

# A first in Asia in heart treatment research

## Injecting muscle cells into heart may take place of transplants

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A 55-YEAR-OLD man who had a heart attack has had new muscle cells injected into his weakened heart. The cells were grown from his thigh muscle.

The patient is a cook who had a "moderately severe" heart attack. His heart function has improved, he is now back at work and has resumed normal life.

This operation at the National University Hospital (NUH) is believed to be the first in Asia. It was part of a clinical study to test if such treatment could be given safely to humans.

The procedure could serve as an alternative treatment for patients who need a heart transplant, for example, when the heart has been severely weakened by a heart attack. Unlike other cells, heart cells cannot heal themselves.

The Heart Institute's Dr Eugene Sim carried out the open-heart operation here

in May last year. He is a senior consultant at NUH's department of cardiac, thoracic and vascular surgery.

First, a small piece of muscle tissue was taken from the patient's thigh, split into individual cells and grown in the laboratory. Then the immature muscle cells were injected into the man's heart.

Similar operations — about 70 — have been carried out in Europe and the United States. Some were done by leaders in the field, such as the University of Michigan and Cleveland Clinic.

Though still in its early stages, this research is being touted as a way of getting round the dire shortage of donor hearts needed for transplants.

In Singapore, one in every four deaths is caused by heart disease, making it the second-biggest killer after cancer.

The new treatment was made possible through a company here, Cell Transplants Singapore, which can grow pure muscle cells in its lab in Science Park II.

It is planning to set up a cell bank here, to produce about 150 billion cells a month, or enough for 150 heart patients, said Professor Peter Law, who heads its parent company, Cell Transplants International, a pioneer in the

field of cell therapy.

"Every day, 10,000 people die from heart attacks worldwide, yet there are fewer than 5,000 hearts available for transplants a year. That's not even enough for a single day," he told The Straits Times.

"This form of therapy offers hope to people who might otherwise die waiting for a heart," he added.

Singapore-listed health-care specialist Econ Health-care has invested almost \$2 million in Cell Transplants Singapore. Its managing director, Mr Ong Chu Poh, said this cutting-edge technology would be a more cost-effective treatment for heart patients.

The National Heart Centre is also exploring ways to collaborate with the company, said its director of clinical trials, Dr Mak Koon Hou.

Dr Mak, a senior consultant in its cardiology department, said it was in talks with the company to deliver the muscle cells using catheters. This would be less invasive than open-heart surgery.

Taking cells from other people and growing them is also being considered. This would offer people the option of taking cells from a cell bank, just as people receive blood from a blood bank.