

# Abstract

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## Wernicke encephalopathy after obesity surgery: a systematic review

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**OBJECTIVE:** To characterize the clinical features, risk factors, radiographic findings, and prognosis of Wernicke encephalopathy after bariatric surgery.

**METHODS:** We performed a systematic review of MEDLINE, Embase, Ovid, ISI (Science Citation Index), and Google Scholar for case reports, case series, or cohort studies of Wernicke encephalopathy after bariatric surgery.

**RESULTS:** We found 32 cases (27 of whom were women) reported, from 2 weeks to 18 months after the procedure. Most patients had vomiting as a risk factor ( $n = 25$ ) and presented with the triad of Wernicke encephalopathy (confusion, ataxia, and nystagmus;  $n = 21$ ). Optic neuropathy, papilledema, deafness, seizures, asterixis, weakness, and sensory and motor neuropathy were also reported. Characteristic radiographic findings were hyperintense signals in the periaqueductal gray area and dorsal medial nucleus of the thalamus; radiographs were normal in 15 patients. One series from Brazil reported 4 patients (among 50 patients) with Wernicke encephalopathy; all presented with vomiting and concomitant peripheral neuropathy at a median of 2.5 months (1.5 to 3 months) after bariatric surgery. Another series identified 2 of 23 patients (both women) with Wernicke encephalopathy after bariatric surgery.

**CONCLUSION:** Wernicke encephalopathy after bariatric surgery usually occurs between 4 and 12 weeks postoperatively, especially in young women with vomiting. Atypical neurologic features are common. The diagnosis is mainly clinical, because radiographic findings are normal in some patients. Prospective studies to determine the prevalence of this problem and protocols for preventive thiamine supplementation need evaluation.

