LETTER FROM THE CHAIR

Dear Colleagues and Friends,

In this issue of Synapse, we highlight some of the latest innovations and advances in the Henry Ford Department of Neurosurgery, where we have an extraordinary team of specialists dedicated to improving patient care.

Examining Spine Outcomes

As the leader of the Michigan Spine Surgery Improvement Collaborative (MSSIC), Henry Ford has been active in coordinating spine patient outcomes and treatment protocols for medical centers throughout the state. In 2014 we completed our fully functional website registry and made great strides in our data collection capabilities, among many other milestones. 2015 also has started off well, with 15 new sites joining MSSIC during our latest recruitment period. With data collection from a total of 22 sites, we will better be able to develop specific quality improvement initiatives.

New Epilepsy Procedures

Epilepsy is a complex spectrum of disorders that affects millions of Americans each year – introducing challenges with work, school, social situations and independence. Our Comprehensive Epilepsy Center, recognized by the National Association of Epilepsy Centers as a Level 4 center, has one of the largest programs in Michigan, featuring specialists from the departments of Neurology and Neurosurgery, as well as our experts in neuroradiology, neuropsychology, speech-language pathology and nursing. This team holds a weekly epilepsy surgical conference to discuss and review patients who may be candidates for epilepsy surgery, a potentially curative treatment that is tragically underutilized by patients, in part due to the fear of surgery.

However, Henry Ford offers new minimally invasive procedures that improve accuracy while minimizing risk. We were one of the first institutions in the nation to use stereotactic placement of depth electrodes for a shorter, safer procedure. We also have helped lead the clinical trial for an implantable responsive neurostimulation system that works like a pacemaker to stop seizures. In addition, we offer a minimally invasive, MRI-guided laser ablation technique that for certain patients may be an alternative to traditional open surgery. All of these procedures are supported by the most advanced diagnostic techniques, including our MEG (magnetoencephalography) system, which offers advanced neuroimaging that improves our ability to localize seizures.

Advancing Research and Education

As part of our relentless pursuit of academic discovery, our faculty continues to be active in clinical trials that explore life-saving translational, molecular and personalized medicine research. This includes engaging in more- treatment-specific clinical trials for brain tumors than anywhere in the Midwest, and presenting our work to the broader professional community in a variety of journals, clinical reference books and national conferences. We also are active in graduate education, and in this issue we highlight the latest strides our residents have taken to help advance care.

I am proud of the work our team has done to advance the field of neurosurgery while providing innovative, personalized care that transforms our patients’ lives.

Most sincerely,

STEVEN N. KALKANIS, M.D.

MSSIC UPDATE

Henry Ford Health System is the Coordinating Center for the Michigan Spine Surgery Improvement Collaborative (MSSIC). MSSIC continues to move forward toward the goal of improving spine surgery for patients in Michigan. 2014 was a very busy year of development with many accomplishments. Some of the milestones include:

- A fully functional website registry, including ‘real-time’ data reporting and a patient web portal for completing patient surveys;
- Formal “go live” of registry data collection after several rounds of pre-testing and refinement;
- Active data collection at all seven of the “founding” sites, with data from over 3,000 cervical and lumbar cases entered into the registry by the end of the year;
- Qualified Data Registry status to support Physician Quality Reporting System (PQRS) reporting for participating physicians;
- Regularly scheduled quarterly meetings and conference calls for surgeons and data abstractors;
- Continuing Medical Education (CME) units awarded to participants for attending quarterly meetings;
- Development of the MSSIC Manual of Operations;
- Development of daylong training curriculum for data abstractors.

Looking Forward

2015 promises to be an equally exciting year. The second wave of recruitment recently closed with 15 new sites joining MSSIC in January 2015. With data collection fully under way, data on surgical outcomes (including patient self-reported outcomes), complications and details of surgical procedures are being continuously monitored and analyzed. We hope to identify and begin specific, focused quality improvement initiatives in late summer.

MSSIC TEAM

Directors: 
Muwaffak Abdulhak, M.D.
Stephen Bartol, M.D.

Associate Directors: 
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FOCUS ON EPILEPSY SURGERY
NEW TECHNOLOGIES OFFER HOPE
Higher Precision, Less Risk

Epilepsy is the fourth most common neurological disorder in the United States, affecting an estimated 2.2 million Americans, with 150,000 new cases diagnosed annually. A complex spectrum of disorders, epilepsy is characterized by unpredictable seizures that often have a large impact on a patient’s quality of life.

The Risk of Sudden Death
While epilepsy medications can reduce seizures, they may not eliminate them. “If a patient is having seizures once a week with a change in their levels of consciousness, they’re still at risk of sudden death from epilepsy,” says Jason Schwalb, M.D., Surgical Director of Henry Ford’s Movement Disorder and Comprehensive Epilepsy Centers. “With epilepsy surgery and appropriately chosen patients, we can cure a significant percentage and make a huge difference.”

Epilepsy Surgery Is Underutilized
According to a 2012 Institute of Medicine report and National Association of Epilepsy Centers survey data, only 4,000 patients get epilepsy surgery in the United States each year – while up to 200,000 people are candidates. Many epilepsy patients don’t know about surgical options, given their restrictions on driving, which can make it difficult to attend support groups where they can learn more about these procedures. In addition, many patients have an inherent fear of brain surgery.

Co-Directors, Functional Neurosurgery Program
Henry Ford Department of Neurosurgery

ELLEN L. AIR, M.D., PH.D.
JASON M. SCHWALB, M.D., FAANS, FACS

New Epilepsy Technologies
"One of the ways we have tried to address that fear and get patients appropriate treatment is with newer, less-invasive technologies," Dr. Schwalb says.

- ROSA™ robot: Henry Ford was the third center in the United States to perform stereotactic placement of depth electrodes (SEEG) using the ROSA robot. ROSA allows for a much shorter and safer surgery, with less risk for bleeding, infection and anesthesiology complications. This technology reduces a 10-hour case to about an hour and a half.
- ROSP™ System: For the last decade, Henry Ford has been a lead institution in a responsive neurostimulation clinical trial. The technology – developed by NeuronPrep, Inc., and recently approved by the FDA – uses an implantable device that detects and responds to seizures onset with electrical stimulation, similar to a defibrillator.
- VisualSeq™: This minimally invasive technique uses laser ablation to destroy a targeted area of the brain that is causing seizures. A flexible laser fiber is guided into the targeted area through a small hole in the skull, then MRI guidance is used to monitor the temperature in the brain and ensure that only the target tissue is ablated.
- MEIG system: Henry Ford also is one of 29 centers in the United States and the only one in Michigan that has a magnetoencephalography (MEG) system, which offers advanced neuroimaging through recording magnetic fields produced by the brain.

PATIENT STORY: JOE MOON
“I was 17 when I had my first grand mal seizure and blackout. Ten years later, I was on epilepsy medication that didn’t totally work, and the uncertainty was affecting my life. I wasn’t able to drive and wasn’t able to hold down a job. Ultimately, I went into the emergency room at Henry Ford Hospital after having a massive headache that lasted for two days. While there, I met, Dr. Andy Zilgitt, who diagnosed me with drug-resistant focal epilepsy. I felt he really did care, and he told me there was a surgery that could help me. When I learned more about the ROSA robot and laser ablation, I was scared, and I wondered, will this really work? But I desperately wanted my independence. Before the surgery, I was having up to six small seizures a year and even a half year, I’m sure of my epilepsy and can live normal again. It’s unbelievable. It feels like a resurrection and I’m so appreciative of Dr. Zilgitt and my surgeon, Dr. Jason Schwalb. I didn’t have to constantly worry about having these seizures, and I can drive again. In fact, now I’m working on getting my CDL license.”

For more information about current clinical trials, visit henryford.com/neuro

CLINICAL TRIALS

IRB 3099 – Epilepsy Registry (Internal Funding)
IRB 5702 – Primary Brain Tumor_PROMIS (Internal Funding)
IRB 5702 – The Use of Patient Reported Outcomes Measures Evaluation System (PROMIS) in Clinical Populations
IRB 5905 – Assessment of Clinical Outcomes in Patients Receiving Combination Anterior-Posterior Cervical Fusion Surgery (Internal Funding)
IRB 5996 – Potential Racial Disparities in Treatment of Traumatic Nervous Injury (Internal Funding)
IRB 6340 – RODLER/Back Pain Outcomes using Longitudinal Data – Registry and Repository (University of Washington), Grant# 840625
IRB 6588 – PCORI LESSER_Long Term Outcomes of Lumbar Epidural Steroid Injections for Spinal Stenosis (University of Washington), Grant# B49150
IRB 6784 – National Neurosurgery Quality and Outcomes Database (NQOD): A Prospective Registry for Quality Reporting
IRB 7863 – Mechanomyography for Evaluation of Pedicle Screw Placement (Sentio, LLC), Grant# E 12301
IRB 8158 – OPTIMISE STUDY: Occipital Nerve Stimulation (ONS) for Migraines (A40023), (Boston Scientific), Grant# E 14045
IRB 8179 – Vascular Malformation Registry (John R. Davis Chair) Grant# 390992
IRB 8189 – The effect of treating non ruptured cerebral aneurysms on confounding headaches
IRB 8255 – The Development of a Pre-Operative Predictor Model of Outcomes in Patients Undergoing Lumbar Spine Fusion Surgeries (Internal Funding), Grant# Pending
IRB 8435 – Tissue Bank for NPH Patients
IRB 8777 – Efficacy of Vagal Nerve Stimulator for Diabetic Syndrome using Social Media
IRB 8787 – Surgical Technique For Repair of Complex Skull Base Defects
IRB 8842 – Phase 1 trial of laser interstitial thermal therapy for cerebral radiation necrosis (Harris Grant) HI0194
IRB 8924 – A Randomized Cross-over Study for Normal Pressure Hydrocephalus (ARCS-NPH) (Johns Hopkins)
IRB 9053 – Metastatic Cancer Study: Spine Surgery
IRB 9165 – Three Dimensional Motion Analysis in Patients Status Post Anterior Cervical Fusion and Cervical Disc Arthroplasty, A Clinical Study (Internal Funding)
IRB 9229 – The Application of Morphometrics As a Predictor for Peri-operative Complications After Lumbar Spine Surgery (Internal Funding)
IRB 9246 – Comparing Engagement Techniques for Incorporating Patient Input in Research Prioritization.SMARTER
IRB 9251 – PI Initiated: Retrospective Safety and Efficacy Evaluation of Spinal Fusion Procedures Utilizing Autologous Conserved Bone Marrow Aspirate (ABMA) (Bio Technologies), Grant# E14195
IRB 9405 – Proactive External Tissue Expansion for Complex Cranial Reconstructions
IRB 9620 – A Phase IIb Clinical Trial of the Safety and Efficacy of Toca 511, a Retroviral Cancer Vaccine, in Adult Patients with Recurrent Glioblastoma Multiforme
IRB 9699 – A Phase II Study of Orally Administered PC-009A094 in Adult Patients with Relapsed/Recurrent Glioblastoma (GBM)
IRB 9812 – A Phase I Clinical Trial of Amiodarone in Patients with Non-1P/19Q Deleted Anaplastic Glioma. The CANTON Intergroup trial

TO MAKE AN APPOINTMENT, GO TO henryford.com/neuro or call (313) 916-1340

SYNAPSE – APRIL 2015
AQUEEL H. PABANEY, M.D.

Dr. Aqueel H. Pabaneh is a senior neurological surgery resident at Henry Ford Hospital. He received his medical education at the Aga Khan University in Pakistan. He is a member of the AANS, CNS and North American Skull Base Society. His clinical and research interests include intracranial aneurysms, arteriovenous malformations and surgical approaches to the skull base. He will pursue further training in cerebrovascular and skull base surgery as a fellow under Dr. Adam Robin – patient position, incidence and early parts of the surgical approach can also be incorporated. The team is now emphasizing qualifying the nonenhancing component of the tumor. In addition to the surgical dorsolateral approach, the team will be considering a more aggressive approach, which may involve a combination of surgical techniques.

PUBLICATIONS: JUNE 2014 – MARCH 2015


The 2015 Henry Ford Brain Tumor Symposium, Focused Forward: New Thoughts on Brain Tumor Treatment, will take place on April 24 at the MGM Grand Detroit. We are very excited to welcome multiple brain tumor experts to our event from around the country.

TO REGISTER, VISIT HENRYFORD.COM/2015BRAINTUMORSYMPOSIUM OR CALL (313) 916-8212.


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