

# Smoking Increases Risk of Ulcers After Roux-en-Y

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PHILADELPHIA — Perforated marginal ulcers develop in about 1% of patients who undergo laparoscopic Roux-en-Y gastric bypass, about half of whom may have an etiology associated with smoking at the time of the operation, according to a single-center review of more than 3,400 patients.

Early identification of gastric bypass patients who are at high risk of developing a marginal ulcer would help in initiating measures to prevent ulcer formation or perforation, such as prophylaxis with proton pump inhibitors (PPIs), Dr. Edward L. Felix said at the annual meeting of the Society of American Gastrointestinal and Endoscopic Surgeons.

In a review of a prospectively kept database of 3,430 patients who underwent laparoscopic Roux-en-Y gastric bypass during 1999-2007 at one center, Dr. Felix

**Of the 35 patients who had a perforated marginal ulcer, 18 were smoking at the time that they underwent laparoscopic Roux-en-Y gastric bypass.**

found that 35 (1%) developed a perforated marginal ulcer (PMU) during a median follow-up of 4 years. These PMUs occurred a median of 18 months (range 3-70 months) after the operation.

Smoking at the time of the bypass was significantly associated with the development of a PMU.

Of the 35 patients with a PMU, 18 were actively smoking at the time of the gastric bypass.

In comparison, out of 100 age-, sex-, and body mass index-matched control patients from Dr. Felix's series who did not have a PMU, only 10 were smokers.

When an audience member asked if he would offer gastric bypass to a patient who was currently smoking, Dr. Felix said yes.

"We try to get them to stop smoking, but I think that is virtually impossible, and I think it's unfair" to deny the operation to the person who smokes and is obese, he said. "I think it's hard enough to get someone to stop eating, let alone stop eating and stop smoking."

Dr. Felix prescribes PPIs to these patients and warns them that they are at risk of developing an ulcer.

The patients with PMUs had other potential risk factors for an ulcer, including use of nonsteroidal anti-inflammatory drugs (10 cases, 6 of which co-occurred in smokers), previous treatment for a marginal ulcer that had not perforated (4), and use of corticosteroids (2). Some patients had more than one risk factor.

Perforations occurred without any known warning factors or sign in 7 (20%) of the 35 patients with PMUs, comprising only 0.2% of the entire patient series, said Dr. Felix, director of a private bariatric surgery practice in Fresno, Calif.

The investigators tested for *Helicobacter pylori* infection in five patients with a PMU, but all were negative.

Of the 35 patients with a PMU, 18 were treated at Dr. Felix's center immediately after being diagnosed, 6 were initially seen at an outside hospital and referred to Dr. Felix for treatment, and 11 were seen and treated at an outside hospital.

The PMUs were repaired laparoscopically in 15 cases and as open procedures in 20 cases.

All patients who had a PMU also began taking PPIs after reparative surgery.

After a mean follow-up of 29 months (range 3-62 months), 31 patients had no further perforations, whereas 4 patients (all were current smokers) developed a second PMU. No patients died.

Dr. Felix said that he and his colleagues are now investigating whether keeping all patients who have a marginal ulcer on PPIs for life would decrease the rate of perforation.

Further investigation will be necessary to determine "whether long-term treatment with anything except a proton pump inhibitor will prevent perforation in high-risk patients post bypass," he added.

Dr. Felix disclosed receiving ownership interest in Pare Surgical Inc. for consulting services, receiving a research grant and financial benefits from W.L. Gore & Associates Inc. for performing contracted research, and receiving financial benefits from Covidien AG. ■



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