

medical sciences notes

Gathered at the meeting of the Society of University Surgeons in New York

TRANSPLANTS

RNA perfusion slows rejection

A Swedish surgeon who has been working with the Denver team which has kept three girls alive with transplanted livers reports that in other transplants an RNA or ribonucleic acid has prevented or slowed rejection although it is not clear why.

Dr. Carl G. Groth described research with 20 dogs that received kidneys treated with RNA prepared from their spleens.

Dr. Groth said perfusion of either kidney or liver grafts with RNA solution prior to transplantation prolonged survival of the transplants. Six of the animals lived more than 20 days.

ENDARTERECTOMY

Coronary artery disease treatment

Fatty material obstructing the coronary arteries can now be blown out using jets of carbon dioxide, a team of physicians at the State University of New York Downstate Medical Center in Brooklyn reports.

Called gas endarterectomy, the method has been in use since 1965 on peripheral arteries. It was not used for coronary artery disease until 1967 when it was successful with a 44-year-old mother of three. The next patient also recovered but the following four persons treated died of other causes.

Drs. Phillip N. Sawyer, Martin J. Kaplitt and Sol Sobel, who originated the treatment, now say it can safely be used on coronary arteries that are blocked. As proof of their statement, they described its use on two men in their 40's who continue to improve.

A needle is inserted in the artery, then the high-pressure jet of carbon dioxide is used to free the thick inner layer of fatty material from the arterial wall. Next a cryoprobe is inserted to freeze this core so that it can be removed more easily.

Methods now in use produce a snow-plow effect in which the fatty material is pushed into small arteries leading off the main blood vessels. The new technique takes only about a third of the time of conventional surgery.

PROSTHETICS

Smallest artificial arteries

A cross-country collaboration between two surgeons and a knitting machine manufacturer has produced man-made arteries smaller than any produced before. Their development required a machine that uses the finest knitting material ever known, a dacron filament that is handled by 40 needles per square inch. Tubes as small as a quarter inch in diameter have been woven.

Golaski Laboratories in Philadelphia was the manufacturer, and Dr. Sigmund A. Wesolowski of the State University of New York Downstate Medical Center,

working with Dr. Lester R. Sauvage of Providence Hospital in Seattle, Washington, were the surgeons.

Dr. Wesolowski reports that the new arteries have been successfully implanted in 42 patients whose blood vessels had been blocked.

IMPLANTS

An alternative to transplantation

Dr. Adrian Kantrowitz of Maimonides Hospital and New York's Downstate Medical Center reports that a permanently implantable prosthesis is a choice of treatment for patients who otherwise might die unless they had assistance for their failing hearts. The other is the heart transplant.

Dr. Kantrowitz said it could not be used in babies but that it has proved successful in two adults. The latest mechanical device developed in his laboratory is an auxiliary ventricle consisting of a U-shaped chamber. It is compressed by air from an external drive unit.

DIAGNOSIS

Gastrin antibody produced

A surgeon at Marquette University Medical School in Milwaukee has been successful in producing an antibody to the hormone which stimulates secretion of acid in the stomach. Dr. John F. Stremple reports that the antibody could aid in the diagnosis and study of gastric ulcers, and conceivably could be used in a non-surgical treatment of ulcers.

The hormone gastrin is produced in the antrum of the stomach, around the outlet to the duodenum. It is carried by the blood stream to the fundus, into which the esophagus opens and the site where stomach acid is secreted. Certain tumors of the antrum produce excess gastrin, which in turn leads to ulcers by stimulating excess acid secretion. The gastrin antibody, produced by injecting chickens with synthetic human gastrin, could be used to measure excess gastrin levels and thus to diagnose the tumors. The antibody also can be used to study possible abnormalities in the gastrin level that may be associated with other, commoner forms of ulcer.

Dr. Stremple believes too that gastrin antibody may be of therapeutic value when used to inhibit gastrin activity in ulcer patients. At present gastrin suppression can only be achieved by surgically removing the antrum.

BRAIN FAILURE

Lactic acid indicted

One of the first signs of brain failure leading to death has been discovered in a study of isolated monkey brains. Dr. Robert J. White reports that he and his colleague at the Metropolitan General Hospital in Cleveland have found for the first time that lactic acid is produced in the brain as well as in the muscles. Its presence indicates brain failure.

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