

The Kansas City scoliosis specialist literally dropped the chart when he learned Jourdan Rush's religious beliefs would not allow her to use blood or blood products during surgery. "He immediately referred us to a surgeon in Chicago. After meeting that surgeon, my husband and I realized how complex the surgery would be," recalls Jourdan's mother, Kathy. "We decided to research bloodless pediatric orthopedic surgeons throughout the United States. We were willing to go anywhere so Jourdan could have surgery without blood."

## How Far Would You Go For Quality Bloodless Care?

Their search led them to California. The hospital service desk at the Watchtower Bible & Tract Society referred them to Ram Mudiyaam, M.D., an orthopedic surgeon affiliated with the Bloodless Medicine & Surgery Program at Fountain Valley Regional Hospital and Medical Center. Dr. Mudiyaam specializes in bloodless procedures, including scoliosis surgery.

Last summer, Jourdan, 14, and her parents drove 1,500 miles across country to meet Dr. Mudiyaam. But long before they arrived, they had already decided to proceed with the surgery.

Scoliosis surgery is the latest medical challenge Jourdan has faced. At age 2, she inexplicably suffered cardiac arrest. During the 25 minutes it took to revive her, her brain did not receive enough oxygen. She was left with quadriplegia, the loss of feeling or control in her arms and legs, coupled with severe spasticity.

Over the years, physicians near Jourdan's home in the Kansas City area had been treating her for a host of medical concerns. They also were monitoring the curvature of her spine. As Jourdan entered adolescence, it became evident she would

require corrective surgery.

"Jourdan was experiencing both neuromuscular scoliosis and kyphoscoliosis, meaning the curvature of her spine was very stiff, bending sideways and outward. She also had pelvic obliquity, a condition causing one side of her pelvis to be higher than the other," Dr. Mudiyaam says. "As a result, her spine was bent almost 90 degrees forward and to the left."

On August 28, Dr. Mudiyaam performed segmental spinal instrumentation, using the Luque-Galveston technique. During the 11-hour procedure, he used wires to attach two rods to Jourdan's spine. Then, he bent the rods so he could connect them directly into both sides of her pelvic bone to correct the obliquity.

During surgery, Jourdan's entire spine was exposed, but Dr. Mudiyaam was able to avoid the use of blood through meticulous tissue dissection and hemostatic techniques. Hypotensive anesthesia lowered Jourdan's blood pressure to help decrease any bleeding or blood loss. Electrocautery coagulation was used to stop bleeding quickly. Dr. Mudiyaam also used a cell saver to collect, purify and return blood lost.



Dr. Mudiyaam with Jourdan.

During Jourdan's post-operative stay in the Pediatric Intensive Care Unit, she received Epogen to stimulate her body's production of red blood cells.

Total blood lost during the surgery was only about 400 cubic centimeters. At no time was there a need for a blood transfusion or blood products.

"Jourdan has had a complete reversal of her thoraco-lumbar kyphosis. Her scoliosis has been corrected to 50 degrees, and she is sitting much straighter," Dr. Mudiyaam says. "However, because of the stress her spasticity puts on the metal, she will need to be monitored. But overall, she has had an excellent result."

Jourdan was discharged from the hospital, and on September 29, a month after surgery, was flown home by air ambulance. She has returned to her seventh grade class on a part-time basis.

"Everybody comments how much taller Jourdan looks. My husband and I are fortunate that we were able to take her to see Dr. Mudiyaam and have the bloodless surgery," Kathy says. "Everybody at the hospital was very friendly and realized we had driven all that way—and would do it again. With Jourdan's medical problems, you just never know. If Jourdan requires additional surgery, we will be coming back to California."



A happy Jourdan, after her surgery, with a group of friends.