

TWIN CITIES

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**HealthPartners
Spine Center**
Blending Neurosurgery
and Orthopaedics
for Spine Care



Drs. Mendez, Morgan and Kang discuss an upcoming case.

HealthPartners Spine Center Blending Neurosurgery and Orthopaedics for Spine Care

By Marian Deegan

IN ONE MOMENT OF spraying ice and smashing impact on an October night in 2010, Jesse Martin's life was changed. The University of Denver hockey player lay motionless on the ice, having suffered a devastating injury. The blow to his neck caused a spinal cord injury; three fractures in his C2 vertebrae had dislocated his spine. The survival rate for this injury is devastating; often, people die instantly. Of the few that survive, most face a future as quadriplegics, often with significantly shortened life spans.

Martin beat the odds. Today, he is back on the ice, albeit not competitively, and talking about his remarkable recovery as a speaker in the global TEDx events. He credits his recovery to the team of Robert Morgan, M.D., HealthPartners orthopaedic surgeon, Alex Mendez, M.D., HealthPartners neurosurgeon,

and to the unique spine trauma model at Regions Hospital.

"In the treatment of spine patients," says Dr. Morgan, "orthopaedics and neurosurgery have historically carved out separate niches. As an orthopaedic surgeon mentored by neurosurgeons, I recognized the value of a different kind of spine trauma model — one where orthopaedic spine surgeons and neurosurgeons would share conferences, review each other's cases, bring their diverse skill sets to the table and operate together, sharing accountability for outcomes. Six years ago, HealthPartners and I started a conversation about creating this model. Regions Hospital had the resources — cardio-thoracic surgery, plastic surgery, urology, and ear, nose and throat — to handle complex spine cases. The trauma program led by Michael McGonigal, M.D., is also excellent. I joined the team five years

ago, then we recruited Alex, and now we are building a spine trauma program with state-of-the-art care for spine patients, including treatment of deformities, tumors and the most complex trauma injuries."

Like Dr. Morgan, Dr. Mendez's education was an atypical blend of neurosurgery and orthopaedics. At the University of Minnesota, Jim Ogilvie, M.D., took Dr. Mendez under his wing, introducing him to instrumentation patterns. Dr. Mendez developed strong collegial relationships with orthopaedic surgeons and a respect for orthopaedic techniques.

Today, the HealthPartners Spine Center has four neurosurgeons and two orthopaedic spine surgeons sharing clinic space at the HealthPartners Specialty Center and working and operating together at Regions Hospital. Like Dr. Morgan, Rick Davis, M.D., is

an orthopaedic surgeon. Of the neurosurgeons, Dr. Mendez and Anje Kim M.D., focus on cranial vascular surgery and tumors. Matt Kang, M.D., is devoted to spine surgery and head trauma. Jon McIver, M.D., focuses on movement disorders; his deep brain stimulation program is counted among the top programs of its kind in the country. Each surgeon handles approximately 225 spine cases annually.

“Spine surgery is evolving into its own specialty, where orthopaedic and neurosurgical skills overlap,” Dr. Morgan says. “I tend to be more mechanical and deformity oriented. I work with drills, implants, screws and rods. Neurosurgeons focus on compression, dura repair and spinal cord injury. By conferring with each other, we draw from both disciplines to diagnose and treat patients.”

“I think we’ve fostered a convergence that incorporates orthopaedic mechanical principles in surgery,” Dr. Mendez says. “It’s phenomenal to work in an atmosphere of mutual respect and generosity. We know we are more effective when we tackle very complicated problems by sharing ideas and borrowing from each other — it is one of the most powerful elements of our team. There is a fluid, nonconfrontational cooperation, and an incredible amount of respect that each team member brings to the equation. Our model has improved us individually and collectively as surgeons. We are doing some very nominative things that surprise people at national meetings — we are a little bit ahead of the ball — and that’s saying a lot in this community of mature, advanced, very fine spine practitioners. I credit the cooperation fostered at Regions for helping us to look at problems in new ways.”

Dr. Morgan recognized that cultivating a comfort level with cross-disciplinary opinions was critical to the success of the program. “Alex and I started out ahead of the game,” he observes. “It takes time to develop trust. You know the quote: ‘A person convinced against their will is of the same opinion still.’ We let new team members experience our working style. We have a monthly spine trauma and

deformity conference where we have dinner together and discuss cases. We attend social functions, peer reviews and internal department functions as a group. Over time, new surgeons are educated into our atmosphere of camaraderie.”

The complementary advantage of two subspecialty skill sets is particularly valuable in the treatment of complex reconstructions. “Patients with multiple past surgeries have extremely thin dura, or lining of the spinal cord,” Dr. Morgan explains. “Alex is very skilled with dura reconstruction, and we have learned from him. I use cervical pedicle screws. They are very difficult to navigate in small channels of bone, but provide a more robust fixation. With Regions’ state-of-the-art interoperative CT scans and trackers, our team has become very skilled at positioning this fixation.”

As awareness of the program has grown, referrals of severe spine trauma patients have increased. Last year, Regions treated 62 spinal cord injuries. “We regularly handle cases that absolutely require our program’s dual skill sets,” says Dr. Morgan. “When a snowmobiler was brought in with a cranial cervical dislocation — he had suffered an internal decapitation and his pelvis was separated from his spine — the constellation of injuries was horrific. I worked with the orthopaedic trauma surgeon to expose the skull and the damaged pelvis. At the point where the pelvis was fully exposed, I moved



down to reattach spine to pelvis, and Alex scrubbed in to reattach spine to skull. I remember handing bone from the pelvis to Alex for the skull repair. This patient survived, healed and is able to walk again. Alex does excellent orthopaedic repairs by himself, and I can repair dura by myself. But when we work together, there’s a synergy that’s greater than the sum of our combined skills.”

The spine program has developed a reputation for the complexity of injury they are able to treat, and for an infection rate in complex cases that is much lower than the national average. “Our complications rate is low too,” Dr. Morgan says. “We pay close attention to surgical technique, to alignment and deformity correction. You’ve got to identify the right problem, and execute the right plan. There are many excellent surgeons in the Twin Cities that execute as well as we do. But creating the right plan? That’s where



The HealthPartners Spine Center team operates at Regions Hospital in St. Paul.



HealthPartners Spine Center surgeons: neurosurgeon Alex Mendez, M.D., orthopaedic spine surgeons Robert Morgan, M.D., and Rick Davis M.D., neurosurgeons Anje Kim, M.D. and Jon McIver, M.D. Not pictured, neurosurgeon Matthew Kang, M.D.

our multidisciplinary team excels.”

“When you present a case to us, you are going to get incredibly divergent opinions,” says Dr. Mendez. “I will almost invariably err on the side of the most minimally invasive procedure we can do that will improve a patient’s quality of life. Robert leans toward bigger surgeries. He focuses on the approach that solves the problem most definitively. We discuss the options and consider all of the factors, and a consensus solution emerges. Sometimes, one of us may catch a critical factor that others have missed.”

“We see many failed back surgery patients,” Dr. Morgan says. “If I could tell people one thing, I would tell them not to

give up hope. It is a rare patient we see for whom we can’t come up with an option that is actually helpful, no matter how old or young, no matter how many surgeries they’ve had before or providers they’ve seen. There may be something that we can do. It may not be surgical. There may be a psychological or nutritional or infectious problem. We provide care for the whole patient. We consider it our responsibility to offer patients something better for having met with us.”

As part of the spine program’s holistic care focus, the team is codifying program processes and procedures and expanding best practices. “I have always been of the opinion that I am a doctor before I am a

surgeon,” Dr. Morgan says. “We address everything from patient education to smoking to the effect of vitamin D levels on back pain and surgical outcomes. Our nurses actively track patients as they prepare for surgery, monitoring kidney function, nutrition, family support, and addressing end-of-life care as appropriate. We are developing an anesthesia protocol, a complex spine pathway and a perioperative care model that are being validated now. A spine care coordinator codifies care coordination and best practices. We understand that the physical, surgical, social and spiritual needs of our patients are all very important to successful outcomes.”

Regions Hospital is also working towards certification as a Model System for Spinal Cord Care. “Fourteen institutions in the United States have that designation — none are in Minnesota,” Dr. Morgan says. “We sent Jesse Martin to Denver’s Craig Rehab Institution. They were great, but we want to offer that resource here, for our community. Certification requires subspecialty equipment, trained therapists, social integration including psychological counseling and ongoing health care to help people like Jesse achieve independent living. It is exciting to think about how spine treatment in the Twin Cities is going to improve over the next five years. I’m very optimistic — what is good now is going to get even better.”

“The best part of my job?” Dr. Morgan muses. “Seeing a patient like Jesse Martin stand up and walk, after he never thought he’d walk again. Knowing that someday he’ll be able to teach his sons to play hockey. There are no words for those moments. I’ve had so many patients; I see their faces as we talk. Their situations seemed grim — hopeless. Some families were ready to withdraw care. We take people who have been told, ‘There’s nothing more that can be done; you need chronic narcotic medication and nursing home care.’ But they don’t give up. They come to us. And today, these patients are alive. They are doing well. They are walking. They watch the sun rise. That’s pretty cool.” ■

HealthPartners Spine Center
Patient Appointments 651-254-3490
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