Gastric Bypass Helpful in Nonalcoholic Fatty Liver

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CAMBRIDGE, MD. — Gastric bypass surgery can improve liver pathology in patients who have been diagnosed with nonalcoholic fatty liver disease or nonalcoholic steatohepatitis, Dr. Kris V. Kowdley said at a hepatobiliary update sponsored by Johns Hopkins University.

Some researchers have expressed concerns that the dramatic and rapid weight loss associated with gastric bypass surgery could actually exacerbate nonalcoholic fatty liver disease (NAFLD), but that "clearly is not the case," said Dr. Kowdley of the University of Washington, Seattle.

Two recent studies support the beneficial effect of gastroplasty on this spectrum of liver pathology. A 2004 study included 23 patients with nonalcoholic steatohepatitis (NASH) and 12 with simple steatosis. Liver biopsies were obtained from all patients about 2 years after surgery. There were major improvements in lobular steatosis, necroinflammatory changes, and fibrosis; only four patients still fulfilled the criteria for NASH. Improvements were most pronounced in those with metabolic syndrome (Hepatology 2004;39:1647-54).

A 2005 study examined the results of gastric bypass in 16 patients whose mean presurgery weight was 334 pounds. A follow-up liver biopsy was performed about 1 year later. Steatosis had improved in 15 patients, with resolution in 13. Of 15 patients who had inflammation at baseline, 12 showed improvement, and 12 of 14 showed less ballooning. Six of 14 patients with perisinusoidal fibrosis and 6 of 13 with portal fibrosis showed improvement. No patient had worsening of steatosis, inflammation, ballooning, or fibrosis (Obes. Res. 2005;13:1180-6).

NAFLD is part of a histopathologic spectrum of liver injury that ranges from simple steatosis to necroinflammatory changes that may progress to cirrhosis. NASH is associated with increased risk of hepatocellular cancer and liver-related death.

The etiology of these disorders is poorly understood but is thought to be a "two-hit" process beginning with fat accumulation in the liver, most often in the presence of obesity, insulin resistance, or type 2 diabetes. "The 'second hit' is presumed to be any number of processes that contribute to oxidative injury in the liver," Dr. Kowdley said, and could include oxidative stress that interferes with mitochondrial function.

Despite concerns that rapid weight loss following gastric bypass surgery could exacerbate nonalcoholic fatty liver disease, that 'clearly is not the case.'

Most patients with NAFLD are asymptomatic; their disease is discovered when screening tests identify abnormal liver function. Many are obese; studies suggest that about 30% of patients who undergo gastric bypass have the disease. But the pattern of fat deposition is perhaps more important than the patient's weight, Dr. Kowdley said; NAFLD is highly associated with truncal obesity.

On ultrasound, the fatty liver typically appears diffusely hyperechoic in relation to the spleen and kidneys. Computed tomography and magnetic resonance imaging may show focal fat deposits. However, a liver biopsy is the most sensitive and specific means of diagnosis and can differentiate simple steatohepatitis from more advanced stages of the disease in which fibrosis may be present.

There are no approved pharmacologic therapies for NAFLD. Several drugs are under investigation, including metformin and thiazolidinediones.

"Weight loss is one highly recommended method of dealing with NAFLD," Dr. Kowdley said. "Even a modest amount of weight loss, say 20 pounds, significantly decreases the fasting insulin level and improves liver enzymes, and those improvements are maintained as long as weight loss is maintained. A 40% reduction from initial alanine aminotransferase levels can be achieved."

All patients with NAFLD should be counseled to lose weight through a combination of diet and exercise. Those with a body mass index (BMI) greater than 30 kg/m^2 or greater than 27 with additional liver disease risk factors, might benefit from the addition of orlistat (Xenical) or sibutramine (Meridia). ■

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