Some Bariatric Surgery Patients Develop Wernicke's Encephalopathy

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WINSTON-SALEM, N.C. -- For a few patients undergoing, weight-loss surgery, a thiamine deficiency may cause memory loss and other neurologic problems, easily correctable when recognized.

WINSTON-SALEM, N.C., March 12 -- Weight-loss surgery may also cause memory loss and other serious neurologic problems in a small number of patients.

At least 32 cases of Wernicke's encephalopathy -- a syndrome caused by thiamine deficiency and marked by acute mental confusion, apathy, drowsiness, ataxia, and oculomotor abnormalities -- have been reported in the medical literature in patients who underwent bariatric surgery, found Sonal Singh, M.D., of Wake-Forest University here, and Abhay Kumar, M.D., of the University of Iowa in Iowa City.

A few of the patients suffered persistent memory loss and motor problems, the investigators reported in the March 13 issue of Neurology.

Werrnicke's encephalopathy, first described in 1881 by Polish neurologist Carl Wernicke, M.D., is frequently seen among alcoholics, those with nutritional deficiency states, AIDS patients, and people who are on long-term hemodialysis, but its incidence in bariatric surgery patients had been unknown.

"The purpose of our study was to get at the clinical features of the syndrome, the characteristics, and how it could be prevented," said Dr. Singh. "We were not in a position to say anything about the incidence; there are no studies of how common it is. Prospective long-term studies will really tell us whether this is rare."

But a leading practitioner of weight-reduction surgery said that the Wernicke's encephalopathy is at most a rare complication.

"We have not seen this in any of our patients, and it's seen in very, very few [cases]; I think it's overrated," said Scott A. Shikora, M.D., a bariatric surgeon at Tufts-New England Medical Center in Boston.

"It's seen in the setting of intractable vomiting over a period of time, where the patient actually develops a thiamine deficiency, and the teaching in most of our courses and programs is that if you have a patient who comes to the emergency room with intractable vomiting, think of giving them thiamine," Dr. Shikora said. "Usually that's the solution."

The classic triad of Wernicke's encephalopathy -- confusion, ataxia, and nystagmus -- was present in more than half of the patients in the review. But in acute care settings, only about 20% of patients with the condition presented with all three signs, commented neurologist Michael DeGeorgia, M.D., of the Cleveland Clinic, in an interview. Dr. DeGeorgia was not involved in the bariatric surgery research.

"The tragedy of this disease is that it can be very serious, and you can even die from this," said Dr. DeGeorgia. "But if it's caught early it can be completely cured. The trick is to recognize it, and what has happened in the past is that people have failed to recognize it, because it's associated with alcoholism. It's underrecognized in post-gastrectomy patients, or cancer patients, or anybody who is malnourished."
In their review, Dr. Singh and Dr. Kumar performed a systematic review medical and scientific database looking for case reports, case series, or cohort studies of Wernicke's encephalopathy occurring after bariatric surgery.

They identified 32 cases, 27 in women and five in men, a sex distribution that closely matches the female-to-male ratio for patients who undergo bariatric surgery, the authors noted. The patients ranged in age from 23 to 55 years.

The cases occurred any from two weeks to 18 months after the procedure, most occurring from four to 12 weeks after surgery. The procedures included vertical banded gastroplasty, Roux-en-Y gastric bypass, elective gastric partitioning, and gastric plication.

A majority of the patients (25 of the 32) had vomiting as a risk factor, and 21 had the classic Wernicke's triad of confusion, ataxia, and nystagmus. Other symptoms seen in these patients included optic neuropathy, papilledema, deafness, seizures, asterixis (bilateral flapping tremor of the hands and wrist, weakness, and sensory and motor neuropathies.

MRI scans of the brains of these patients commonly revealed hyperintense signals in the dorsal medial thalamic nucleus periaqueductal gray area, third and fourth ventricles, and caudate nucleus and putamen. Fifteen of the patients, however, had normal radiographic findings (CT or MRI).

Serum thiamine levels were measured in six patients, and were low in four, and normal in two.

"Among patients who underwent endoscopy, findings included gastric outlet obstruction, stenosis, esophagitis, jejunal erosions, and stomal adhesions, as well as no abnormalities in a few cases," the authors wrote.

Most of the reports did not include information about whether patients took thiamine supplements, A few of the patients developed Wernicke's encephalopathy despite taking thiamine supplements.

Most of the patients made a full recovery after receiving parenteral thiamine, although some had residual neurologic problems. The defects included Korsakoff psychosis, persistent amnestic state with antegrade amnesia and retrograde memory loss, memory problems, persistent ataxia, nystagmus, and neuropathy.

"Thiamine deficiency is a pretty much preventable problem by just thinking that the patient is thiamine deficient, and treating it," Dr. Shikora said. "But like a lot of other things with gastric bypass, there's a relatively low incidence of it, yet everybody thinks it happens all the time."

Funding sources for the study were not listed. Dr. Singh and Dr. Kumar reported that they had no conflicts of interest.

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