Introduction

The increased prevalence of obesity in the United States has become a prominent health concern, with a direct consequence on the healthcare system. This epidemic affects the quality of life and presents a variety of complications and co-morbid conditions, among which is the prevalence of internal hernias, which may occur in various patient groups, including those undergoing gastric bypass surgery. The goal of this prospective study was to assess the incidence of internal hernia in patients status post bariatric surgery who present with abdominal pain. We also aimed to further delineate the types of CT findings in patients with adhesions versus those with an internal hernia.

Materials/Methods

All CT examination was performed using helical technique on an Aquilion 64, 260, and 160slice scanners (Toshiba Medical Systems, Inc.). The examination was performed using helical technique at 2 mm slice thickness and with 1 mm overlap. The contrast material used was a mixture of iohexol, iodinated contrast medium with a scan delay of approximately 70 seconds. Oral contrast medium was also administered as a series of Cohen kappa values, which allows differentiation of the two latter signs have not been extensively examined in literature. Further, we assessed the utility of these findings in differentiating bowel obstruction secondary to intermittent lymphatic/vascular obstruction from other causes of abdominal pain and obstructive symptoms.

Results

A total of 48 patients who underwent Roux-en-Y gastric bypass surgery were identified and included in our study. Of those, 17 patients were identifi ed as an incidental finding on CT examination at the time of routine imaging for other indications or chief complaints. There were 60 patients who were included in our study due to their varied clinical presentations. Of those, 9 patients who presented twice for internal hernias, 12 were Petersen’s hernias, 6 were paraduodenal hernias, and 3 were mesenteric defects, respectively. The most common sign observed was engorged mesenteric vessels (73%), followed by engorged mesenteric nodes (60%) and hazy mesentery (54%).

Discussion/Conclusions

The diagnostic of intestinal obstruction is a challenge, clinically. Most often, in the absence of any definitive diagnostic hallmark, patient presentation, history, physical exam, laboratory studies, and imaging are often used in the diagnostic algorithm. This study aimed to report our experience in a busy Level 1 trauma center emergency room with a focus on abdominal CT imaging. In our institution, CT is a primary modality used in the diagnosis and management of patients with acute abdominal pain. The study was approved by the Institutional Review Board and complies with applicable standards of care.

All patients underwent CT evaluation and then were found to have surgically proven internal hernias. Among those who underwent Roux-en-Y gastric bypass at our institution over an 8-year period, this study was approved by the Institutional Review Board and complies with applicable standards of care. Two readers with different years of experience in a busy Level 1 trauma center emergency room evaluated the images. The attending radiologists had 31 years and 40 years, respectively, of experience in a busy Level 1 trauma center emergency room. The highest level of agreement was seen in vessel engorgement at 0.91. The overall prevalence of vessel engorgement observed in our study was 59%.

Mushroom Sign

Engorged Vessels

Hazy Mesentery

Table 1

Table 2

Table 3

Table 4

Table 5

References


6. Tao J, Jiang Z, and Tian W: CT Findings of Internal Hernia After Gastric Bypass That May Precede Small Bowel Obstruction


10. Tao J, Jiang Z, and Tian W: CT Findings of Internal Hernia After Gastric Bypass That May Precede Small Bowel Obstruction