

Press release for the press conference on April 6, 2011

Press conference for the Presentation of  
New Medical Technology of Neural Regeneration.  
**May the team of TVGH bring new hope for  
spinal cord injury patients.**

2011/4/6

In 1996 Dr. Henrich Cheng from Taipei Veterans General Hospital went to Karolinska Institute, Stockholm, Sweden, to work with Prof. Lars Olson, who was the chairman of the Nobel Assembly and chief of the Department of Neuroscience. Together they developed a model for the repair of spinal cord injury in rodents.

Dr. Cheng used microsurgical techniques and a growth factor cocktail in the completely transected thoracic spinal cord of rats. It proved that the central nervous system is able to regenerate, and as a consequence, hind limb movement could be partially recovered. The result was published in Science 1996.

At that time, Christopher Reeve, star of the Superman movies, suffered from complete quadriplegia after falling while horse-riding and became one of the most renown quadriplegia patients of the world. The research by Dr. Henrich Cheng and Prof. Lars Olson brought new hope for this kind of injury. The result was praised by then US President, Bill Clinton, as one of the great discoveries of the 20<sup>th</sup> century.

After Dr. Cheng returned to Taiwan in 1997, he organized a comprehensive neural regeneration research and development team, which included neural repair, neural rehabilitation and basic research. This covered animal experiments and clinical studies for the exploration of new medical technology, aimed at repairing injuries to the human spinal cord.

Since 1999, Taipei Veterans General Hospital has applied to Taiwan's Department of Health to undertake clinical studies, including two stages of

therapy and 133 cases, which have involved the cervical and thoracic spine as well as common peroneal nerve injuries. The therapeutic aspects of the trials were proven by the results and have been approved by the referee committee of Health Department of Taiwan. This technology is now world-leading and the results have been published in 39 papers in relevant Journals.

The unique clinical trials began from the pre-clinical, to clinical phase one and two, conducted at Taipei Veterans General Hospital.

This new technology aims to control the damage, to limit the injury from secondary assault, and to facilitate the regenerative process, together with rehabilitation to re-establish and re-wire the neural network; this generates later sensory and motor recovery.

We would like to express our gratitude to the patients in the trials who were courageous to receive the rehabilitation program and who put great effort into the program.

We also would like to express our gratitude to their families for their care and patience in waiting for the recovery of these patients.

The best recovery situation was always a certain degree away from normal, depending on the patient's age, level and severity of injury, and the time before repair, as well as coping with rehabilitation, and so the recovery varied from individual to individual.

However, this new medical technology is the first to accomplish complete neural recovery after injury. But, there are still many issues such as neuropathic pain, spasticity and chronic scarring in the central nervous system, etc, that require our continued research.

We would like to invite experts of neural regeneration and repair and rehabilitation to join us in future search for a final solution for these patients. To meet this need, Taipei VGH will, through workshops, extend domestically and internationally its medical resources and services to clinics, surgeries and rehabilitation education.

Concurrently, the research team will utilize advanced therapeutic tools,

including stem cell technology, to undertake further experiments for a cure for stroke, neural degeneration, etc

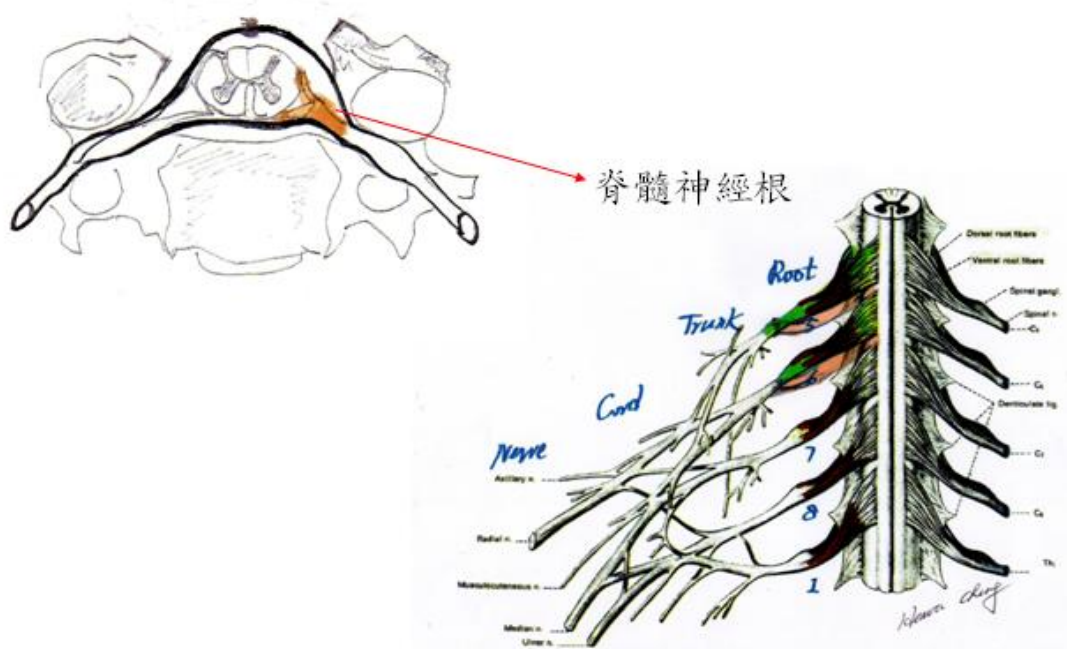
### Cases

1. Miss Wu, 35 years old, C56 root avulsion after car accident. She could not raise her left arm or flex her elbow. 3.5 months after injury she received the new technology and subsequently she could raise her left arm and flex her elbow, two years after the treatment. She became pregnant after 2 years and gave birth to a healthy baby boy.
2. Mr. Chow, a school boy, was injured by a steal chopstick in the neck, rendering C45 cervical cord injury with complete quadraplegia. Six weeks after the injury, he received the novel therapy. After two years he recovered and became ambulatory. He is now a college student. The National Geographic Channel reported his case.
3. Miss Yang, 50 years old, suffered from brachial plexus injury. Two months after the accident she received the new technology and recovered gradually, starting from her shoulder, to her arms and hands. Ten months after the repair, her right upper limb recovered as normal.

※ The recent phase II trial has been published in the Journal of Neurosurgery, Spine, 2011.

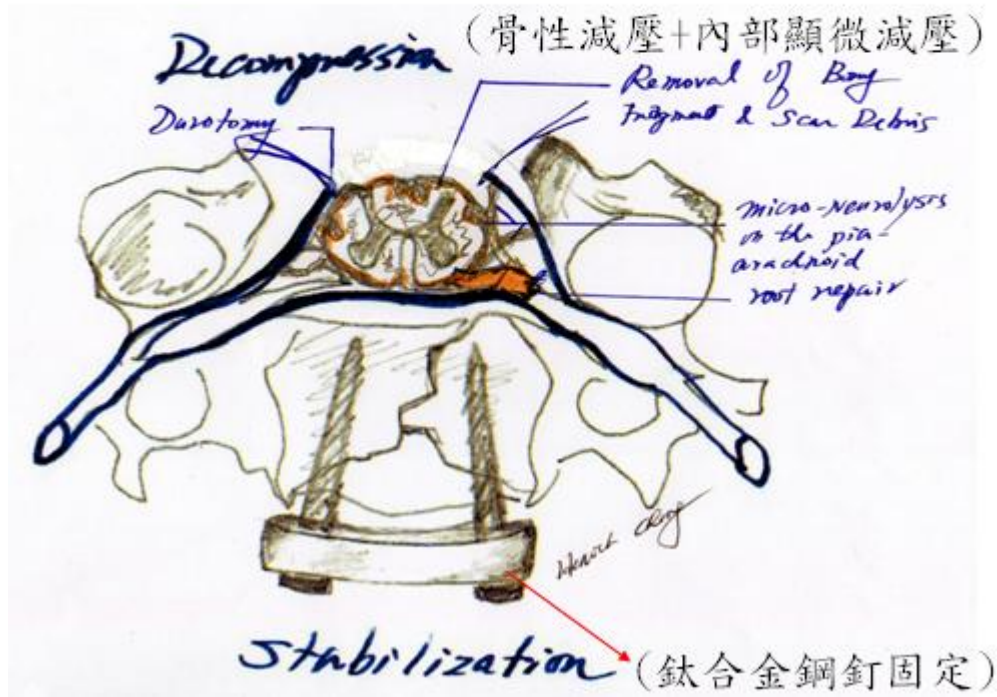
## 【臂神經叢修復術】

### 脊髓神經根之修復



# 新醫療技術之手術法

## 【硬膜打開減壓術】



# 新醫療技術之手術法

## 【硬膜修補術】

