

## ISIC introduces Diaphragmatic Pacing Program in India

29 July 2019 | News

**Patients who are partially or fully paralyzed due to spinal injury or neuromuscular illnesses sometimes need the help of assisted breathing devices or mechanical ventilator**



Indian Spinal Injuries Centre, has tied up with leading US based Gastrointestinal Surgeon, Dr Raymond P Onders, to introduce a program of the path breaking procedure of Diaphragmatic Pacing in India. The procedure pioneered by Dr Onders enables ventilator free breathing in paralyzed patients dependent on ventilator support.

Dr Onders conducted a day-long course for doctors at Indian Spinal Injuries Centre to train them in this procedure that brings new hope for patients dependent on ventilator support for breathing.

Patients who are partially or fully paralyzed due to spinal injury or neuromuscular illnesses sometimes need the help of assisted breathing devices or mechanical ventilator. Such patients can benefit enormously by diaphragmatic pacing that can help improve the patient's natural breathing performance and potentially stop their dependence on a mechanical ventilator.

Dr Onders is Chief of General and Gastrointestinal Surgery, University Hospitals Cleveland Medical Center, Ohio, USA. He has more than 15 years of experience in the field of Diaphragmatic Pacing and numerous publications on the subject.

"Diaphragm pacing is a minimally invasive procedure to allow ventilator-free breathing for patients paralyzed due to spinal injury and can decrease invasive mechanical ventilation in intensive care units. By artificially stimulating the diaphragm to contract, we enable the patient to breathe naturally without the help of a ventilator. The diaphragm pacing system acts as a rehabilitative tool and allows patients to reduce their dependence on a ventilator or even eliminate the patient's need for artificial breathing support. I am glad to help doctors at Indian Spinal Injuries Centre to acquire the ability to perform this procedure that will benefit hundreds of patients," said Dr Onders.

The procedure involves implanting electrodes into the patient's diaphragm muscle and connecting them to an external stimulator which sends electrical impulses. This stimulation to the muscles and nerves of the diaphragm causes it to contract and helps the patient breathe without the help of a mechanical ventilator.

Dr H S Chhabra, Medical Director Cum Chief of Spine at ISIC said, "Patients paralyzed due to high cervical spinal cord or non-respiratory conditions including traumatic brain injury or neuromuscular illnesses like cannot breathe on their own

because the nerves and muscles of their diaphragm become dysfunctional. They have to depend on assistive breathing devices or ventilator support. Diaphragm pacing procedure involves artificially stimulating the diaphragm to enable the patient breathes normally. It can reduce or completely eliminate the patient's dependence on ventilator support. We are very happy to have Dr Onders on board to train and equip our doctors in performing this procedure pioneered by him. It will help us start this program for the first time in India and improve the quality of life of many patients."

Case Study: A 53-year-old man who received a bullet injury in the third vertebrae in the cervical spine (C3) was on ventilation for past three-and-a-half years at home. Dr. Onders checked through laparoscopy whether the diaphragm, muscle used for respiration can be stimulated or not - the left side was fine but the diaphragm on the right was partially stimuable due to non-use. The electrodes were sent on each side and were tunneled out just over the skin and doctors will start stimulating the diaphragm from tomorrow.

"We exercise the diaphragm muscle with the help of external electrical stimulation and he will show improvement from tomorrow. He will be on the ventilator as of now but the requirement of the ventilator and the flow of oxygen will gradually reduce; we expect that in next 6-9 months, he should get rid of ventilation. We already have completed one case successfully, he is the second case. The third will be done shortly and we are assessing two more people for a trial to see if they are eligible for the process." said Dr H S Chhabra.

Indian Spinal Injuries Centre, New Delhi organized the "Live Diaphragmatic Pacing Surgery Course" to help equip its doctors in the procedure to help improve the quality of life of patients who are dependent on mechanical ventilation due to non-respiratory conditions.

The day-long academic session was attended by 150 doctors and included live demonstration of surgeries as well as an in-depth discussion about the procedure. The academic session had Dr Onders highlight the importance of Diaphragm Pacing, its application and important technical aspects pertaining to the procedure.