# Race, Insurance Status May Affect Laparoscopic Appendectomy Use

BY DOUG BRUNK
*San Diego Bureau*

SAN DIEGO — White patients and those with private insurance are more likely to undergo laparoscopic surgery for appendicitis in New York state, according to results from a large analysis.

"In the case of race, this disparity is largely explained by the fact that minority patients tend to present to hospitals that perform fewer laparoscopic procedures for appendicitis," Dr. Frederic M. Pieracci said at the annual meeting of the Surgical Infection Society.

**White patients were 24% more likely to undergo laparoscopic surgery than were nonwhite patients.**

**DR. PIERACCI**

However, this hospital clustering effect "does not fully explain differences in likelihood of laparoscopic surgery based on insurance status," said Dr. Pieracci of the departments of surgery and public health at Weill Medical College of Cornell University in New York City.

The researchers chose to study race- and insurance-related patterns of appendectomy use "because appendicitis is common, because two surgical options exist, and though the clinical outcome is still debated, it is generally felt that the laparoscopic approach is more technologically advanced," he explained. "Finally, utilization of laparoscopic appendectomy has increased markedly over the last 10 years."

He and his associates analyzed the New York State Statewide Planning and Research Cooperative System (SPARCS) database to locate 26,104 patients who underwent appendectomy for acute appendicitis in 2003 and 2004. Required by state law, SPARCS contains data on all patients discharged from 207 nonfederal, acute care hospitals in New York. Of the 26,104 patients, 9,648 (37%) underwent laparoscopic appendectomy, while 16,456 (63%) underwent open appendectomy.

The mean age of patients was 39 years; 56% were male, 63% were white, and 59% had private insurance. Nearly three-quarters of laparoscopic appendectomies (72%) were performed at a teaching hospital.

After the researchers adjusted for age, gender, insurance status, hospital teaching status, and degree of appendicitis, they found that white patients were 24% more likely to undergo laparoscopic surgery than were nonwhite patients. But no significant difference was observed when the researchers controlled for a sixth variable: presenting to the hospital for laparoscopic appendectomy.

When Dr. Pieracci and his associates controlled for the same six variables in the insurance component of the analysis, they found that privately insured patients were 22% more likely to undergo laparoscopic appendectomy than were those without private insurance.

"The strengths of the study are that it includes recent data, it had nearly complete race information, and we [included] individual hospital use of laparoscopic appendectomy," Dr. Pieracci said. "However, the study is limited in that it provides information for New York state only, it excluded pediatric patients, it did not account for patient comorbidities, and we were unable to capture conversion from laparoscopic to open," he said. ■

# *Elevated Bilirubin Can Signal Perforated or Gangrenous Appendix*

LOS ANGELES — Elevated serum bilirubin on admission may be a tip-off to a perforated appendix, researchers from the University of Southern California, Los Angeles, suggested at the annual Digestive Disease Week.

Dr. Joaquin Estrada and associates in the department of surgery at the university reported that patients with a gangrenous and/or perforated appendix were 2.9 times more likely than were other patients with suspected appendicitis to have a total bilirubin greater than 1 mg/dL upon admission.

The team retrospectively reviewed charts of 41 patients found to have a gangrenous/perforated appendix at surgery and 116 patients admitted for suspected acute appendicitis who were not found to have a perforated or gangrenous appendix. A pathologically normal appendix was found in 13 patients in the latter group.

Among patients with perforation, 23, or 56%, had an elevated bilirubin upon admission compared with 36, or 31%, of those not found to have a perforated or gangrenous appendix.

Factors that did not distinguish the two groups included the duration of symptoms, the total white blood count, elevated temperature, systemic inflammatory response score, and age.

Although larger studies are needed, Dr. Estrada said the findings may assist clinicians "in determining which patients you'd like to get a CT scan on."

A potential mechanism for raising bilirubin, based on animal studies, is a biochemical response to bacteremia, he said.

Patients were not included in the 12-month review of cases if they had liver disease, alcoholism, hemolytic disorders, or biliary disease.

**—Betsy Bates**

# *Hereditary Pancreatitis, Smoking Identified as Deadly Combination*

LOS ANGELES — Patients with hereditary pancreatitis face an 87-fold elevated risk of being diagnosed with pancreatic adenocarcinoma, and if they smoke, the risk is even greater, according to a national cohort study of 78 affected families in France.

Hereditary pancreatitis is caused by a mutation in the cationic trypsinogen gene (PRSS1) that is inherited in an autosomal dominant pattern. Whether inherited or not, chronic pancreatitis is known to be associated with pancreatic cancer.

To determine the incidence and risk factors for pancreatic cancer in patients with the hereditary form of pancreatitis, French investigators, led by Dr. Vinciane Rebours, studied 200 patients representing 6,673 person-years who either carried the gene mutation or had a strong family history of pancreatitis in relatives who did not have other notable risk factors for chronic pancreatitis, such as alcoholism (two or more first-degree relatives or at least three second-degree relatives).

Dr. Rebours, of the gastroenterology service at Beaujon Hospital in Clichy, reported the results at the annual Digestive Disease Week.

At enrollment, the median age of the cohort was 30 years, with a range of 1-84 years; about one-third of the cohort smoked.

Of these patients, 10 were diagnosed with pancreatic adenocarcinoma at a median age of 55 years, with a range of 39-78 years, Dr. Rebours reported.

By comparing the cohort with the general population, the researchers determined that individuals with hereditary pancreatitis had an 87-fold elevated risk of pancreatic cancer. Among all patients with chronic pancreatitis, there is a historically quoted 27-fold increase in pancreatic cancer incidence.

The chance of being diagnosed with pancreatic adenocarcinoma increased with age, for a cumulative risk of 11%, 16%, and 49% for males at ages 50, 60, and 70 years. The cumulative risk for females was 8%, 22%, and 55% at ages 50, 60, and 70 years. Smokers faced even worse odds, with a risk of pancreatic adenocarcinoma at age 75 of 61% for males and 70% for females.

Other important risk factors were diabetes mellitus and the absence of acute pancreatitis, Dr. Rebours said.

**—Betsy Bates**

# IM Residents Found Ill-Equipped For Managing Acute Pancreatitis

BY DOUG BRUNK
*San Diego Bureau*

LOS ANGELES — Only 21% of internal medicine residents feel "very confident" in their ability to manage patients with acute pancreatitis, a survey administered at a large, urban medical center has found.

"We certainly need to do a better job in our training institutions of equipping our residents with the knowledge and making them feel comfortable in diagnosing and managing the complications of acute pancreatitis," Dr. Sameer A. Barkatullah said in an interview during a poster session at the annual Digestive Disease Week.

"The big areas of concern were initial diagnostic work-up and also recognizing the complications of pancreatitis. Those seem to be two big areas where residents didn't know as much as perhaps they should."

In what is thought to be the first study of its kind, Dr. Barkatullah and his associates administered a 23-item questionnaire about acute pancreatitis to 58 internal medicine residents at Rush University Medical Center, Chicago. The multiple-choice questions covered the use of lab tests and radiologic imaging, assessment of severity, use of antibiotics, nutrition, and indication. Nearly two-thirds of the residents (62%) did not recognize hematocrit as the key predictor of acute pancreatitis severity on admission, and 38% could not identify the initial appropriate lab tests to be ordered.

Dr. Barkatullah, a second-year internal medicine resident in the section of gastroenterology and nutrition at Rush University Medical Center, also reported that about 25% of respondents believed that administration of empiric antibiotics for all cases of acute pancreatitis was the standard of care, and 21% thought that the diagnosis was made by identifying inflammation on CT scan.

"In the setting of acute biliary pancreatitis, only 66% identified right upper quadrant ultrasound as the preferred initial imaging modality, and only 59% could identify the appropriate timing and utility of endoscopic retrograde cholangiopancreatography," the researchers wrote in their poster.

Gaps in knowledge about identifying and managing severe pancreatitis were also seen. For example, most of the residents (81%) underestimated the incidence of pancreatic necrosis, and only 36% believed that early feeding decreases morbidity and mortality in cases of necrotizing pancreatitis. Also, only 55% correlated necrotizing pancreatitis with systematic inflammatory response syndrome.

Two-thirds of the residents surveyed (66%) did not identify appropriate surgical interventions for acute pancreatitis, and only 21% reported being "very confident" in managing the condition. ■