**Hannah Warren Dead: Toddler Who Received Windpipe Made From Stem Cells Dies**



In this April 26, 2013 photo provided by OSF Saint Francis Medical Center in Peoria, Ill., Hannah Warren, 2, lies in bed in a post-op room at the Children's Hospital of Illinois in Peoria, after having received a new windpipe in a landmark transplant operation on April 9, 2013. Hannah was born in South Korea without a windpipe but received a new one made from her own stem cells. (AP Photo/OSF Saint Francis Medical Center, Jim Carlson)

CHICAGO -- A 2-year-old girl who was implanted with a windpipe grown from her own stem cells has died, three months after she became the youngest person to receive the experimental treatment.

Hannah Warren died Saturday at Children's Hospital of Illinois in Peoria, hospital spokeswoman Shelli Dankoff said. Dr. Rick Pearl, one of three surgeons involved in the operation, told The Associated Press that Hannah died of lung complications following a second surgery, but that the new windpipe "worked very well" until the end.

Her family asked for privacy, but expressed their sorrow in a fundraising blog updated Sunday: "She is a pioneer in stem-cell technology and her impact will reach all corners of our beautiful Earth. Her new trachea was performing well, but her lungs went from fairly good, to weak, to poor."

Hannah's treatment was part of an ongoing scientific effort to develop lab-grown tissues and organs. Similar methods have been used to grow bladders, urethras and last year a girl in Sweden got a lab-made vein using her own stem cells and a cadaver vein.

In Hannah's case, the stem cells came from her bone marrow. They were seeded in a lab onto a plastic scaffold, where it took a few days for them to multiply and create a new windpipe, which was implanted April 9.

Hannah was born in South Korea and traveled to Illinois for the surgery. A pediatric surgeon in Peoria had met Hannah's family while on a business trip to South Korea and helped connect them with Dr. Paolo Macchiarini, an Italian surgeon based in Sweden who pioneered the technique.

Hannah's parents, Darryl Warren and Lee Young-mi, had read about Macchiarini's success using stem-cell based tracheas, but they couldn't afford to pay for the operation at his center in Stockholm. Dr. Mark Holterman, the Illinois doctor, helped the family arrange to have the procedure at his hospital with Macchiarini leading the surgical team. Children's Hospital waived the cost.

The hospital is part of OSF Saint Francis Medical Center, a Roman Catholic system that considers the operation part of its mission to provide charity care and a way to champion a type of stem-cell therapy that doesn't involve human embryos, the surgeons said in April. The Catholic church opposes using stem cells derived from human embryos in research or treatment.

Hannah had lived in a Seoul hospital all her short life before flying to the U.S. and her lungs weren't strong, said Pearl, who is surgeon-in-chief at Children's Hospital. She required a second surgery June 11 for a leak in her esophagus. Lung complications followed.