

RYGB tied to higher risk of fracture versus adjustable gastric banding

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By Marilyn Larkin

NEW YORK (Reuters Health) - Roux-en-Y gastric bypass (RYGB) is associated with a higher risk of nonvertebral fractures compared with adjustable gastric banding (AGB), a study suggests.

"The key takeaway from our study is the importance of monitoring long-term skeletal health in patients receiving RYGB," Dr. Elaine Yu of Massachusetts General Hospital in Boston told Reuters Health.

"We were initially concerned that older adults might be uniquely susceptible to RYGB-associated fracture risk, but we instead found that the relative increase in fracture risk after RYGB was similar among younger and older adults," she said by email. "Nevertheless, the rate of fractures after RYGB was higher in older adults (age 65+) due to their inherent higher risk from advanced age."

Dr. Yu and colleagues analyzed Medicare claims data from 2006 to 2014 and identified more than 42,000 severely obese adults (78.5% women) who underwent bariatric surgery. Approximately 30,000 received RYGB and about 13,000 had adjustable gastric banding (AGB). RYGB patients were younger than AGB patients (mean age, 51 versus 55). Comorbidities, medication use and healthcare utilization within the year prior to surgery were similar between the groups.

As reported online May 15 in *JAMA Surgery*, the researchers documented 658 nonvertebral fractures over a mean follow-up of 3.5 years. The fracture incidence rate was 6.6 per 1,000 person years after RYGB and 4.6 after AGB. The increased risk among RYGB persisted after multivariable adjustment, with an adjusted hazard ratio of 1.73.

Site-specific analyses showed an increased fracture risk at the hip (HR, 2.81), wrist (HR, 1.70), and pelvis (HR, 1.48) for those who underwent RYGB. No significant interactions of fracture risk with age, sex, diabetes status, or race were found.

As Dr. Yu noted, adults 65 and older showed similar patterns of fracture risk to younger adults. In subgroup analyses of the older patients, the incidence rate for any nonvertebral fracture was 9.9 per 1,000 person years for RYGB versus 5.3 for AGB. After adjustment, RYGB was associated with a similar increased risk of fractures as in the overall Medicare cohort.

Specifically, older RYGB recipients had an increased risk of any nonvertebral fracture (HR, 1.75), hip fracture (HR, 2.51), and wrist fracture (HR, 1.65) compared with older AGB recipients.

"Despite our findings, gastric bypass is one of the most successful treatments for obesity and leads to myriad health benefits including sustained weight loss and improvements in diabetes and cardiovascular health," Dr. Yu said. "Therefore, our data should not preclude the use of gastric bypass in older adults with severe obesity, but instead indicate that these patients warrant close, long-term follow-up of skeletal health."

Further, she noted, "Patients should be reminded that appropriate calcium and vitamin D supplementation as well as weight-bearing exercise are lifelong requirements to maximize bone health after bariatric surgery. It is possible that high-risk patients might also benefit from osteoporosis medications, and formal clinical trials of these medications are needed to study the safety and efficacy of these treatments."

Dr. Amir Ghaferi of the University of Michigan in Ann Arbor, coauthor of a related editorial, told Reuters Health, "There are known vitamin and mineral deficiencies that can occur after bariatric surgery or other forms of significant weight loss."

Like Dr. Yu, he noted, "To mitigate this risk, we counsel patients to maintain compliance with their vitamin supplementation. Most are fairly compliant in the acute perioperative period, but compliance may wane in the long-term. Ongoing reminders and counseling about the long-term importance of vitamins, among other medical and behavioral modifications, should remain a focus of the bariatric surgery community."

"No intervention is with zero risk and I agree it is important to appropriately counsel patients about those risks. However, we must ensure that we do not over-emphasize risks and under-emphasize the benefits," he said.

Dr. Ghaferi pointed out that "the comparator group of adjustable gastric bands is no longer relevant (because) the majority of patients undergo sleeve gastrectomy now."

Further, he added, "A significant limitation to understanding the clinical the impact of the study is the use of administrative data to assess such a specific clinical issue. Administrative data limits the ability to know whether patients were on appropriate supplementation, their compliance with that supplementation, and what their laboratory values (i.e., calcium and vitamin D) levels were."

"Therefore," he concluded, "while we know that patients post-bariatric surgery are susceptible to osteoporosis, it is unclear from the data presented what the root cause or potential mitigating factors could be."

SOURCE: <http://bit.ly/2VYM9QB> and <http://bit.ly/2VR5X88>

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