

June 7, 2010

New Jersey medical team performs successful phrenic nerve surgery

By Barbara Kram, Editor

Julia Cooke, 57, from Grayson, Kentucky, was given six months to live due to her chronic pneumonia caused by a paralyzed right diaphragm, which lost function as a result of complications during a June 2009 surgery. Cooke was told no treatment existed for diaphragm paralysis and she suffered severe shortness of breath, chronic fatigue and incessant bouts of double pneumonia.



The story has a happy ending though. An innovative nerve decompression procedure was performed May 11 at Somerset Medical Center by Dr. Matthew Kaufman and a team from the Plastic Surgery Center of Shrewsbury, N. J. Today Cooke can breathe without complications; she said she feels "20 years younger," and leads a healthy, pain-free life.

Her condition is rare yet this type of injury to the phrenic nerve can occur during a surgery or trauma such as chiropractic neck manipulation, procedures done to provide anesthesia for shoulder surgery, or epidural injections for back pain. Chest or heart surgery can also precipitate the problem. It is not known exactly how prevalent such complications are and estimates vary widely.

The phrenic nerves run in a pair from the brain to each side of the diaphragm. But if only one of the nerve pair, left or right is harmed, then the patient can still breathe, so there is typically no fix.

"For an injury on one side, there really up till recently has been no treatment. Patients are told, look you can live with one lung and breathe effectively," Dr. Kaufman told DOTmed News. "But that doesn't do anyone good when they're ... unable to exercise or even walk up a flight of stairs without panting. You're breathing out of one lung essentially. When the other lung isn't expanding normally, the side that's injured becomes more susceptible to pneumonia and problems."

Dr. Kaufman has come up with a treatment approach to restoring the function of the nerve through decompression or a nerve graft using the rather superfluous sural nerve that runs down the back of the patient's lower leg; it won't hurt their functioning if removed.

Dr. Kaufman first performs nerve testing to determine whether the nerve is compressed or completely injured. "The treatment would be anything from simply decompressing the nerve or releasing all the scar tissue away from it, or in cases where that's not enough, doing a nerve transplant--an interposition nerve graft where we take a nerve out of the leg and reroute around the site of injury, whether in the neck or chest," he said.

Think of it as a kind of electrical rewiring of the nervous system. "We're using standard nerve reconstructive techniques and applying them to a new problem, which really hasn't been done before," Dr. Kaufman said.

He receives regular e-mails and calls from patients around the country seeking his innovative approach to this debilitating and often dismissed problem.

Dr. Kaufman stressed that when you decompress a nerve, patients can enjoy an early recovery. But a nerve graft can take considerable time for the function to return. Nerves regenerate at about one millimeter per day and the distance from the neck to the diaphragm is about 30 centimeters. It may take 300 days before the patient sees any signs of recovery. Also, patient selection is important because if the injury is too old, the nerve may be beyond repair.

But for people who are disabled and told there's no hope, the delicate work of Kaufman and his team provides real promise. They've done more than a dozen cases in the past four years.

Notably, the work of plastic surgeons is often not related to cosmetic surgery at all but involves their special skill in nerve and reconstructive microsurgery.

"Reconstructive surgery is the aspect of surgery that is often not spoken about or focused on as much in the media as cosmetic surgery. But there is a whole field of reconstructive surgery ranging from patients with burns to reconstructive surgery after cancer to nerve injuries. Everything from skin cancer to breast cancers, cancers of the head and neck where plastic surgeons reconstruct form and function all over the body," he said.

Dr. Kaufman has special interests in reconstructive surgery for cranial nerve disorders, skin and head and neck cancer, and vascular malformations. He practices at the Plastic Surgery Center in Shrewsbury, N. J., and is a cancer reconstruction and microsurgery consultant for the Head and Neck Oncology Group of Central New Jersey based at Saint Peter's University Hospital in New Brunswick.