

Parkland Memorial Hospital  
and  
The University of Texas Southwestern Medical School

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DALLAS--Medical school surgeons performed their first pancreas transplant at Parkland Hospital here early today, providing a 22-year-old blind diabetic man with a new organ which lowered his blood sugar almost immediately.

Dennis Hammer, 22, of Hubbard, Texas, was recipient of a pancreas taken from a 37-year-old stroke victim who died about 3 a.m. (Wed., Oct. 5) at Parkland.

The operation, which began about 4:30 a.m. and was finished around 9 a.m., was performed by Dr. Richard Dickerman, professor of Surgery, and Dr. William Fry, chairman of the Department of Surgery at Southwestern Medical School, with assistance of Dr. Philip Raskin, assistant professor of Internal Medicine.

Dr. Dickerman said shortly after the operation that Hammer was doing well. The patient previously has been the recipient of a transplanted kidney and was considered a good candidate for the pancreas because he tolerated the first organ well, the surgeon said.

The surgeon said the transplanted pancreas "looked good" and that it lowered the patient's blood sugar "in about 15 minutes."

Although pancreas transplants have been considered desirable for a number of years because of possibilities of correcting diabetes, there have been a number of problems associated with first attempts.

#### Pancreas Background

In the ten years preceding 1976, there were 49 whole-organ pancreas transplants involving 47 patients reported to the American College of Surgeons-National Institutes of Health Transplant Registry. Although the evidence was the transplants corrected the improper metabolism of diabetes, only one patient survived as much as 47 months.

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first add pancreas transplant

Considerable experimentation has been carried out with transplantation or injection of the Islets of Langerhans--those specialized cells of the pancreas which produce insulin.

But none of the previously tried techniques has been particularly successful. Rejection has been a major barrier.

Dickerman and associates have been experimenting with a new surgical method by which only about half of the pancreas is transplanted directly onto an artificially-created cul de sac of the recipient's intestine called a Roux-en Y.

"There have been about four patients done this way in Sweden," says Dr. Dickerman.

"The pancreas is difficult to work with," he explains.

"It leaks and the juice digests surrounding tissue."

The reason is that in addition to secreting insulin and glucagon, which control body sugar metabolism, the pancreas also secretes at least five digestive tract enzymes.

Many of the previous attempts at transplantation involved the whole pancreas, its secretory duct and a piece of bowel around the duct.

But rejection problems involving donor and recipient bowel tissue were nearly always disastrous.

With the new technique used by Dickerman, only about half of the donor pancreas is sewn into the blind alley tube of intestine.

Dr. Dickerman says that extreme care must be taken in the sewing process. Leaks of the pancreatic juice are extremely destructive, eating into tissue and creating sites for infection.

Although the pancreas is normally located under the stomach, the transplanters chose a new spot to place the donor organ where they could tap into the upper bowel and where there would be no leaks into the main stomach cavity. This would allow quick removal of the transplanted organ should problems occur.

In a paper written for the American Journal of Surgery, Dr. Dickerman describes a number of experiments with the new technique using animals.

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Rejection is still a major problem although only part of the pancreas is "foreign tissue" to the recipient. Treatment to suppress rejection includes azathioprine and prednisolone. Dr. Dickerman says that some sort of immunisuppression therapy would be a regular form of postoperative treatment.

For the present, there is cross matching of cells but no tissue matching such as is done in kidney transplants.

The surgeons at Southwestern Medical School had selected a group of four persons as potential recipients of pancreas transplants.

All are diabetics who have had unmatched kidney transplants and who have shown no signs of rejecting them. This may mean, say the surgeons, they have achieved a state of "anergy" or facility for accepting foreign tissues.

There is a second group of diabetics who have just started into kidney failure but who don't need dialysis yet.

Dr. Dickerman emphasized that the transplant techniques are designed only for persons who have "juvenile-onset" diabetes. Prior to 1910, persons with this disease survived an average of only two years after diagnosis. (Adult-onset diabetes, said Dr. Dickerman, is something of a different disease for which a transplant is not considered feasible.)

The discovery of insulin in 1921 greatly increased life expectancy of the diabetic. But as patients lived longer, they experienced problems with kidneys, eyes and blood vessels.

Today, diabetes is the fifth leading cause of death in the United States and diabetic retinopathy is the second leading cause of blindness in this country.

The medical researchers will be extremely interested in the change of metabolism caused by the transplant. They have seen dramatic changes in animal experiments--drastic lowering of elevated blood sugar within an hour.

The pancreatic transplant program at Southwestern Medical School is being funded through a special legislative appropriation of \$100,000 a year for two years.