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Picking a Transplant for Molly

Child's Rare Illness Leaves Her Parents With a Dilemma

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ARLINGTON HEIGHTS, Ill. -- In December 2000, Jenny and John Birmingham learned that their 8-month-old daughter, Molly, had a rare genetic disorder called Hurler Syndrome. She would be dead by the age of 10, maybe sooner, the doctors said.

There were two treatments, both dangerous. Either one might just as easily kill her as save her. And even if one of the treatments worked, the Birminghams had no assurance that their daughter would live anything approaching a normal life.

The Birminghams had only a few months to make the choice. Data on Hurler show children fare better if they are treated before their first birthday.

So the Birminghams plunged into the modern world of medical-information overload. They tracked down medical papers. They asked the National Marrow Donor program to send statistics about survival rates. Mr. Birmingham spent hours on the Internet. "I didn't want to miss that one piece of information, the piece that might save Molly's life," he says.

Jenny Birmingham

Yet their story shows how rapid advances in medicine and information often create as many questions as answers. In the end, for even the best-informed patients, choosing a treatment often amounts to a leap of faith. And when a disease is so rare that little medical evidence exists to help make an informed decision, the leap of faith is even greater.

At first, the only piece of information the Birminghams had was a guide to understanding Hurler Syndrome the doctor had given them when Molly was diagnosed. It said that only one person in 100,000 is born with the disease, in which an enzyme that is needed to break down a molecule composed of protein and sugar is missing. The molecules accumulate around the heart, brain, vital organs and muscles, causing neurological decline and, eventually, death. Bone-marrow transplants were often attempted as treatment. When the transplants work, cells are engrafted in the body and produce the missing enzyme.

For days the booklet sat on their kitchen table. Mrs. Birmingham cried every time she flipped through its pages. The children pictured had thick eyebrows, droopy eyes and faces that were

unnaturally flat and wide. Some wore bright smiles but others looked short and listless.

Until the day Molly was diagnosed, their lives had seemed simple. The Birminghams met in the second grade at a Catholic parochial school. They started dating in high school, went to the same college, got married two years after they graduated, and had a son, T.J., three years later. They kept the same group of friends all their lives.

Then everything seemed to change. Mrs. Birmingham had always enjoyed a quiet routine and an ordered life. She worked part time as an assistant editorial director at an educational-toy company and still managed to make baby blankets for friends and cook dinner for her family. In the first week after the diagnosis, she abandoned her routine and found herself endlessly snapping pictures of Molly and T.J., then 2 years old.

Mr. Birmingham still got up and went to work as the advertising manager at Discover Card in Chicago. But he spent most of his days in a daze, quietly staring at his computer screen and getting little work done. He said he had no energy for his usual sports-related chatter with co-workers.

John Zich/Mercury Pictures

John and Jenny Birmingham in their backyard with their 3-year-old daughter, Molly, and 6-year-old son, T.J.

About 10 days after the diagnosis, the Birminghams made up their minds to do something. They put away the Hurler brochure and began learning about bone-marrow transplants, which seemed like the only option at the time. They set a deadline of one month to decide whether to go through with it.

Mr. Birmingham, then 30, did most of the legwork. The research, he says, offered a refuge from the sense of helplessness he had been feeling. He began filling a binder.

Insurance would cover the cost of the transplant, he learned, but not all of the peripheral expenses. There would be a lot of travel and the cost of renting an apartment, only some of which would be covered. Molly would have to be away from home for at least several months, and one of her parents would have to be with her. Mrs. Birmingham would most likely have to quit her job.

On Jan. 4, 2001, Mr. Birmingham sat at the family computer and typed a plea for help on a Web site started by parents of children with Hurler, which is named after Gertrude Hurler, a German physician who first identified it in the early 20th century. "I cannot believe how much medical jargon we have digested over the last week and a half," he wrote. "We feel like we're in our first year of medical school ... ."

In postings on the site, some families shared stories of their children's deaths. Others wrote about why they had chosen one doctor over another. It was here that Mr. Birmingham learned about a relatively new kind of transplant using stem cells taken from the blood in a newborn's umbilical cord instead of from bone marrow. With umbilical-cord blood, the patient and donor didn't have to be a perfect genetic match. There were many unanswered questions, but the preliminary results seemed to indicate that children who got these transplants were less likely to reject the new cells than those who underwent bone-marrow transplants from unrelated donors.

The doctor who helped pioneer this technique -- Dr. Joanne Kurtzburg of Duke University -- was

a high-profile leader in the field, the subject of a People magazine article. Still, Mr. Birmingham was leery of something so new.

Then the Birminghams learned that neither they nor Molly's brother were close enough genetic matches to donate bone marrow. Molly would have to wait -- perhaps several months or more -- to find a match in the national registry of unrelated bone-marrow donors. While she waited, the protein-and-sugar molecules in her blood would continue to accumulate, steadily destroying more bodily functions.

One Saturday afternoon, the Birminghams went to a Greek restaurant near their home to meet a family that had two young girls with Hurler. Both girls had undergone bone-marrow transplants at the University of Minnesota. The older girl, Rachel, had not been diagnosed until the age of 4½. She survived the transplant but remained severely disabled. She was blind, confined to a wheelchair and had undergone several major spinal surgeries after the transplant. It was too difficult for her to come to the restaurant.

The younger sister, Jessica, had been diagnosed shortly after birth. The transplant took place when she was 15 months old. Jessica, whose long-term prognosis was better than her sister's, bounded into the restaurant. "She seemed small for her age, and she acted younger than her age, but she seemed to be doing OK," says Mr. Birmingham.

The Web-site dialogues and the meeting with Jessica made it clear to the Birminghams that neither bone-marrow nor umbilical-cord stem-cell transplants offered hope for a miracle.

There was always the option of doing nothing at all. A geneticist they met with explained that some families couldn't bear putting their child through the pain of a transplant, only to watch them die from the procedure. They preferred to treat the symptoms of the disease as it progressed but to spend as much time as possible at home, not in hospitals.

The Birminghams ruled out this option almost immediately. If they did nothing, Molly had perhaps 10 years to live, and the quality of that life would steadily diminish. They had to do something.

But what? The Birminghams had to choose between two top medical centers -- at Duke University and the University of Minnesota. Each had its own strengths and specialties, and doctors at the two hospitals didn't agree on how Molly should be treated. At Minnesota, they were told that Molly would undergo radiation in addition to chemotherapy; doctors there told them it would make the type of transplant they recommended more effective. At Duke, doctors said the risk of neurological damage from radiation was too high; they substituted an additional chemotherapy agent instead.


John Birmingham

On Jan. 18, 2001, the Birminghams drove to Minneapolis to visit the pediatric bone-marrow-transplant program at the University of Minnesota, where Jessica and her sister had been treated.

Dr. Charles Peters, director of the Inherited Metabolic Storage Disease Program at Minnesota, had a terrific reputation. Forty-six years old, he had spent his entire medical career treating children with metabolic storage diseases. He was regularly consulted by insurers, doctors and desperate

parents about treating children with these diseases, which, like Hurler, involve the body's inability to produce certain enzymes.

But even after all their research, the Birminghams were shaken when Dr. Peters laid out what Molly would have to endure simply to prepare for a transplant. She would undergo nine days of chemotherapy. Her hair would fall out. She'd suffer high fevers and possible seizures. The drugs would burn the lining of the bladder and intestines and cause terrible sores to erupt on her body and in her mouth.

Molly might be in so much pain that she stops eating and has to be fed intravenously, Dr. Peters said. If the transplant worked she would remain highly vulnerable to infections, perhaps spending about 50 days in the hospital, followed by about three months of daily or near-daily outpatient visits. It would probably be about five months before Molly could go home. In a small percentage of children, the transplant doesn't work. A second one is needed, requiring the child to undergo the process again.

The Birminghams had wanted Dr. Peters to be frank, but this was more than they had anticipated. They wanted to feel like they would be partners in Molly's care, but Dr. Peters gave them the impression that he would be firmly in charge. Though his clinic had begun performing umbilical-cord stem-cell transplants, Dr. Peters said he wasn't yet convinced that they worked as well as the older technique. He recommended the Birminghams go with the bone-marrow transplant.

In a recent interview, Dr. Peters, a tall, thin man with an untamed head of black hair, said he understands that parents are often unprepared to make such difficult choices. "You as a parent have no conception essentially of what a bone-marrow or umbilical-cord stem-cell transplant is," he says. "Our society focuses on the consumer, puts the consumer in the driver's seat. But it's misleading to think that someone who doesn't do this day in and day out can understand all the factors involved in making this kind of decision. This is unfair to the parents."

The Birminghams asked Dr. Peters what he would do if Molly were his child. He said he and his wife had no children.

When the Birminghams visited the ward where Molly would have to stay for the transplant, many of the doors to the children's rooms were closed. They had never seen a transplant ward. The silence rattled them. "I felt like I had been kicked in the gut," says Mrs. Birmingham.

On the long drive back to Chicago, they wondered if they were being fair. So what if the doctor hadn't set them at ease, they said. His job was to help Molly, not hold her parents' hands.

Two days later, when Mr. Birmingham called Duke to ask about its transplant program, Dr. Kurtzberg answered the telephone herself -- on a Saturday. They talked for more than an hour. Dr. Kurtzberg seemed warm, almost motherly, but she was also blunt, telling them that whatever they decided to do, they needed to do it soon.

A few years earlier, before they became reluctant experts in the world of medicine, Mr. Birmingham had ordered a tape of a television program that had moved him deeply. It was a program about a man's battle with cancer. Every time he watched the program it lifted his spirits. Now, he felt like he better understood the man's struggle.

So Mr. Birmingham retreated to the basement, plunked down on the couch where his kids usually

sat to watch Barney videos, and put in the tape. He listened to the patient talk about his hope and his pain. He watched the patient's doctor outlining the treatment risks. As the doctor spoke, the camera panned across the inside of his home. On the wall behind him was a family photo.

Mr. Birmingham spotted a familiar face in the photo. He sat up in his chair, grabbed the remote and called his wife to come look. The face in the frame matched one they had seen in People magazine: Dr. Kurtzberg. The doctor being interviewed on the video was her husband.

After all his medical research, Mr. Birmingham was deeply moved by the power of this coincidence. "In the end, you are looking for a sign," Mr. Birmingham says.

They arranged to visit Duke about 10 days later. Dr. Kurtzberg, 52, was the first doctor to perform an umbilical-cord bone-marrow transplant between unrelated people. She had a great reputation, but some considered her too much of a risk-taker.

Dr. Kurtzberg, a mother of two, was wearing overalls when she met the Birminghams at her office. The doctor got on her knees to look at Molly and handed her a book and a Beanie Baby toy.

Neither doctor had been able to answer all their questions. They received no guarantees at either hospital that Molly's life could be saved. But Dr. Kurtzberg said she believed the umbilical-cord method was the better approach for Molly. Children seemed to tolerate the treatment better, she said, though she acknowledged that there wasn't much long-term data yet to back her belief.

At the end of January 2001, a month after the diagnosis, the Birminghams took Molly, then 9 months old, to Durham, N.C. Mrs. Birmingham quit her job so should could stay with her daughter. Molly had MRIs, EKGs, chest X-rays, hearing tests and blood draws. She had surgery three times. Tubes were put in her ears to help improve her hearing. Her adenoids, a tissue growth in the nose, were removed. She had a spinal tap to check for infections.

"All of this is such a drop in the bucket compared to what lies ahead," Mrs. Birmingham wrote in her diary. "We are hoping and praying that our decision is the right one for Molly."

All around them in the hospital, children were dying. A little girl with Hurler admitted to the ward a week earlier than Molly died. The little boy in the room next door, to whom Molly had given some sweets, died. A girl with leukemia who liked to ride a tricycle by the nurse's station died. "I am devastated," Mrs. Birmingham wrote in her diary one day. "The pain of losing so many children here is getting to me."

After her transplant, Molly spent 75 days in the hospital, some of that time under a plastic tent when she developed a serious respiratory illness. She had a shunt implanted in her head to drain fluids, and when the shunt became infected she needed emergency surgery to remove it. When she finally left the hospital, she and her mother spent another six months living in an apartment in Durham so they could visit the hospital every day for treatment.

At times, relatives asked the Birminghams if they were sure it was worth it. Wouldn't they have been better off spending that time with Molly at home, given the uncertain future she faced? The Birminghams say they never doubted their choice. By taking action, they gained, if nothing else, a sense of control and hope for better days.

Two years later, there's an increasing pool of data to suggest that umbilical-cord stem-cell transplants offer a good alternative to bone-marrow transplants for some patients. In Minnesota, Dr. Peters says he's more inclined to suggest the technique than he was when he met Molly.

Meanwhile, tests show that Molly's transplant is working. Her enzyme levels are normal. So are her vision and hearing. At age three, Molly can walk, but not as smoothly as most children her age. She has started preschool and attends therapy sessions eight times a week. She can say some words, but she still relies heavily on sign language. When she wants a visitor to help her get on the sofa, she pats the cushion with her hand.

Molly might need more surgery. Even after a transplant, many children with Hurler suffer from a curvature of the spine. If uncorrected, the curve can damage the spinal cord. Many also have dislocated or underdeveloped hips. Without surgery, this condition could render her unable to walk. Older children with the disease often need knee surgery. They frequently need wrist surgery to correct carpal-tunnel syndrome.

The transplant saved Molly's life, but there are more choices ahead.

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