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Original article

Unexplained abdominal pain in morbidly obese patients after bariatric surgery

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Abstract

Background: There is an overall complication rate of 6.3%–10% after bariatric surgery. After ruling out anatomic/physical causes, there is a substantial group of patients who develop unexplained postsurgical abdominal pain.

Objectives: To inventory the prevalence of unexplained abdominal pain after laparoscopic Roux-en-Y gastric bypass or laparoscopic sleeve gastrectomy and to determine predictive factors for unexplained abdominal pain.

Setting: Obesity Center Amsterdam, Amsterdam, the Netherlands.

Methods: A retrospective study in a prospective database was performed. Baseline characteristics and postoperative course were evaluated.

Results: A total of 1788 patients underwent laparoscopic Roux-en-Y gastric bypass or laparoscopic sleeve gastrectomy between November 2007 and April 2015. The average follow-up consisted of 33.5 months, without loss to follow-up. Abdominal pain was presented in 387 patients (21.6%). The study population consisted of 337 women (87.1%) and 50 men (12.9%); the mean age was 43.3 years (standard deviation 10.1) and the median preoperative body mass index was 43.7 kg/m². An explanation for abdominal pain was found in 246 of 387 patients (63.6%), whereas no explanation was found in 133 patients (34.4%). Revisional surgery was a significant predictor for unexplained pain (odds ratio 1.7; confidence interval 1.0–2.8; $P = 0.037$).

Conclusion: A total of 133 patients (7.4%) experienced unexplained abdominal pain after laparoscopic bariatric surgery. Revisional surgery was found to be a significant predictive factor for this outcome. Present study results suggest that postoperative unexplained abdominal pain is a significant morbidity and should be part of the informed consent. More research is needed regarding further diagnosis and management and treatment. (Surg Obes Relat Dis 2017;▮:00–00.)

Keywords: Unexplained abdominal pain; Bariatric surgery; Postoperative complication

Obesity, which is defined as a body mass index (BMI) >30 kg/m^2, has become a serious, global health problem. In 2014, the World Health Organization estimated that 600 million people suffered from obesity [1]. Obesity is a major risk factor for co-morbidities such as dyslipidemia, obstructive sleep apnea, and type 2 diabetes [2]. Conservative management is the first step in treating obesity, but with disappointing long-term results. This justifies more invasive

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treatment like surgery. Diet and physical activity are often used as the first methods to lose weight due to their low impact on physical integrity. However, these therapies often fail in the long term [3]. When morbid obesity (BMI $\geq$40 kg/m^2 or BMI $\geq$35 kg/m^2 including obesity related co-morbidities) is concerned, and conservative therapies have failed, bariatric surgery can be considered.

Bariatric surgery has shown to be the only effective treatment for morbidly obese patients in the long term [4–8]. There are different bariatric surgical procedures, of which the 2 most performed are the laparoscopic Roux-en-Y gastric bypass (LRYGB) and the laparoscopic sleeve gastrectomy (LSG). Surgical treatment for morbid obesity is gaining popularity worldwide [8]. Although bariatric surgery has great success concerning weight loss and improvement of co-morbidities, there is an overall complication rate of 10% after a LRYGB and 6.3% after a LSG [9]. Examples of severe complications within 30 days include staple line bleeding, anastomotic leakage, and pulmonary embolism [10,11]. Complications and side effects, such as internal herniation, stenosis, marginal ulceration, and vitamin deficiencies are seen in the long-term. These complications often need reintervention, either nonsurgical or surgical, sometimes accompanied by readmission [12].

Postoperative abdominal pain is an important clinical parameter of the majority of the previously mentioned complications, and usually decreases when the underlying cause has been treated. However, a percentage of patients suffers from unexplained abdominal pain after surgery. These patients might be submitted to several types of noninvasive and invasive diagnostics, such as ultrasound, computed tomography, esophagogastroduodenoscopy, and some might even undergo diagnostic laparoscopy without finding any cause and subsequent treatment for their pain.

Only a few cases of patients with unexplained abdominal pain after laparoscopic bariatric surgery have been described in the literature [13,14]. However, it is hypothesized that the incidence of unexplained abdominal pain after bariatric surgery is under reported and consequently is not recognized as serious complication. The aim of this study was to inventory the prevalence of unexplained abdominal pain after bariatric surgery and to evaluate predictive factors for this outcome. The results of the present study provide knowledge regarding this important topic and consequently improve patients' education concerning complication risks.

Methods

Study design and population

This is a retrospective study of a database with morbidly obese patients who underwent bariatric surgery between November 2007 and April 2015 in the Obesity Centre Amsterdam. Patients who underwent a primary LRYGB, primary LSG, or revisional surgery from laparoscopic adjustable gastric banding into LRYGB/LSG were included.

Data collection

The data were collected from electronic medical records and were anonymously entered in a database. The Institutional Medical Ethics Committee gave approval for this study, whereas informed consent was not obligated for this retrospective study.

Baseline characteristics included age; sex; preoperative BMI; and type and date of bariatric surgery and co-morbidities, such as hypertension, diabetes, obstructive sleep apnea, and dyslipidemia. The specific variables collected were presence of pain; follow-up; complication within 30 days; specification pain (quadrants and character of pain, intermittent, or continuous pain); nausea; defecation; anorexia; passage; readmission; nonsurgical diagnostics (ultrasound, abdominal x-ray, upper gastrointestinal tract radiography, esophagogastroduodenoscopy, computed tomography); diagnostic surgery; cause of pain; recovery after explanation and number of emergency room presentations and readmissions to the hospital.

The Clavien-Dindo Classification of Surgical Complications was used to describe the severity of the complication in patients with abdominal pain [11,12]. This classification provides the level of (invasive) treatment due to a complication.

Postoperative abdominal pain was defined as patient reported pain that was documented in patient medical files. Furthermore, unexplained abdominal pain was defined as abdominal pain in patients, who underwent all indicated types of radiologic diagnostics or even diagnostic surgery without finding any cause for their pain during follow-up.

A random check of 20 patients was performed within the group of patients with unexplained pain to evaluate if these patients experienced dumping. Patient files were evaluated for colic pain, diarrhea, nausea, cramps, and bloating.

Surgical procedures

The LRYGB and LSG were performed according to a previously described method [15]. Briefly, the LRYGB was performed by creating a 30-mL pouch, connected to the jejunum through a linear stapled gastrojejunostomy followed by a side-to-side jejuno-jejunostomy bypassing 120–150 cm of the small intestine. A LSG was performed by removing approximately 85% of the stomach alongside the smaller curvature using a 34-French bougie as guide, starting 4 cm from the pylorus. In case of revisional surgery, the gastric band was removed before LRYGB or LSG in the majority as a 1-step procedure.