Child with Rare Disorder Benefits from Robotic Surgery

The first sign of trouble for Allison Clark was the coughing that would start after her daughter Layne ate.

Then the 10-year-old vomited after eating a few times. "I gave it couple of days and then went to see our pediatrician," says Clark, who lives in Statesboro, GA.

He prescribed reflux medications to see if the vomiting would subside, but over the next couple of weeks, Layne vomited more frequently. She also began to lose weight.

X-rays of the upper gastrointestinal tract indicated a condition called esophageal achalasia, a rare esophageal motility disorder. "My husband Ray and I watched the X-ray and saw the barium go down her tract and sit on the bottom of her esophagus," recalls Clark.

But achalasia is rare, affecting one in 100,000 people, only ten percent of whom are children. Because of that, Layne's physician wanted to try and rule out other possibilities.

The next step was an esophageal manometry, a procedure that measures the pressure of food and liquid as it passes down the esophagus.

Clark went in search of a hospital that had experience administering the procedure to a child. Luckily she was able to turn to her employer, gastroenterologist Dr. Scot Murray, who referred her to MUSC's Dr. Donald Castell and his partner, Dr. Jason Roberts. "Dr. Castell is considered the guru of manometry," says Clark.

Manometry is a difficult and uncomfortable procedure that requires the patient to eat and drink with a tube running from the nose down into the stomach. Dr. Roberts read the results and quickly diagnosed Layne with achalasia.

"I knew the next step was surgery," recalls Clark. She wanted to move quickly - by now, Layne had lost 13 pounds.

"The obstacle was finding someone who had done the surgery on a child - I wasn't going to do anything experimental with my baby," she says. "Even a Jacksonville clinic that specializes in it had done just a total of 200, and none on a child."

On MUSC Children's Hospital website, Clark found Dr. Andre Hebra, chief of the division of pediatric surgery and chief of surgery at MUSC Children's Hospital. Dr. Hebra had performed laparoscopic Heller myotomy, which is the surgery Layne needed to open the muscles in her lower esophagus, many times.

"I got more done, more answers, more help in two weeks at MUSC than I had in two months at home," recalls Clark. During a pre-op meeting, she says, "Dr. Hebra and the staff sat there with me until every question was answered, and I never felt rushed or like he had to get somewhere."

A pioneer in minimal access pediatric surgical techniques, Dr. Hebra proposed that Layne would benefit best from the robotic version of Heller myotomy, performed with the aid of the da Vinci Surgical System. The most advanced robotic system on the market, the da Vinci is commonly used for prostatectomy and in treating uterine and ovarian cancer. It allows for better visualization, 3-D control and more fine, precise movements than open surgery.

Expensive and complex, the "four-armed" da Vinci surgical system is limited to unique applications, says Dr. Hebra, who has been working with the system for 12 years.
for six years and has used it a handful of times on pediatric patients.

"During Heller myotomy, we open up the abnormal muscle in the esophagus and remove the obstruction that's making it hard for the patient to eat and swallow," explains Dr. Hebra. "It sounds simple, but is tricky because of the small space and location deep in the abdomen."

Layne's surgery went perfectly and took just three hours. She spent three days in the hospital, had five small incisions and minimal post-op pain. And the vomiting ceased.

"It's great to be able to eat and not throw up," declares Layne, soon to be in fifth grade. "I can't eat anything sticky or hard, and that pretty much narrows down everything I love - chips, popcorn, candy bars. But once I fully recover I can eat junk food again!"

"Her recovery was phenomenal," says Dr. Hebra. "She's a good example of how robotic surgery applies to unique cases. You can see the advantages right away - faster recovery and reduced pain, allowing children to get back to normal life more quickly. An open operation would have required a prolonged recovery, and most patients are unable to resume normal activities for almost a month. Layne was back to normal and able to play and participate in sports in less than one week."

Size is no longer the limitation it once was, says Dr. Hebra, with more advanced minimally invasive treatments available for pediatric patients from newborns to older teens. Robotic technology takes it to a new level. "It plays a role in providing even more sophisticated equipment for use in treating even more complex surgeries."