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World's first stem cell-vein implant

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World's first stem cell vein implant



Singapore: Swedish doctors have for the first time in history been able to pair the groin vein of a dead donor with stem cells from a young girl. The pairing was followed by the successful implant of the healthy vein into the girl, improving both blood flow in her lower body and her quality of life. Details of the operation has been published online on in The Lancet.

The 10-year-old had a rare condition where her portal vein, which is located in the abdomen and tasked with carrying blood from the bowels and other abdominal organs to the liver, was blocked. If this vein is blocked, liver disease, heart failure and certain cancers may develop. The relatively rare condition may also cause weight loss, nausea and pain.

In the procedure, the transplant team from the University of Gothenburg took a segment of the groin vein from a dead donor, and stripped it of all living cells. They then injected stem cells taken from the girl's own bone marrow into the remaining vein. Two weeks after this seeding, the newly grown graft was implanted in the girl.

There were no complications, and the procedure immediately restored normal blood flow. In the year following the operation, the girl grew taller and gained weight and showed no sign of rejecting the new vein even though she is not taking any immunosuppressive drugs.

Dr Michael Olausson, Sahlgrenska University Hospital, Gothenburg, said that, "The new stem cells-derived graft resulted not only in good blood flow rates and normal laboratory test values but also, in strikingly improved quality of life for the patient. The work also establishes the feasibility and safety of a novel paradigm for treatment, in cases of venous insufficiency,

obstructed veins or inadequate autologous [from the patient] veins."