World’s First Robotic Radiosurgery System Introduced at Apollo Hospitals

The world’s first and only robotic radiosurgery system is designed to treat tumors anywhere in the body. The CyberKnife was unveiled today at the Apollo Speciality Cancer Hospital at Chennai, by Dr. Prathap C. Reddy, Executive Chairman, Apollo Hospitals Group.

As he unveiled Asia’s most advanced CyberKnife Robotic Radio Surgery System, Dr. Reddy said, “The incidence of cancer has been on the rise. Prevention and preventive checks utilizing advanced diagnostics needs to be on every person’s agenda to curb this surge. Apollo Speciality Cancer Hospital is one of the few hospitals in India equipped to provide 360-degree cancer care. In our continuing endeavor to fight cancer, we have brought the most advanced CyberKnife in Asia Pacific. It is the world’s first and only robotic radiosurgery system designed to treat tumors anywhere in the body with sub-millimeter accuracy – undoubtedly the next frontier in cancer treatment.”

“India is today a global hub for world-class healthcare and we will be adding another highlight with the launch of the CyberKnife Robotic Radiosurgery System in the country,” added Dr. Reddy.

The advanced technology behind CyberKnife uses real-time image guidance technology and computer-controlled robotics to deliver an extremely precise dose of radiation to targets, avoiding the surrounding healthy tissue and adjusting for patient and tumor movement during treatment. Developed by Dr. John.R.Adler M.D, Professor of Neurosurgery and Radiation Oncology at Stanford University Medical Centre, the CyberKnife® Robotic Radiosurgery System is the first system in the world designed to treat tumors anywhere in the body with sub-millimeter accuracy.

Elaborating on patient benefits, Dr. Sanjay Chandrasekar, Senior Consultant Radiation Oncology, Apollo Speciality Cancer Hospital said, “The CyberKnife® system has significant benefits. Many of the complications associated with other conventional cancer therapies are minimized or eliminated by the CyberKnife system. It can be used to treat tumors previously considered inoperable and most CyberKnife treatments can be performed even on an outpatient basis. In addition, it is possible to treat multiple tumors at different locations in the body during a single treatment session. The patient normally experiences dramatic pain relief after the CyberKnife® treatment”.

The CyberKnife system represents the next generation of radiosurgery systems, combining continual image-guidance technology with a compact linear accelerator that has the ability to move in three dimensions according to the treatment plan. This combination called intelligent robotics extends the benefits of radio surgery to the treatment of tumors anywhere in the body. In contrast, traditional radiosurgery systems have limited mobility and generally require the use of rigid frames for body immobilization to effectively target a tumor. CyberKnife does not require any rigid frames or immobilization or even breath-hold to target cancerous tumors.

“The CyberKnife represents an entirely new approach to radiosurgery. Combining robotics and image-guidance allows us to perform true frame-less radiosurgery. Multiple beams of image-guided radiation are delivered by a robot-mounted linear accelerator with precision convergence upon the cancerous tumor while minimizing exposure to surrounding healthy tissue. CyberKnife® can treat by organ and by tumor targets located anywhere in the body without a frame or patient immobilization or breath-hold and with real-time image guided robotic precision that is proven with sub-millimeter accuracy. It is a revolution in the treatment of cancerous and non-cancerous tumors in the body, including the prostate, lung, brain, spine, liver, pancreas and kidney.”

“During a CyberKnife procedure, a patient lies comfortably on the
CyberKnife’s non-invasive procedure gives new hope to pediatric cancer patients as infants can undergo treatment without the painful restraint of being locked into the large metal head frame or the physical trauma associated with other traditional cancer treatments.

Trigeminal Neuralgia is a debilitating condition that affects people of 50 years and above. Caused by the inflammation of the trigeminal nerve, the patient suffers from excruciating pain and spasms of facial muscles. CyberKnife® can also help these patients with its non-invasive robotic radio surgery system. Research to expand the scope of radiosurgery to include other treatment sites is currently underway.

About Apollo Hospitals
It was in 1983, that Dr. Prathap Reddy made a pioneering endeavour by launching India’s first corporate hospital - Apollo Hospital in Chennai (apollohospitals.com). An integrated healthcare company, the group has around 10 000 beds across 45 hospitals, over 750 pharmacies and 100 diagnostic clinics, medical business process outsourcing services, health insurance services, and clinical research divisions with a focus on epidemiological studies, stem cell research and genetic research. To develop talent for the burgeoning need of superior healthcare delivery, the group has 10 nursing & hospital management colleges. Harnessing technology to enhance access across India and share the repository of knowledge, there are over 100 telemedicine units across 7 countries.