

# Chronic Pancreatitis Pain Relieved by Surgery

*Complete pancreatectomy was followed by the autotransplantation of islet cells in 136 patients.*

BY BETSY BATES  
Los Angeles Bureau

SAN FRANCISCO — A majority of patients with chronic pancreatitis experienced pain relief and many were spared a lifetime of insulin-dependent diabetes when total pancreatectomy was followed by autotransplantation of islet cells in a University of Minnesota study.

Dr. Tun Jie and Dr. David E. Sutherland, both of the University of Minnesota, Minneapolis, reported results of the dual procedure in 136 patients at the annual clinical congress of the American College of Surgeons. Their retrospective clinical review represents the largest collection of cases presented to date.

An estimated 80,000 patients per year suffer pancreatitis, at a cost of \$63.8 million, Dr. Jie said.

In some patients, the disease becomes chronic, resulting in intractable pain, malabsorption, and weight loss despite interim surgical procedures such as dilation of the pancreatic duct. For these patients, pain control often is achieved only by total pancreatectomy, he explained. However, the surgery propels patients into diabetes by removing the gland that makes insulin.

Since 1977, the University of Minnesota has been using various techniques to isolate and process patients' islet of Langerhans cells from their diseased pancreases and transplant them back into the patients following pancreatectomy.

Among 105 patients who completed a pain questionnaire following the dual procedure, 68 reported complete resolution of pain and another 22 said their pain had lessened. Just 15 patients said their pain was unchanged, and none reported worsened pain following pancreatectomy.

Insulin independence was achieved in patients who received the most pancreatic islet cells, with a threshold of 2,000 islet equivalents per kilogram required to prevent the need for regular insulin injections.

Of the 51 patients who did receive 2,000 or more islet cells, 37 required only intermittent insulin or none at all during long-term follow-up.

The investigators found a clear link between previous surgery and islet cell yield. Patients with no previous pancreatic surgery had a mean yield of about 4,000 islet equivalents per kilogram, compared with about 3,700 for patients with a previous pancreatic resection. Patients with a history of a Puestow procedure (lateral pancreaticojejunostomy) had a much lower mean yield, about 1,531 islet equivalents per kilogram.

Because extensive surgery impacts islet cell yield, pancreatectomy and autotransplantation should be performed early in the course of the disease, Dr. Jie recommended.

Over the years, the surgical team re-

fined the procedure, eventually concluding that complete pancreatectomy was preferable to near-total pancreatectomy or distal pancreatectomy, since patients undergoing the latter procedures often required reoperation.

The method of islet processing and infusion also varied, with results representing eight different distribution options. The preferred approach is always a portal infusion, said Dr. Jie, but portal pressure variability sometimes necessitates the use of a kidney capsule or peritoneal infusion.

The mean operating time of 10 hours included 2-4 hours for islet isolation in some cases. (Today, infusion of islet cells is sometimes done post operatively.) The estimated blood loss was 1,500 cc.

The mean length of hospital stay was 22 days; however, some patients remained hospitalized for an extended period only for completion of metabolic studies.

There were two deaths in the series, one due to sepsis following colon perforation and one due to pulmonary embolism on postoperative day 2.

Complications among the 136 patients included 42 infections, 12 bleeding episodes requiring reoperation, and 6 biliary complications.

Pediatric patients included in the series "are the group doing the best," Dr. Jie said.

Patient selection reflected referral patterns to the University of Minnesota and therefore a relatively low number of patients whose chronic pancreatitis was due to alcohol abuse.

"I can tell you that alcoholic patients in our population actually have done the worst. Part of that involves lifestyle [issues] such as trauma unrelated to the surgery itself, and not taking medical advice as they should," he continued.

Dr. Jeffrey B. Matthews, a University of Cincinnati surgeon who has performed numerous pancreatectomy/islet cell autotransplants, raised the troubling issue of patients in intractable visceral pain whose lengthy medical histories fail to document a clear history of pancreatitis.

Dr. Sutherland agreed that these patients pose a dilemma, but said that the surgery is often their only option and noted that they do well.

Another thorny issue is narcotic-induced hyperalgesia syndrome in patients treated for years with powerful painkillers prior to the surgery.

Dr. Sutherland said that although these patients get some relief from pancreatitis pain, simple intestinal gas remains very painful for them.

Malabsorption and maldigestion are common problems following the surgery, and Dr. Sutherland said he increasingly believes colectomy should be performed in conjunction with total pancreatectomy in patients who already have extreme colon dysfunction. ■

# Perioperative Mortality Declines For Pancreatic Cancer Patients

BY BETSY BATES  
Los Angeles Bureau

SAN FRANCISCO — Perioperative mortality associated with pancreatectomy in pancreatic cancer patients is improving, Dr. James T. McPhee reported at a symposium sponsored by the American Society of Clinical Oncology.

In 1998, 7.7% of patients died before leaving the hospital following pancreatectomy for neoplasm. That figure dropped to 4.4% by 2003, according to a retrospective analysis of 6,024 patients tracked through the National Inpatient Sample, a representative database of 994 hospitals in 37 states.

"Pancreatic resection remains the only curative intervention for pancreatic cancer," noted Dr. McPhee, a surgeon at the University of Massachusetts Memorial Medical Center in Worcester. Mortality was considerably lower in hospitals with a high volume of the difficult surgeries, Dr. McPhee said at the symposium.

By 2003, the in-hospital mortality rate at hospitals performing more than 13 pancreatectomies per year was 2%, down from 2.8% in 1998. That compared with 8.3% in 2003 and 14% in 1998 at low-volume hospitals, defined as those performing fewer than four of the procedures a year.

Perioperative mortality at centers that did 4-13 cases per year fell into the midrange between the high- and low-volume hospitals. The overall in-hospital mortality rate for all hospitals over the 6-year period was 5.8%.

A multivariate regression analysis determined that surgical volume was the

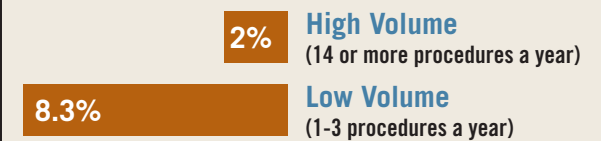
most powerful independent variable linked to mortality. Other negative predictors included advanced age, male gender, and, to a lesser degree, the year of the surgery.

"Could the decrease in mortality over time reflect a paradigm shift whereby a higher percentage of pancreatic resections are being performed at high-volume surgical centers?" Dr. McPhee asked.

A look at total cases and potential confounders "lends some credence," to that theory, he said. Certainly, more cancer patients are undergoing pancreatectomy at high-volume centers: 40% in 2003, compared with 32% in 1998.

Furthermore, high-volume centers do not appear to be doing less complex cas-

## High-Volume Centers Report Lower In-Hospital Mortality After Pancreatectomy



Note: Forty percent of procedures were performed at high-volume centers.

Source: 2003 data, Dr. McPhee

ELSEVIER GLOBAL MEDICAL NEWS

# Declines in Memory, Attention Can Be Signs of Advanced Liver Disease

DENVER — End-stage liver disease was associated with significant deficits in memory, abstract thought, sustained attention, and executive function in a study of 104 adult patients, Tina Meyer, Ph.D., reported in a poster presented at the annual meeting of the American Psychosomatic Society.

"We want to enlighten the surgeons and primary care doctors that cognitive decline can indicate serious liver problems," Dr. Meyer said in an interview.

She and her colleagues in the Transplant Institute at the Henry Ford Health System in Detroit enrolled liver disease patients who met medical and psychosocial criteria for a transplant. About half (51%) were male, 74% were white, and the average age was 54 years. The patients' average score on the mean model for end-stage liver disease (MELD) was 11.3.

The participants completed a cognitive assessment including the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS), which estimates brain function in five different domains: immediate memory, delayed memory, visuospatial abilities, language, and attention.

Overall, scores on the RBANS were below average on the subtests of immediate memory, visuospatial abilities, and attention. After the investigators controlled for education levels, higher MELD scores were significantly associated with lower scores on the immediate memory and delayed memory subtests of RBANS, as well as with lower scores on the Mini-Mental State Exam, the Shipley Institute of Living Scale, and the Trail-Making Test, parts A and B.

—Heidi Splete