

## EECP - An option for no-option patients

### Why do some people not qualify for angioplasty to treat blockages?

Many people, especially in the Indian subcontinent, have diffused obstruction in their arteries. In such patients, opening up of a short segment in the artery is ineffective and if we attempt to open the whole length, there is a high chance of recurrence. Such patients qualify neither for angioplasty nor bypass surgery.

Many patients with repeated previous procedures also have such dense, diffused disease conditions. Such people experience continuous, debilitating angina despite medications and are poor candidates for angioplasty or bypass surgery.

### What is the best alternate for such patients?

The best solution for people with diffused disease is continuation of medical therapy with medicines, though they may have heralding symptoms. Transmyocardial laser therapy and surgical endarterectomy have not shown to be effective and lasting.

Enhanced external counterpulsation (EECP) has proven to improve functional status and reduce symptoms substantially in more than 80% of such patients.

### What exactly is EECP?

EECP is a non-invasive, mechanical therapy. The treatment uses several blood pressure cuffs on both legs, thighs and buttocks to gently, but firmly, compress the blood vessels there to boost blood flow to heart. Each pressure wave is electronically timed to the heartbeat. This delivers increased blood flow to the heart at the precise moment it is relaxing. When the heart pumps again, pressure is released instantaneously. This lowers resistance in the blood vessels in the legs so that blood may be pumped more easily from the heart.



### What are the benefits of EECP and how is it different from a traditional angioplasty?

Proven benefits for patients include:

- Decrease in angina pain
- Reduced need for anti-anginal medicine
- Ability to enjoy a more independently mobile and active lifestyle

These are similar to outcomes as expected after angioplasty. EECP is not a replacement for angioplasty, it is done in cases where PTCA or CABG is not feasible. EECP takes 3-6 weeks to complete and the benefits are experienced gradually. Medanta has successfully treated 650 patients with this intensive EECP technique.

### What is the duration of treatment and how long is the hospital stay?

EECP is an outpatient procedure, and does not require hospital admission. The procedure involves a series of 35 one-hour sessions over a period of approximately seven weeks or three weeks, if done twice daily.

## Case Study

### Unique technology to treat rare Neurological Disorder

*Unique neuromodulation procedures address stereotactic and functional neurosurgery, including brain pacemaker (deep brain stimulation) surgeries, spinal-cord pacemaker surgeries, peripheral nerve pacemaker surgeries and intra-thecal drug-delivery system implantation surgeries. These complex procedures are routinely performed at the Medanta Institute of Neurosciences. Here is a view on one such case:*

40-year-old HJ\* from Maharashtra, had suffered a road traffic accident 12 years ago. Following the accident, over the next six-seven months, he began to develop severe neuropathic pain in both his upper limbs and nape of the neck. The pain started off insidiously and progressively worsened over time and became excruciating; intractable to various non-invasive and invasive treatments.

He had already been treated with pharmacotherapy including conventional analgesics, more than three antidepressants and anti-convulsants. None of these was successful in relieving his condition. He was further treated by regional nerve blocks and intravenous ketamine infusion, but to no avail. HJ also underwent prolonged physiotherapy as well as intermittent psychological counselling sessions. His psychiatric evaluation certified him 'normal'. His quality of life was significantly compromised and he was contemplating suicide.

When HJ visited Medanta - The Medicity, his pain severity was 10 on a visual analogue score (VAS). There was superimposition of severe myoclonic jerks (induced by the lightest of touch) involving both upper limbs. His diagnosis was re-confirmed as cervico-brachial CRPS type I, associated with spinal myoclonic jerks. He was recommended retrograde placement of cranio-cervical (C1-C2) paddle-lead spinal cord stimulator, the first-of-its-kind neuromodulation surgery for CRPS in India.

*"The surgery was done in two stages, both under general anaesthesia and in prone position. During the first stage, approaching via a midline incision, the foramen magnum rim to C2 spine was exposed. The upper margin of C1 posterior arch was undercut with Kerrison's punch and with the help of Penfield dissector, the sublaminar space of C1 and C2 vertebrae was dissected. With fluoroscopic guidance, the paddle-lead was then passed from*



*C1 level with the tip lying at C4 level along posterior midline epidural space. The lead was then connected to an extension wire, which was tunnelled to the shoulder area. During the subsequent trial period, the paddle lead was stimulated by an external pulse generator and upon getting satisfactory response, second stage surgery was done after four days, when an internal pulse generator was implanted in the posterior hip area and connected to the extension wire by subcutaneous tunnelling. The paddle lead was configured as bipolar (0+,3), amplitude 0.3 volts, pulse width 300 microseconds and frequency 60 Hz,"* explains Dr. Anirban Deep Banerjee, Senior Consultant Neurosurgeon, Medanta - The Medicity.

Immediately after the paddle lead stimulation, HJ reported significant reduction in pain, which was documented by a steep 80% reduction in VAS and fall in Oswestry disability index from pre-operative 44% (severe disability) to post-operative 6% (no disability). More importantly, the severely disabling violent myoclonic jerks also stopped completely. There was no peri-operative complication. HJ's quality of life was dramatically restored to normal, and the improvement is sustained.

Scan to watch Hitesh's story



<http://www.medanta.org/dr-anirban-deep-banerjee/>

## Tech@Work

### Artis-Zeego Endovascular Surgical Cath Lab

The Artis-Zeego Endovascular Surgical Cath Lab is an operating room and a cath lab combined into a single set-up. It provides the ability to perform both minimally invasive, catheter-based procedures and conventional open surgery in the same room.

The combination of a C-Arm with a powerful industrial robot, the Artis-Zeego, available at Medanta - The Medicity, provides the doctor with almost unlimited freedom of movement. The flat detector of this system rotates around the patient at such high velocity and precision that CT-like images are created, which acquire greater anatomical details than possible ever before with an angiography system. Diagnostic certainty is increased, particularly during complex interventions. In addition, the doctor can perform complex C-arm movements, for example, for peripheral view acquisitions of the patient, which are not possible with conventional C-arm systems.

This hybrid OT embodies the collaborative 'Heart Team' concept of Medanta by enabling cardiac surgeons and interventional cardiologists to work together, simultaneously, in the same room to provide the most technologically advanced care possible. The hybrid room allows instant switch from a percutaneous procedure to a surgery in the event of any emergency.

All endovascular work, including cardiac surgery, cardiothoracic surgery, such as aortic stent grafts, vascular surgical procedures, percutaneous valve replacement,



insertion of biventricular pacemakers and removal of chronically implanted devices can be easily done in the hybrid Artis-Zeego lab.

#### The benefits

- Allows both minimally invasive catheter-based procedures and open surgery to be done in the same OT without having to shift the patient
- Allows both cardiac surgeons and interventional cardiologists to work together in the same OT providing the highest level of integrated care
- Reduces risk in emergency situations since the patient is not shifted from the cath lab to the operating room

## Toolkit

### Simplify; Go paperless

Wikipedia defines Electronic Health Record (EHR), or Electronic Medical Record (EMR), as the systematized collection of patients' electronically-stored health information in digital format. EHRs may include a range of data, including demographics, medical history, medication and allergies, immunization status, laboratory test results, radiology images, vital signs, personal statistics like age and weight, and billing information.

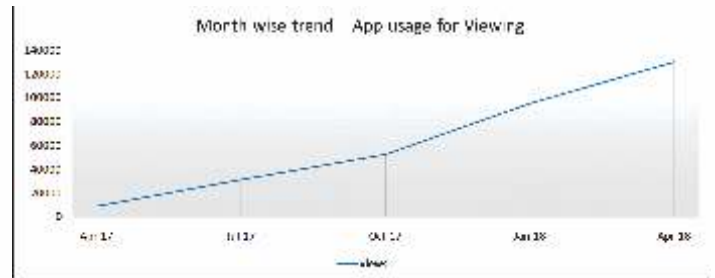
EHR systems are designed to store patient data accurately and capture the state of a patient through the disease life cycle and even later. It eliminates the need to track down a patient's previous paper medical records and assists in ensuring that the data is accurate and legible. It also decreases the risk of lost paperwork. Due to the digital information being searchable and in a single file, EHRs are more effective when extracting medical data for the examination of possible trends and long term changes in a patient.

EHRs and the ability to exchange patient information electronically can help you provide higher quality and safer care for patients while creating tangible enhancements for your practice. EHRs can help you better manage care for patients :

- Providing accurate, up-to-date, and complete information about patients
- Reducing administrative work of staff
- Enabling quick access to patient records for more coordinated, efficient care
- Securely sharing electronic information with patients and other clinicians
- More effectively diagnosing patients, reducing medical errors, and providing safer care
- Enabling safer, more reliable prescribing

- Helping promote legible, complete documentation and accurate, streamlined coding and billing
- Enhancing privacy and security of patient data
- Helping improve efficiency and productivity
- Reducing costs through decreased paperwork, improved safety and reduced duplication of testing
- Consulting patients remotely through tele-medicine

## Trend for EMR App Usage



## Spotlight

### Affordable world-class healthcare now in Sri Ganganagar

Introducing Sri Ganganagar to affordable world-class healthcare, Dr. Naresh Trehan, Chairman and Managing Director, Medanta inaugurated the Medanta S. N. Super Speciality Hospital at the Nathanwali, Hanumanghar - Suratgarh bypass.

Built on a culture of ethical and transparent medical practices, the 200-bed hospital will deliver high quality, affordable healthcare services in an excellence driven patient-centric environment. It will offer convenient access to the latest and most advanced treatment options available. And will be complemented by regular visits of experts from Medanta - The Medicity, Gurugram.

*“By bringing the best of healthcare to Sri Ganganagar, we are furthering our vision of improving access to world-class healthcare for all. Built with the vision of a healthy India, Medanta S. N. Super Speciality Hospital, will bridge the healthcare gap in the city and neighbouring areas of Rajasthan and Punjab,” said Dr. Naresh Trehan.*

#### Specialties available

- Cardiology • Cardiac Surgery • Neurology
- Neurosurgery • Orthopaedics
- Trauma • Gynaecology • Paediatrics
- Neonatology • Nephrology • Critical Care



<http://www.medanta.org/sri-ganganagar/>