Bariatric surgery increases risk of fractures

June 11 2009

After weight loss surgery, people have nearly twice the expected risk of breaking a bone and an even higher risk of a foot or hand fracture, a new study has found.

"This finding is unexpected," said study co-author Jackie Clowes, MD, PhD, assistant professor of medicine at Mayo Clinic, Rochester, Minn. "The established opinion is that obesity protects against osteoporosis and, therefore, fractures."

Past research shows that bariatric surgery results in an increased bone turnover, the rate of bone breakdown and bone formation. However, it is not clear whether this change is clinically relevant. Clowes and her group suspected that the accelerated bone turnover after weight loss surgery would increase fracture risk.

The researchers therefore reviewed the medical records of patients who had bariatric surgery to treat medically complicated obesity, performed at Mayo Clinic between 1985 and 2004, and looked at data, including postoperative fractures. So far, the authors have analyzed data for 97 of the 292 patients whose records are available.

Of the 97 patients, 86 are women, and their average age was 44 years. Ninety percent of the patients had the most common type of weight loss surgery—gastric bypass—and the other patients had either vertical banded gastroplasty (also called gastric band surgery) or biliopancreatic diversion. The average length of follow-up was 7 years.

After bariatric surgery, 21 patients suffered one or more fractures, for a total of 31 fractures.

Compared with the fracture rate expected in an age- and sex-matched population in southeastern Minnesota, the patients who underwent bariatric surgery were 1.8 times likelier to have a first fracture at any site of the body. Fractures were especially common at the hand and foot, with the risk of hand fracture being more than three times greater than average, and foot fracture risk nearly four times greater.

"It is currently unclear why fractures are more common after bariatric surgery, especially at the hand and foot," Clowes said. "Although aggressive calcium and vitamin D supplementation after surgery may well help, it may still be insufficient to prevent the increased risk of fracture."

She added that further studies are needed to identify the potential mechanisms and risk factors for increased fracture risk after bariatric surgery. Subject to future funding, the authors plan to continue analyzing the data for the remaining patients. This study received funding from Mayo Clinic's Department of Medicine.

Source: The Endocrine Society (news : web)