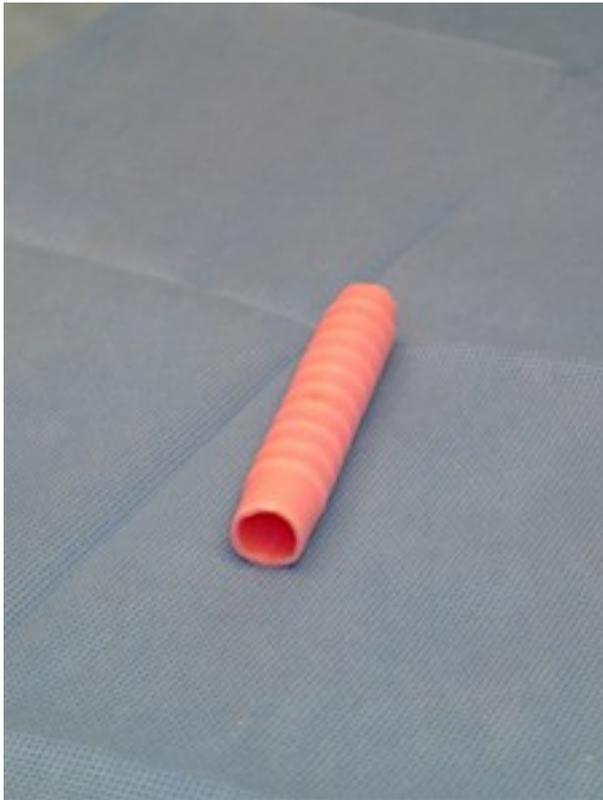


InBreath Scaffold and Bioreactor Used in First U.S. Transplant of a Regenerated Trachea

Globe Newswire

Surgery Successfully Implanted Trachea Into Two-Year-Old



Harvard Bioscience, Inc., a global developer, manufacturer and marketer of a broad range of tools to advance life science research and regenerative medicine, announces that the InBreath tracheal scaffold and bioreactor system manufactured by Harvard Apparatus Regenerative Technology, Inc. (HART), its wholly owned regenerative medicine technology subsidiary, were used in the first successful transplant of a regenerated trachea in the United States. The recipient of the implant, two-year-old Hannah Genevieve Warren, is recovering at Children's Hospital of Illinois, where the surgery was performed on April 9, 2013. The surgery was also the world's first successful pediatric regenerated trachea transplant using a synthetic scaffold.

Hannah was born on August 22, 2010 in Seoul, South Korea with tracheal agenesis (lack of a trachea), and was only able to breathe through a tube inserted in her esophagus that connected to her lungs. Tracheal agenesis is 100 percent fatal, and no child born with the condition has ever lived beyond six years. Hannah had lived in the intensive care unit for two and a half years at Seoul National Hospital before being transported to Illinois for the surgery.

This was the first regenerated trachea transplant surgery using a scaffold manufactured by HART and the implant used in the procedure was grown in one of

HART's InBreath bioreactors. The scaffold and bioreactor were custom-made to Hannah's dimensions. The scaffold was seeded with bone marrow cells taken from the patient and incubated in the bioreactor for two days prior to implant. Because Hannah's own cells were used, her body has accepted the transplant without the use of immunosuppressive (anti-rejection) drugs.



The procedure was performed by a team led by Dr. Paolo Macchiarini of Karolinska University Hospital and Karolinska Institutet in Huddinge, Stockholm and Drs. Mark J. Holterman and Richard Pearl both of Children's Hospital of Illinois. The surgery was approved by the FDA under an Investigational New Drug application made by Dr. Holterman.

Dr. Mark Holterman, Professor of Surgery and Pediatrics at University of Illinois College of Medicine at Peoria, commented: "The success of this pediatric tracheal implantation would have been impossible without the Harvard Bioscience contribution. Their team of engineers applied their talent and experience to solve the difficult technical challenge of applying regenerative medicine principles in a small child."

David Green, President of Harvard Bioscience, commented: "We would like to congratulate Dr. Macchiarini, Dr. Holterman, Dr. Pearl and their colleagues for accomplishing the world's first transplant of a regenerated trachea in a child using a synthetic scaffold and giving Hannah a chance at a normal life. We also wish Hannah a full recovery and extend our best wishes to her family."

This surgery is the seventh successful implant of a regenerated trachea in a human using HART technology. Prior successes included the first ever successful regenerated trachea transplant in 2008, the first successful regenerated trachea transplant using a synthetic scaffold in 2011 and the commencement of the first clinical trial of regenerated tracheas in 2012. HART intends to begin discussions with the FDA and EU regulatory authorities in the near future regarding the clinical pathway necessary to bring this new therapeutic approach to a wider range of patients in need of a trachea transplant.

[Click here to read more about the actual case](#) [1].

About Harvard Bioscience

Harvard Bioscience, or HBIO, is a global developer, manufacturer and marketer of a broad range of specialized products, primarily apparatus and scientific instruments, used to advance life science research and regenerative medicine. HBIO sells its products to thousands of researchers in over 100 countries primarily through its 850 page catalog (and various other specialty catalogs), its website, through distributors, including GE Healthcare, Thermo Fisher Scientific and VWR, and via our field sales organization. HBIO has sales and manufacturing operations in the United States, the United Kingdom, Germany, Sweden and Spain with additional facilities in France and Canada. For more information, please visit www.harvardbioscience.com [2].

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