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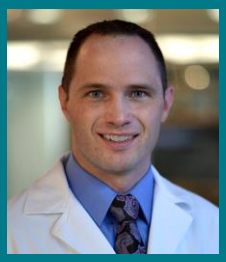
Innovations in Neurology & Neurosurgery

Rady Children's Hospital San Diego

Rady Children's - A comprehensive system focused solely on children.

PEOPLE

Epilepsy physicians bring specialized training, expertise



David Gonda, M.D., has joined the Division of Neurosurgery at Rady Children's Hospital-San Diego.

Dr. Gonda comes to Rady Children's from Texas Children's Hospital, where he was a pediatric neurosurgery fellow, and Baylor College of Medicine, where he was a clinical instructor. He completed his residency training at UC San Diego and earned his medical degree at The Ohio State University.

Dr. Gonda's clinical areas of expertise are epilepsy surgery, MRI laser thermal ablation surgery, pediatric spine abnormalities and craniovertebral junction abnormalities. His research area of expertise is minimally invasive epilepsy surgery.

Dr. Gonda has specialized training in utilizing a new robotic assist device called ROSA, which Rady Children's recently obtained (see the "Innovations" story below). He will be using the robot for epilepsy surgery and other neurological procedures.

Shifteh Sattar, M.D., is the medical director of epilepsy surgery in the Division of Neurology and an assistant clinical professor of neurosciences and pediatrics at UC San Diego School of Medicine.

Board certified in pediatrics, neurology with special qualification in child neurology, and epilepsy, Dr. Sattar is working to establish a Comprehensive Epilepsy Center. As part of this process, she directs and coordinates the epilepsy surgery conferences, where a multidisciplinary team including neurosurgery, neuropsychology and neuroradiology collaborates and determines the best treatment plan for each patient.

Dr. Sattar's research interests are in seizure control and neurologic outcomes after surgical resection of intractable epilepsy. Her goal at Rady Children's is to provide individualized care and identify children who can obtain seizure freedom through epilepsy surgery.

PROGRAMS

Epilepsy program centers on improved quality of life

The Epilepsy Evaluation and Treatment Program uses a multidisciplinary approach to meet patients' individual needs, as well as advancements in technology to improve their quality of life and enhance the understanding of childhood epileptic disorders.

Rady Children's Hospital San Diego

The team includes pediatric epileptologists, neurosurgeons, neuroradiologists, neurodiagnostic technologists, nurses and neuropsychologists.

The EEG laboratory has been ABRET accredited since 2014 and performs outpatient and routine EEGs, ambulatory EEGs and outpatient video EEGs. For selected patients who are judged to benefit from more detailed evaluation, inpatient video EEG monitoring is performed in a specialized unit of the Hospital. Mobile video EEG monitoring stations are used in an area where nursing staff is trained to evaluate patients with seizures according to specified protocols, assuring patient safety and proper assessment during seizure events. Video EEG data is accessible to clinicians through the hospital computer network.

Surgery may utilize the new robotic device called ROSA (see the "Innovations" story below), which has been designed to increase the safety and reliability of neurological procedures without compromising the established surgical protocols.

To provide patients and families with ongoing support and education, the program partners with the San Diego affiliate of the Epilepsy Foundation of America, which offers expressive arts therapy, parent support groups and family education seminars.

Meet the Epilepsy Program team.

RESEARCH

Epilepsy research projects explore new frontiers

Sonya Wang, M.D., is leading a cutting-edge research program designed to improve all aspects of epilepsy care.

One of the most exciting endeavors is her collaborative project with Vikash Gilja, Ph.D., from the UC San Diego Department of Electrical and Computer Engineering, in which advanced software and hardware technology will be used to study brain activity and behavior. The researchers are developing novel neural and monitoring devices to obtain highly detailed information about seizure focus, language, motor, and sensory functions. This information is essential for both clinical decision-making and surgical planning.

In another collaborative project, Dr. Wang is working with physicians at the Pacific College of Oriental Medicine to evaluate acupuncture and other complimentary medicine modalities in treating pediatric epilepsy.

The epilepsy research team is also evaluating new epilepsy drugs in clinical trials, conducting an analysis of ICU EEG monitoring and looking at various investigative studies of 3 Tesla MRI, functional MRI, MEG, PET, SPECT and video EEG.

innovation
belongs in every moment

INNOVATIONS

Novel robotic device to assist in epilepsy procedures

Rady Children's is one of only five children's hospitals in the country with ROSA, a highly advanced surgical robot assistant. This innovative technology can be used in epilepsy surgery and other neurosurgical procedures, ranging from tumor biopsies to deep brain stimulation for movement disorders.

ROSA has two main parts: a computer "brain" for 3-D imaging and stereotactic planning, and a robotic arm that directs surgical instruments with extreme accuracy. For epilepsy surgery, ROSA helps the surgeon to place a series of very fine electrodes deep within the brain to detect where seizures are coming from. The electrodes are placed in a safe, exact and minimally invasive fashion, which not only improves the precision of the procedure, but speeds the recovery.

ROSA can also be used in combination with laser technologies, enabling epilepsy and certain tumors to be cured without the need for an invasive craniotomy.
The robot can assist in the precise placement of small fiber-optic catheters within the brain to be used for MR-guided laser thermal ablations of epileptic or neoplastic lesions. The precision of robotic placement and exactness of the laser ablations allow for the safest possible treatments of deep cerebral lesions.

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