

Unlikely Transplant Gives New Life

Forty-five-year-old Gayle Serls had been living a healthy life: she exercised and ate right and had never really been sick except for an occasional cold. But in the summer of 1995, her life completely changed.

When a lymph node in her neck became enlarged, she made a doctor's appointment. By the time she went to the doctor several days later, lymph nodes in her neck, under her arms, and in her groin area were swollen. After blood work was completed, Serls was told she had acute lymphocytic leukemia (ALL), a cancer of the blood that is diagnosed in approximately 5,000 people a year.

"I was stunned," she recalls of learning the diagnosis. "How could this be happening to me?"

She was admitted to Duke University Hospital and began receiving chemotherapy, which appeared to be working. Although tired and scared, she was hopeful that she would be cured. More tests were administered.

One of the tests indicated that she had a rare type of ALL known as Philadelphia chromosome positive acute lymphocytic leukemia. This type, found in only about 25 percent of ALL cases, cannot be treated with

conventional chemotherapies.

"This obviously wasn't good, but my oncologist Dr. Joseph Moore never said anything negative," Serls says. "He offered options, and I still had hope. We were simply moving from Plan A to Plan B."

The best solution seemed to be a bone marrow transplant. Serls's siblings were tested for a match. Coincidentally, their bone marrow matched one another, but neither matched hers. The search began for an anonymous donor who would be a match, and Serls made arrangements to go to Johns Hopkins Hospital for her transplant.

In 1995, Duke had a prominent children's bone marrow program led by Joanne Kurtzberg, MD, that is still very highly regarded, but no such program for adults. Duke's Adult Bone Marrow Program was formed in 1996 by Nelson Chao, MD.

At Hopkins, Serls was told that she was too old for a bone marrow transplant from an unrelated donor, but she could receive an autologous transplant. With this type of transplant, Serls's own cells would be harvested and treated to kill the cancer cells. Then, her own treated cells would be infused back into her.

Since this type of procedure was new and still being tested, Serls was apprehensive but realized it would buy her time until she could find a better solution. To prepare for the transplant, Serls discontinued her chemotherapy. But before flying to Hopkins for the transplant, she felt a lump on her neck. The cancer had returned and the doctors would not perform the autologous transplant.

"This was even worse than first finding out I had cancer," Serls says. "Now I had no hope and didn't know what would happen."

"THERE ARE SO MANY THINGS

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Gayle Serls

Serls went back to Duke and received large doses of chemotherapy in an attempt to control her disease. She felt very sick and was in pain with colitis, a disease of the colon. In the midst of her treatment, Serls' mother happened to watch a story on the evening news that described how newborn babies' umbilical cord blood could help leukemia patients. The stem cells found in the cord blood replace the cancerous cells after they are destroyed through chemotherapy and radiation.

"Even with approximately seven million donors in the adult donor registry database, it can be hard to find an exact match needed for a bone marrow transplant," Kurtzberg says. It's even harder to find matches for minorities because there are fewer donors. However, with cord blood, only a partial match is needed to be successful, so matches are more likely.

In 1995, cord blood transplants were being performed successfully in children at Duke by Kurtzberg, who performed the world's first cord blood transplant of unrelated children in 1993. "Many researchers did not think the transplants could be done in adults because of the small amount of cord blood each newborn has, compared to that of bone marrow," Kurtzberg says.

But on May 1, 1996, Serls received a cord blood transplant at Duke, becoming one of the first adults in the world to receive this treatment.

Twelve years later, Serls is the longest-surviving adult cord blood transplant patient. "There are so many things I would have missed if this treatment hadn't been



Serls with her children on Thanksgiving Day 1999.

successful: seeing both of my children graduate from college, being able to dance with my son at his wedding, waiting for my first grandchild who is due later this year," she says.

Today, Serls works for Kurtzberg at the Carolinas Cord Blood Bank, a public facility located at Duke that collects cord blood from newborns at local hospitals whose mothers grant permission. The blood is then tested, processed, stored, and listed on the national donor registry until it is needed for a transplant.

"I now have seen the whole process of how the blood is banked and then used," Serls says. "I feel so fortunate to have lived near Duke and could receive treatment here. If I hadn't, I don't think I would be alive today."

Cord blood transplants are now more common with about 3,000 performed annually, approximately a third of those for adults. Duke continues to be a leader in cord blood research for both adults and children. ■



Joanne Kurtzberg, MD