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Lesson of the Week

Wernicke's encephalopathy after vertical banded gastroplasty for morbid obesity

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Nutritional supplementation after surgery for morbid obesity is essential to prevent neurological sequelae

Thiamine deficiency is known to lead to certain neurological sequelae including Wernicke-Korsakoff encephalopathy. Signs attributable to this condition include ataxia, ophthalmoplegia, nystagmus, and mental confusion. Recognised predisposing conditions include alcoholism, gastric carcinoma, pyloric obstruction, hyperemesis gravidarum, and prolonged intravenous feeding.¹ We have recently encountered two cases of Wernicke's encephalopathy after vertical banded gastroplasty for morbid obesity. Other neurological sequelae are recognised after vertical banded gastroplasty, including Guillain-Barré syndrome, psychosis, and pseudoathetosis, but the causes of these are multifactorial.²

Case reports

CASE 1

A 55 year old woman weighing 171.4 kg underwent a vertical banded gastroplasty on 16 March 1992. Her medical history included treated hypothyroidism, psoriasis, and mild, late onset asthma. After surgery she lost about 25 kg within six weeks and was tolerating a semiliquid diet. Two months after the procedure, however, she developed frequent vomiting of both solids and liquids. Gastroscopy showed a normal gastric outlet with no evidence of stasis; endoscopic dilatation of the pouch was performed. There was a little improvement, but she became clinically depressed. Four months after vertical banded gastroplasty she developed features of disorientation, ataxia of gait, and blurring of vision with diplopia. Detailed examination showed, in addition, severe vertical and horizontal nystagmus and depression of the deep tendon reflexes. These findings were consistent with a Wernicke's encephalopathy and responded rapidly to intravenous vitamin supplementation.

CASE 2

A 40 year old woman weighing 97.4 kg underwent a vertical banded gastroplasty for morbid obesity in July 1986. She had an undue amount of postoperative vomiting, and at three month follow up the vomiting had persisted and she had lost 30 kg. Subsequent gastroscopy showed pouch outlet stenosis and a degree of oesophagitis. A further laparotomy was performed which showed ulceration in relation to the band, which was removed. About five months after surgery, after initially satisfactory postoperative progress, she became confused, disorientated, and developed incoordination. She was also found to have a complete

horizontal conjugate gaze palsy and nystagmus, which in the context of the clinical setting suggested a diagnosis of Wernicke's encephalopathy. Computed tomography and examination of the cerebrospinal fluid showed nothing abnormal. The clinical signs responded to intravenous parenterovite.

Discussion

Gastric partitioning surgery can lead to a state of starvation: "starvation in the midst of plenty"³ that can lead to serious protein-calorie and vitamin deficiency that may in turn cause serious neurological, as well as other, sequelae. Since increasing numbers of people are undergoing surgery for morbid obesity—typically, vertical banded gastroplasty—we are likely to see significantly more neurological complications, such as Wernicke's encephalopathy, which occurs as a result of thiamine deficiency and can be prevented by supplementation. Starvation is a complex process and we should not merely assume that replacing one vitamin is adequate. All patients should be given multivitamin and mineral supplements after gastroplasty. If repeated vomiting occurs nutritional assessment and a treatment regimen should be instigated. Treatment of vomiting necessitates intravenous glucose, which may increase the demand for thiamine.

Some authors have suggested that Wernicke's encephalopathy may be preventable by giving enteral⁴ or parenteral nutrition⁵ immediately after the gastroplasty, to ensure adequate thiamine supplementation. We would endorse this view and further emphasise the importance of all patients taking multivitamin supplements after vertical banded gastroplasty.

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