Chronic Abdominal Pain Prevalence in Patients Undergoing the Bariatric Surgery With Positive History of *H. pylori*

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Abstract- Obesity/bariatric surgery is rising as the most effective treatment for obesity. In previous studies, the history of Helicobacter pylori as the main cause of chronic abdominal pain in patients undergoing bariatric surgery has not been discussed. In this study, we determine in a set of patients how much of the number of people with positive H. pylori before the operation in one year later suffered from chronic abdominal pain. A retrospective study was conducted on 320 patients undergoing bariatric surgery. Data were collected by interviewing and referring to the medical records of patients. Of 320 patients, 125 were H. pylori-positive, and from these numbers, 43 had chronic abdominal pain (34.4%). Although in previous studies of bariatric surgery, the history of H. pylori has not been identified as the main cause of chronic abdominal pain after surgery. However, according to the available evidence in this study, with a prevalence of more than one-third of chronic abdominal pain in one year after surgery in patients with a history of preoperative H. pylori, pylori can be a potential cause of postoperative chronic pain.

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Keywords: Chronic abdominal pain; Bariatric surgery; H. pylori

Introduction

Obesity is a major public health problem, and it is considered an epidemic problem in different societies (1,2). Based on WHO, in 2008, 200 million men and 300 million women were classified as obese (3). This disease has increased in recent decades and doubled between 1980 and 2014 (4). Obesity can lead to serious problems, such as type II diabetes, high blood pressure, cardiovascular and pulmonary diseases, and musculoskeletal disorders. These disorders can lead to a high cost of treatment for patients and also health systems (3). Obesity treatments include nutritional, behavioral, exercise, medication, endoscopic or surgical procedures (5,6). Today, the advent of bariatric surgeries in obese patients has been making a revolution, and it is rising as the most effective and durable treatment. The Roux en Y method and Sleeve gastrectomy are the most commonly used methods for the treatment of obesity around the world (7).

Continuous or recurrent postoperative pain can occur after many surgical procedures, including bariatric surgeries, with varying intensity and manifestations (8). Abdominal pain is one of the most common and most annoying problems Bypass surgeries (9) and can affect the outcome of Roux en Y (10). Patients' remarks about the abdominal pain after this procedure are being investigated for its potential causes, and the cause remains unknown about 15% of patients (11).

H. pylori are one of the most common human

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infections, and it is estimated that more than half of the world's population are infected with that (12). The prevalence of infection in obese patients is still under discussion (13,14). The incidence of H. pylori infection in bariatric patients is reported to be between 24% and 67% (15). Positive H. Pylori has been reported to have been associated with an increase in complications in patients under Roux en Y (16). Evidence suggests that H. pylori infection can interfere with the treatment of anastomosis and cause complications (17). For patients undergoing bariatric surgery, numerous papers have discussed the importance of detecting and eradicating H. pylori before the surgery (18).

H. pylori infection has not been fully described in previous studies as a potential cause of pain after bariatric surgery. The purpose of this study was to determine the relationship between preoperative positive H. pylori infection and chronic post-operative pain in patients undergoing bariatric surgery.

Materials and Methods

The present study examined patients who underwent bariatric surgery during the four years of follow up in Imam Reza, Bentolhoda and Sina hospitals in Mashhad. Patients' information included age, sex, height, weight, BMI, and their history of H. pylori by interviews during the visit and by obtaining consent from them by referring to their files and from patients with chronic abdominal pain in one year after the operation was asked.

Results

A total of 320 patients with gender segregation of 77 males and 243 females were examined in a retrospective study. Of these patients, 28 males and 97 females had positive H. pylori, with a total of 39.1% of patients with H. pylori (Table 1).

The mean age and BMI of the population were 23.31±12.29 and 46.68±8.04, respectively (Table 2).

The results showed that 43 patients (34.4%) had postoperative pain in the total number of people with H. pylori. In addition, there were 42 (21.5%) postoperative pain among people who did not have H. Pylori (Table 3).

Table 1. Percentage of people with Helicobacter pylori based on the gender

Gender		H. pylori		Total
		Positive	Negative	
Man	Number	28	49	77
	Percentage	36.4%	63.6%	100.0%
Woman	Number	97	146	243
	Percentage	39.9%	60.1%	100.0%
Total	Number	125	195	320
	Percentage	39.1%	60.9%	100.0%

Table 2. Descriptive statistics of variables such as weight, height, BMI, and age

Variables	Numbers	Minimum	Maximum	Mean	Std. Deviation
Weight	320	81.00	201.00	122.19	23.31
Height	320	141.00	197.00	165.46	9.87
BMI	309	35.00	74.00	46.68	8.04
Age	320	22	57	37.98	10.45

Table 3. Percentage of people with Helicobacter pylori separated based on the pain situation

H. pylori		Pain		Total
		Having the pain	Don’t have the pain	
Positive	Number	43	82	125
	Percentage	34.4%	65.6%	100.0%
Negative	Number	42	153	195
	Percentage	21.5%	78.5%	100.0%
Total	Number	65	235	300
	Percentage	21.7%	78.3%	100.0%

Discussion

H. pylori is a gram-negative bacterium and are the most common chronic bacterial infection in humans, often found in the upper gastrointestinal tract, and it is estimated that more than half of the world's population is infected, and 80% of the infected are asymptomatic (4,19). It is estimated that 30-40% of the USA population may be infected with H. pylori (14). Recent studies indicate that the H. pylori outbreak in different countries varies from a minimum prevalence of 5-10% in Western Europe to the United States and high prevalence in developing countries (20).

It is stated that H. pylori are the main etiologic agent of advanced gastritis, peptic ulcer, and malignant lesions of the stomach (14). The relationship between obesity and H. pylori infection is controversial (2). A systematic study shows that the prevalence of H. pylori in obese patients undergoing bariatric surgery varies from 6.9% to 61.3%, and the incidence of the infection from this pathogen varies from 30% to 90% (8,21).

For patients undergoing obesity surgery, several papers have discussed the importance of detecting and eradicating H. pylori (18). It is recommended that, since it is associated with an increased incidence of gastroesophageal cancer and anastomosis lesion, it can be detected and treated before the surgery (4) and for adults undergoing gastric bypass surgery, it is necessary to perform preoperative testing for infection with H. pylori (11). H. pylori infection has an outbreak of 24-67% in bariatric patients (5).

With the epidemic of obesity as a general health problem, gastrointestinal surgery is today the most effective way to achieve weight loss and it is accepted in patients with obesity (1). Which will reduce the weight in long term, improve lifestyle and reduce complications (22,23). The Roux en Y method and sleeve gastrectomy are the most common procedures for the treatment of obesity around the world (6). Franklin *et al*., have reported that H. pylori are associated with an increase in complications in patients under Roux en Y (17).

Postoperative pain is common after surgery; chronic pain hurts both the patient and his relatives (24). Abdominal pain is one of the most common and disturbing problems after gastric bypass surgery, and 15-30% of patients referred to the emergency department or needing to be admitted after 3 years after gastric bypass; abdominal pain is the first complaint in more than half of this Cases (2,4,10). In Pitt *et al.*, study, about 70% of patients have chronic abdominal pain (9). In the present study, more than one-third of people with a history of H. pylori who had chronic abdominal pain after surgery were studied.

One of the most important problems for patients undergoing gastric bypass surgery is abdominal pain, which causes frequent referrals to the emergency room. One of the main causes of acute abdominal pain is internal hernias, anastomosis, and visceral adhesions, which cause full or partial obstruction of the intestines. In these cases, early diagnosis and timely intervention will be critical to rescue surgery.

Most chronic abdominal pain is stomach colic and is often treated with antispasmodic drugs. In our experience, a large percentage of patients who referred to chronic pain in the abdomen were positive for H. pylori. About one-third of the patients who had this germ was suffering from abdominal pain.

Although in previous studies of bariatric surgery, the history of H. pylori has not been identified as the main cause of chronic abdominal pain after surgery. But according to the available evidence in this study, H. pylori can be a potential cause of postoperative chronic pain, and it is suggested that by checking and diagnosing the presence of patients before the operation and treating the infection or eradicating it from one of the potential causes of pain in these patients were prevented after surgery.

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