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## **UT Southwestern specialists perform area's first fetal surgery to correct Twin-Twin Transfusion syndrome**

DALLAS – May 13, 2011 – Jessica and Chad Browning were ecstatic last fall when they learned they were expecting twins. They had two children already, but wanted a third to round out their family. Twins were a bonus.

About 19 weeks into the pregnancy, however, they received a shattering diagnosis: Their babies had Twin-Twin Transfusion syndrome (TTTS), a life-threatening condition in which the placenta is shared unequally by identical twins.

“We were devastated,” said Mrs. Browning. “It was very overwhelming. We were not going to do what’s good for just one of the twins. We wanted to do what would be best for both.”

The condition, which occurs in about 15 percent of identical twins, can lead to a severe discrepancy in blood flow, amniotic fluid volume and fetal growth, and can result in up to a 90 percent mortality rate for one or both twins, said Dr. Michael Zaretsky, assistant professor of obstetrics and gynecology at UT Southwestern Medical Center and the maternal-fetal medicine specialist to whom Mrs. Browning was referred.

“It’s shattering for parents to get this diagnosis,” Dr. Zaretsky said. “They’ll do anything to make it a good outcome. Our goal is to do it right.”

Dr. Zaretsky is one of the only maternal-fetal medicine specialists in North Texas who had been trained in a procedure to correct the syndrome. In December 2010, he and Dr. Ashley Hickman, also an assistant professor of obstetrics and gynecology and a maternal-fetal medicine specialist at UT Southwestern, along with nursing staff at Parkland Memorial Hospital, successfully performed for the first time in Dallas a fetoscopic laser procedure to correct TTTS.

The surgery improved the twins’ chances of survival to between 60 percent to 70 percent and 90 percent for at least one survivor.

On Feb. 25, the twins were delivered by Cesarean section at 32 weeks, and both were healthy. Alexis Nicole weighed 3 pounds, 9 ounces, and Amber Rose weighed 4 pounds, 6 ounces. They spent just two weeks in a Carrollton hospital before being released.

In TTTS, blood vessels on the surface of the shared placenta do not provide an equal volume of blood for each fetus. The result is that one twin becomes the donor and the other the recipient. The donor becomes anemic, has less amniotic fluid and is growth-restricted. The recipient gets larger, and its

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amniotic fluid becomes very elevated. The recipient twin is weakened faster because the increased amniotic volume creates high blood pressure and cardiomyopathy, or a thickening of the heart.

Dr. Zaretsky, with colleagues from Parkland, UT Southwestern and Children's Medical Center Dallas, developed the fetal surgery over a four-year period in partnership with the Cincinnati, Ohio-based Fetal Care Center, one of only a dozen institutions in the U.S. that offers the procedure.

During the 60- to 90-minute surgery, a surgical telescope (fetoscope) was inserted into the amniotic sac of the recipient twin, allowing Drs. Zaretsky and Hickman to "map" the placenta and determine which blood vessels crossed the vascular equator, or the point at which blood flows to one twin or the other. Dr. Zaretsky, who is also director of maternal-fetal medicine at Children's Medical Center at Legacy in Plano, then used laser fiber technology to seal off several vessels and reroute blood flow to both twins.

The team of specialists also drained two liters of amniotic fluid from the larger fetal sac and created small openings in the fetal membrane to equalize fluid faster.

Mrs. Brown spent the remainder of her pregnancy with bed rest. When her girls were delivered, the larger twin needed some help with continuous positive airway pressure (CPAP), which blows air through an infant's nostrils to gently inflate the lungs. CPAP machines are routinely used by adults with sleep apnea to aid breathing.

"I thought, 'If I could just hear them cry, then I'd know they were alright,'" she said. "Alexis just wailed, and I started crying. Amber needed some help; she would forget to breathe at times. But after 12 hours on a CPAP, she picked it up on her own. It was just wonderful."

Dr. Zaretsky said the most common complication of the procedure is the initiation of preterm labor, caused by breaking the amniotic sac; this occurs about 8 percent of the time. Other medical concerns are possible rapid fluctuation of blood flow for the fetuses during the procedure, or placenta blood vessels that begin bleeding.

Looking back, Mrs. Browning said she was willing to take those risks.

"It is very scary, but honestly and truly, if we hadn't had this procedure, we know we would not have both girls here. This surgery really does save lives."

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