



Surgeons spend months evaluating conjoined Egyptian twins
Parents, surgeons and ethicists involved in decisions on separation surgery

(DALLAS—April 28, 2003)—Conjoined identical twin boys Ahmed and Mohamed Ibrahim arrived in Dallas from Cairo, Egypt on June 22, 2002, to an uncertain fate.

The boys are joined at the crown of the head. They are craniopagus twins, an extremely rare condition that happens in only one out of 2.5 million live births. They were born on June 2, 2001, to Sabah and Ibrahim Ibrahim in a remote village in southern Egypt.

They were placed in the care of Dr. Nasser Abdelal, head of neonatal surgery at the University of Cairo Hospital, shortly after their birth. Dr. Abdelal was granted legal guardianship to care for and make appropriate medical treatment decisions for the boys.

One of the Egyptian doctors caring for the twins knew Dr. Kenneth E. Salyer, who was involved with the successful reconstruction of craniopagus twins from Lithuania 15 years ago. He asked Dr. Salyer to evaluate the boys for possible separation surgery. Under the auspices of the World Craniofacial Foundation, and with the full support of Medical City, the boys were brought to North Texas Hospital for Children at Medical City (NTHC) for tests and evaluation by Dr. Salyer and a team of specialists in the Dallas Craniofacial Center. Months have been spent evaluating and testing the infants to see if separation surgery is possible.

Boys' father is involved in all medical decisions

Despite the miles that have separated them, the parents have always maintained a deep interest in the children. Their father visited them regularly while they were in Cairo, and came to Dallas in September 2002, where he now remains with them and is involved in all decisions regarding their medical treatment.

A team of three pediatric physicians and two nurses from the Cairo hospital accompanied the boys on their long trip from Egypt to Dallas. The nurses have been their primary caretakers since their arrival in Dallas. The boys spent the first two weeks in Dallas as inpatients at NTHC, but have lived in a nearby apartment with their nurses, and with their father nearby, for most of their stay in Dallas.

In their specially adapted stroller, the boys are able to go out for shopping excursions and occasional outings. As they grow, however, the adults caring for them encounter increasing difficulty in moving them about, because of their combined weight and length. Their conjoinment also means they cannot sit up, and it is extremely difficult for them to crawl or walk, since these activities require significant coordination between the two tykes.

Their condition also requires that they have daily physical therapy and sensory integration to develop muscle tone in their legs and lower body. In addition, they continue to undergo craniosacral therapy from a team of highly trained therapists. This light-touch manual therapy is designed to release membranous and structural restrictions around the brain and spinal cord and encourage the central nervous system to function at peak efficiency.

Medical tests help in evaluation for surgery

Since coming to Dallas, the twins have undergone numerous medical tests to help surgeons evaluate the possibility of their surgical separation. Many of these tests have been based on medical imaging studies such as computed tomography (CT) scans and magnetic resonance imaging studies (MRI). Several full-scale models have been made of the boys' skulls to aid in the decision making. In addition, the drainage system has been duplicated to see how many and which vessels are shared as well. While each twin has his own venous system, the team discovered that their systems are codependent, meaning that they drain into one another. The twins' interdependence of drainage vessels poses a unique challenge to surgeons. According to Dr. Salyer, "If you don't have adequate drainage, then the surgery is very difficult."

These tests also have confirmed that the twins have largely separate brains and share less than 10 percent of their brain tissue.

Preparation for the separation surgery is "like preparing to land on the moon," Dr. Salyer said. The surgery itself is "very tenuous, very hazardous," although the all surgeons involved believe a separation can be successful.

Tissue expansion surgery increases skin graft sources

One obstacle to the surgeries is the need for sufficient skin to cover the large wound areas that will be created at the time of separation. Because of the boys' small size, their existing skin or tissue must be expanded. This tissue expansion requires a separate surgery several months prior to the separation surgery.

During this first surgery, tissue expanders are inserted under the skin at sites on the boys' heads and on their legs. These expanders are essentially balloons that can be filled with saline on a weekly basis, which will stretch the skin and increase the amount of tissue available for grafting.

Specially designed headgear and vests were created for the boys to wear. They help protect the sites where the expanders are placed and ensure that the tissue expansion process has the greatest potential for success. The boys will lie on an airbed that also has been modified to meet their unique needs. The airbed will keep minimum pressure on the boys' bodies during the long period needed to sufficiently expand the skin. The boys will stay at Medical City in NTHC throughout this period leading up to separation surgery.

Separation surgery may take place this summer

The actual surgery to separate the boys will take place sometime during the summer months. The boys will be taken to Children's Medical Center in Dallas for the surgery. The craniofacial team, lead by the pediatric neurosurgery group Neurosurgeons for Children, will use the specialized equipment available there to help achieve the best possible outcome for the boys. Many pediatric specialists will be on hand to assist the team of pediatric neurosurgeons who will perform the brain surgery. Dr. Salyer, Dr. David Genecov and members of their team will perform the reconstructive surgery.

The physical requirements for the separation surgery are immense. A specially designed rotating operating table has been designed and created to allow the surgeons full access to the boys' heads. Once the incredibly complex separation surgery is completed, the OR table will come apart into two separate surgical beds so that the reconstruction team can provide tissue coverage to the boys' heads.

Following surgery and recovery, the boys will be brought back to North Texas Hospital for Children at Medical City, where they will undergo months of recovery, including intense therapies for rehabilitation.

The major concern with this surgery is that one or both twins may not be strong enough to survive after separation. Everyone associated with this undertaking is mindful of the tremendous risks to both boys, but believe that separation surgery is the only chance the boys have for long-term survival. The hope is that they are able to achieve their full potential, and can return to their family in Egypt as soon as possible.

Dr. Salyer is founding chairman and director of the International Craniofacial Institute and the Cleft Lip and Palate Treatment Center at Medical City Dallas Hospital. He also is founder of the World Craniofacial Foundation, which is dedicated to helping families and children with craniofacial and cleft deformities. The Foundation provides financial and emotional support, as well as access to life-changing procedures.

The Foundation is underwriting all costs related to travel, lodging and ancillary expenses; all of the doctors are donating their medical expertise.

In addition, Medical City is donating the costs of all hospital-related procedures taking place at this facility that involve the care of the twins.

Medical City is a 598-bed tertiary medical center that includes the North Texas Hospital for Children at Medical City. Some 1,250 physicians are on the medical staff, along with over 2,600 hospital employees. A recognized leader in healthcare, Medical City and North Texas Hospital for Children serve as referral centers for hospitals throughout the region. Many of the programs have received national and international recognition for the quality of care provided, including cardiovascular, craniofacial, oncology, pediatric and transplant services.

*Prepared by the Media and Public Relations Office
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