Bariatric surgery for idiopathic intracranial hypertension

Bariatric surgery (BS) has been suggested as idiopathic intracranial hypertension treatment (IIH) associated with morbid obesity.

Reviews

2017

A systematic review and meta-analyses of surgical and non-surgical studies in 2017:

Bariatric surgery achieved 100% papilloedema resolution and a reduction in headache symptoms in 90.2%. Non-surgical methods offered improvement in papilloedema in 66.7%, visual field defects in 75.4% and headache symptoms in 23.2%. Surgical BMI decrease was 17.5 vs. 4.2 for non-surgical methods.

Whilst both bariatric surgery and non-surgical weight loss offer significant beneficial effects on IIH symptomatology, future studies should address the lack of prospective and randomised trials to establish the optimal role for these interventions [1)].

2015

A comprehensive literature search was conducted using the following databases: MEDLINE, EMBASE, PubMed, Scopus, Web of Sciences, and the Cochrane Library. No restrictions were placed on these searches, including the date of publication.

A total of 85 publications were identified, and after initial appraisal, 17 were included in the final review. Overall improvement in symptoms of IIH after bariatric surgery was observed in 60 of the 65 patients observed (92%). Postoperative lumbar puncture opening pressure was shown to decrease by an average of 18.9 cmH2O in the 12 patients who had this recorded.

Bariatric surgery for weight loss is associated with alleviation of IIH symptoms and a reduction in intracranial pressure. Furthermore, an improvement was observed in patients where conventional treatments, including neurosurgery, were ineffective. Further prospective randomized studies with control groups and a larger number of participants are lacking within the published studies to date. There is, therefore, a strong rationale for the use of bariatric surgery in individuals with IIH for the effective treatment of this condition, as well as the efficacy of weight loss for various other obesity co-morbidities [2)].

2011

Fridley et al. published in 2011 a review:

Eleven relevant publications (including 6 individual case reports) were found, reporting on a total of 62 patients. The Roux-en-Y gastric bypass was the most common bariatric procedure performed. Fifty-six (92%) of 61 patients with recorded postoperative clinical history had resolution of their

presenting IIH symptoms following bariatric surgery. Thirty-four (97%) of 35 patients who had undergone pre- and postoperative funduscopy were found to have resolution of papilledema postoperatively. Eleven (92%) of 12 patients who had undergone pre- and postoperative formal visual field testing had complete or nearly complete resolution of visual field deficits, and the remaining patient had stabilization of previously progressive vision loss. In 13 patients both pre- and postoperative CSF pressures were recorded, with an average postoperative pressure decrease of 254 mm H(2)O. Changes in weight loss and body mass index varied depending on the reported postoperative follow-up interval.

The published Class IV evidence suggests that bariatric surgery may be an effective treatment for IIH in obese patients, both in terms of symptom resolution and visual outcome. Prospective, controlled studies are necessary for better elucidation of its role [3].

In a study Roth et al. describe a high rate of overdrainage (OD) seen in patients following shunts and BS.

Patients with IIH that undergo shunt surgery and BS (not concomitantly) may suffer from OD symptoms, necessitating multiple shunt revisions, and valve upgrades. Despite BS being a valid primary treatment for some patients with IIH, among shunted patients, BS may not lead to resolution of IIH-related symptoms and patients may remain shunt-dependent [4].

Hoang et al. present a report of 3 patients with adolescent-onset IIH that was treated at the Duke University in whom bariatric surgery was pursued successfully. The patients had previously undergone CSF shunting at ages 12, 15, and 23 years. They were shunt dependent for a collective average of 3.3 years prior to bariatriwc surgery. All patients reported “low-pressure” or postural headaches after bariatric surgery that correlated with dramatic reduction in their weight. Two of the 3 patients had their shunts removed and continued to be shunt free 1.5 years later at last follow-up; the third patient remained shunt dependent with the pressure set at 200 mm H2O. Given the significant complications inherent to multiple shunt revisions, earlier intervention for weight loss, including bariatric surgery, in these patients might have prevented complications and the associated Healthcare burden. The authors recommend a multidisciplinary approach for IIH treatment with early consideration for weight loss interventions in select patients [5].

Findings support the notion that caloric restriction represents an important mechanism to explain the very early anti-diabetic effects observed after bariatric surgery. However, exclusion of the upper gastrointestinal tract also provides further metabolic improvements, possibly mediated by gastrointestinal hormonal responses and altered postprandial glucose absorption [6].

Case reports

2017

A 46-year-old woman presented at our service with idiopathic intracranial hypertension that had been diagnosed two years earlier, which had led to chronic refractory headache and an estimated 30% loss of visual acuity, associated with bilateral papilledema. She presented partial improvement of the headache with acetazolamide, but the visual loss persisted. Her intracranial pressure was 34 cmH2O. She presented a body mass index of 39.5 kg/m2, also associated with high blood pressure. Computed tomography of the cranium with endovenous contrast did not show any abnormalities. She underwent Roux-en-Y gastric bypass with uneventful postoperative evolution. One month following surgery, she presented a 24% excess weight loss. An ophthalmological examination revealed absence of visual loss and remission of the papilledema. There were no new episodes of headache following the surgery. There was also complete resolution of high blood pressure. The intracranial pressure decreased to 24 cmH2O, six months after the surgery [7)].

1)
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6)
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7)
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