suddenly stalled in the middle of Highway 51. Anurse for 30 years, Linda was accustomed to taking charge during life-and-death emergencies. It was no different now that her own life was the one in peril.

Calmly, she turned on her hazard lights, called 911, made sure her seat belt was fastened and said a prayer. Then she waited.

The truck struck her from behind at full speed. The impact shoved the van's rear seats into the front ones and sent the van spinning 100 feet down the freeway, where the retaining wall stopped it.

"After I was hit, I noticed my breathing was shallower, and there were really deep waves of tingling that went from my diaphragm all the way to the tips of my toes," Linda says. "I realized my legs weren't moving. Then I felt my neck. I knew I had a spinal-cord injury as soon as my breathing got shallower. But I didn't put everything together until I realized that my neck was locked. I thought, 'Oh no.'"

'I refuse to go to any other facility'

The nurse in Linda didn't desert her now that she was the patient. When the ambulance arrived, she demanded it take her to St. Joseph's emergency room where Barrow Neurological Institute doctors would be primed to deal with her injury.

"I knew the most important thing I had on my side was time," she says. "I had been taught all these years, the quicker you get to the emergency room after a spinal-cord injury, the better your outcome."

The ambulance crew initially refused Linda's request because another trauma facility was closer. Despite the fact that she was gravely injured, Linda held fast. She told the crew member, "I want you to look me straight in the eye, and I want you to listen to what I'm going to say to you: Hell no, I refuse to go to any other facility!"

The paramedics listened. Once she reached the Del E. Webb Emergency Room and Trauma Center at St. Joseph's, the trauma team kicked into action. With 24 neurosurgery residents, two of whom are always inhouse, Barrow's residency training program is the largest in the world. That evening, residents Steve Chang, MD, and Giac Consiglieri, MD, were on call.

Nicholas Theodore, MD, director of Barrow's Neurotrauma Program, was readying to go home after finishing a case when he got the call.

Quick action was critical

The team stabilized Linda's spine with a metal ring attached by screws to her skull, inserted a tube to breathe for her, gave her medication to relax her muscles and then x-rayed her spine. The whiplash caused by the truck's impact had fractured Linda's fifth cervical vertebra, locking the sixth and seventh together, which severely compressed the spinal cord.

"She came in essentially quadriplegic," Dr. Theodore says. "With that type of injury, I will tell you the overwhelming majority will have permanent neurological dysfunction-in other words, a spinal-cord injury that never gets better."

The longer the spinal cord is denied blood supply, the more damage it sustains. "What happens is, part of the spinal cord dies," Dr. Theodore says.

That's why acting quickly is crucial. One of the residents, gripping Linda's head, forced the jammed vertebrae to unlock, releasing the pressure on the spinal cord. The entire diagnosis and treatment took a mere 30 minutes from the time Linda's stretcher came through the trauma-room doors.

"We have a great set of trauma surgeons who are acutely attuned to spinal injuries and are very good at making the diagnosis quickly," Dr. Theodore says. "That's what we're set up to do, and that's what we do here."

Dr. Theodore operated immediately to permanently fuse the two damaged vertebrae into a normal position. The shattered cartilage disc that had separated them was replaced with a piece of bone and a metal plate.

'I could move everything'

Linda awoke the next morning in the Neurological Intensive Care Unit.

"I like to dance," says Linda, who before the accident could be found with friends at Scottsdale nightclubs. "I was lying there moving my legs like I was dancing. I could move everything."

Linda was released from the hospital one month later - walking. She continues to recover at home, with the help of physical therapy, swimming and, of course, dancing. She took leave of her job to concentrate on her recovery, but plans to resume at St. Joseph's when she is able.

She sometimes suffers severe pain in her arms, a byproduct of the spinal injury. But she expects that to recede within two years. She is also working with a cognitive therapist to sharpen her executive functioning skills in preparation for her return to work.

Dr. Theodore deems her prognosis for a full recovery as "excellent."

So does Linda, as she did from the minute the ambulance arrived at St. Joseph's. "It never crossed my mind I would never walk again," she says. "As soon as I hit the emergency room, I thought, 'I'm where I need to be. They'll take care of me.'"