July 2015

Innovations in Orthopedics

Rady Children's Hospital San Diego

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

INNOVATIONS

Hip surgical planning with 3D printed models

Through a collaboration with the Bioengineering Department at UC San Diego, the Hip team in the Division of Orthopedics & Scoliosis at Rady Children's Hospital-San Diego is using 3D printing technology to create patient-specific models for planning complex hip reconstruction surgery.

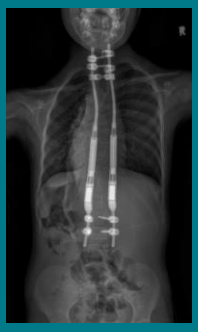
The images shown here are of a patient with a proximal femoral deformity due to a severe chronic slipped capital femoral epiphysis. The deformity is difficult to depict with standard AP and lateral radiographs. However, with the 3D printed model, our Hip team can not only characterize the deformity but plan the corrective osteotomy and perform a mock surgery.

Research is currently underway to assess the clinical benefits of this technology to our patients, which are expected to include less operative time, decreased blood loss and greater anatomic correction.

Read about our Hip Center.

Magnetic growing rod surgery for early onset scoliosis

The Division's Early Onset Scoliosis Program offers non-fusion growth-guidance surgery with the recently U.S. Food and Drug Administration-approved MAGEC ® adjustable growing rods.



In this cutting-edge procedure, the magnetic growing rods are attached to one or both sides of the spine. Following surgery, the rods can be lengthened non-invasively as the child grows using an external remote controller. As young patients implanted with traditional growing rods may undergo up to two surgeries a year for several years, adjustable growing rods are a significant treatment advancement.

The Division's team assisted in performing the first two magnetic growing rod surgeries in North America, both of which had excellent outcomes. Read more.

When this surgery is performed on very young patients, the team has used complex surgical approaches with very short instrumentation constructs that limit the effects on spinal growth. The complicated initial surgery has resulted in fewer subsequent operations and better final correction.

RECOGNITION

Ranked #2 in the nation by U.S. News & World Report

U.S. News & World Report has ranked Rady Children's orthopedics program #2 in the country in its new 2015-16 Best Children's Hospitals edition.

Success with complex fractures, surgical complications and infection prevention, along with other data collected, accounted for 83.3 percent of each program's score. Our Orthopedics Division had an overall score of 95.9/100 and scored "superior" on the following criteria: preventing surgical complications, use of infection-preventing measures, commitment to best practices, steps to engage families, adoption of health information technology, and full-time subspecialists available.

Contributing to the performance in the ranking is the Division's fellowship program. For decades, residents from across the country have competed for the positions.

See the full scorecard here.

PEOPLE

Two well-traveled fellows

Eric Edmonds, M.D., and Burt Yaszay, M.D., recently participated in traveling fellowships. Dr. Edmonds was one of three physicians chosen to participate in the first Asia Pacific Paediatric Orthopaedic Society/Pediatric Orthopaedic Society of North America traveling fellowship. Dr. Yaszay was one of three surgeons selected for the traveling fellowship of the Scoliosis Research Society.

Dr. Edmonds and his colleagues began their trip in Australia, where they visited various cities and discussed information with their host physicians about hip dysplasia, scoliosis, pediatric sports medicine and trauma. Next, they traveled to Auckland, New Zealand, where they learned about high rates of clubfoot and hip dysplasia in the Maori people. The doctors then headed to Hong Kong, where they were impressed by their colleagues' use of technology, particularly 3D printing, as well as their work with limb alignment.

Dr. Yaszay and his colleagues traveled to Asia for nearly four weeks with Senior SRS Fellow Dr. Behrooz Akbarnia. In Japan, they observed a casting technique for early onset scoliosis as well as the first anterior tether performed in Japan. In China, they visited Drum Tower Hospital, the country's largest spinal deformity center. At a hospital in Seoul, South Korea, the doctors scrubbed in on some procedures, and Dr. Yaszay performed a maneuver for rod derotation and vertebral derotation of one of the hospital's top surgeons.

The trip concluded for Dr. Yaszay and Dr. Edmonds in Hong Kong, where they attended the 10th Annual Combined Congress of APPOS and APSS (Asia Pacific Spine Society).

Both doctors had a wonderful experience, benefiting from the exchange of information and ideas with their fellow pediatric orthopedists and pediatric spine surgeons.

Rady Children's Hospital San Diego

innovation belongs in every moment

Learn more at RCHSD.org