Stem Cell Surgery Leftovers Could Repair Heart Muscle

Scientists have succeeded in extracting vital stem cells from sections of vein removed for heart bypass surgery. Researchers funded by the British Heart Foundation (BHF) found that these stem cells can stimulate new blood vessels to grow, which could potentially help repair damaged heart muscle after a heart attack.

The research, by Paolo Madeddu, Professor of Experimental Cardiovascluar Medicine and his team in the Bristol Heart Institute (BHI) at the University of Bristol, is published in the journal *Circulation*.

Around 20,000 people each year undergo heart bypass surgery. The surgeon normally removes a longer section of vein from the leg than is needed for the bypass. The Bristol team successfully isolated stem cells from leftover veins that patients had agreed to donate.

In tests in mice, the cells proved able to stimulate new blood vessels to grow into injured leg muscles. Professor Madeddu and his team are now beginning to investigate whether the cells can help the heart to recover from a heart attack.

“We can multiply these cells in the lab to make millions more stem cells, which could potentially be stored in a bank and used to treat thousands of patients,” offered Madeddu. Professor Peter Weissberg, Medical Director of the BHF, said, “Repairing a damaged heart is the holy grail for heart patients. The discovery that cells taken from patients' own blood vessels may be able to stimulate new blood vessels to grow in damaged tissues is a very encouraging and important advance. It brings the possibility of 'cell therapy' for damaged hearts one step closer and, importantly, if the chemical messages produced by the cells can be identified, it is possible that drugs could be developed to achieve the same end.”

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