

# ST. LOUIS POST-DISPATCH

## Robotic surgical assistant helps O'Fallon, Mo., girl get her life back sooner after brain surgery

By Michele Munz Post-Dispatch | Jun 25, 2016



Payton Tindall (left), 14, of O'Fallon, Mo., and Kayden Vazquez, 15, of Wentzville, perform in their dress rehearsal with My King Studio of Dance on Friday, June 10. Tindall had surgery this spring for a brain tumor at St. Louis Children's Hospital. The hospital is the first in the region to use a robotic surgical assistant, ROSA, allowing for faster recovery times. Photo by Cristina M. Fletes, cfletes@post-dispatch.com [Buy Now](#)

In November, a scan revealed why Payton Tindall, 14, was having migraines. She had a brain tumor, and it was growing. She was scheduled for surgery in February to remove it.

The surgery was going to involve shaving part of her head and opening her skull, which would leave her with a noticeable incision. It also meant at least eight weeks

before she could return to beloved dance classes and prepare for the end-of-the-year recital.

“She was very concerned with dance, being this late in the season,” said her dad, Brett Tindall, of O’Fallon, Mo. “She was concerned she would get behind.”

And she wasn’t too excited about having a bald spot among her long locks, especially for dance. She and her fellow dancers pull their long hair into buns, ponytails and braids for performances.

Just in time for her surgery, however, St. Louis Children’s Hospital became the first hospital in the region to get a robotic surgical assistant — ROSA — that is designed to increase the safety and accuracy of cranial surgeries, performed with instruments that are as thin as a needle.

With its pinpoint accuracy, the robot allows surgeons to avoid having to open the skull. Surgery time is cut from upward of six hours to two, and recovery time from weeks to days.

Payton was back to school in two weeks and back to dance class a month after her surgery. She was able to take her bows after her tap, jazz and ballet routines at her recital with My King Studio of Dance earlier this month. She just had to apply a bit of extra gel and hairspray to strands growing back.

“He only took like 12 hairs or something,” Payton said. “I had expected to be woken up and be handed a mirror and half my head would be shaved.”

Using GPS-like technology, surgeons can use the robot to precisely direct the entry and depth of the surgical tools. The machine has a robotic arm that mimics the movements of a human arm, giving surgeons complete freedom in their trajectory choices.

Surgeons choose the targets and plan the routes to avoid sensitive areas of the brain, explains St. Louis Children’s neurosurgeon Dr. Matt Smyth. “The robot will run those for me when it’s game time.”

Typically, surgeons build a structure around the person’s head and manually manipulate the path of the surgical tools while using MRI scans as guidance.

The new technology has big benefits for patients with small tumors as well as those struggling with epilepsy.

For brain tumors, the robot allows surgeons to both biopsy the mass and treat it at the same time with another fairly new procedure — laser ablation. A laser fiber that heats and melts the surrounding tissue is inserted in the tumor.

For those with epilepsy, the robot can help better pinpoint the source of seizures in the brain. The source is usually found by opening the skull and placing a grid of electrodes on the surface of the brain, but ROSA eliminates the need for a craniotomy by quickly and accurately placing single electrodes deep in the brain through tiny holes in the skull.

“The electrodes can go deeper so we can learn more about the brain,” Smyth said. The procedure is also far less invasive, lowering risk and recovery time.

If the source of the seizures is small, surgeons can again use the robot and laser to remove it.

“This new technology not only assists our team in identifying where in the brain the seizures are occurring but also helps us target these areas with greater precision during surgery,” Smyth said.

The robot has assisted in about 10 surgeries so far.

Payton’s father said the idea of a robotic assistant took some getting used to, but everything about the surgery was positive.

“To see her bounce back quickly was fantastic,” he said. “Within a couple weeks, she was back to her normal self and you’d never know she had surgery.”

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