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Laparoscopic Sleeve Gastrectomy following Pylorus-Preserving Pancreaticoduodenectomy

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Abstract

Background: A 35-year-old married female (68 kg, 150 cm, BMI: 30.2) with pancreatic divisum complicated chronic pancreatitis and underwent pylorus-preserving pancreaticoduodenectomy in 2010. After that, her condition was well. However, body weight gained progressively to 76 kg (BMI: 33.7) and hypertension developed. During these two years, tried exercise and medication control for hypertension, but in vain. She received a laparoscopic sleeve gastrectomy in October 2013. The post-operative course was uneventful. **Methods:** We applied three ports for laparoscopic operation, including two 12 mm and one 5 mm trocars. The liver was not needed to be elevated due to adhesion. The operative time was 75 minutes. **Results:** The patient's body weight was 10 kg reduced in the first two months and reduced to 59 kg 6 months later. **Conclusions:** We report a case that received laparoscopic sleeve gastrectomy following pylorus-preserving pancreaticoduodenectomy due to pancreatic divisum. This case encourages us to extend the indication of laparoscopic sleeve gastrectomy.

Keywords

Sleeve Gastrectomy, Morbid Obesity, Obesity, Pancreatectomy

1. Introduction

Sleeve gastrectomy is a recently developed technique for treating morbid obesity. Since it is a simple procedure, the number of surgeons using it has grown in recent years [1]. This restricts the size of the stomach to induce satiety and resects fundal ghrelin-producing cells to decrease appetite. We present a case that received laparoscopic sleeve gastrectomy following pylorus-preserving pancreaticoduodenectomy (PPPD) due to pancreatic divisum. Most surgeons are concerned

about dense adhesions in patients' post-PPPD. However, sleeve gastrectomy and PPPD have different surgical planes, thus we could perform the operation without difficulties even if there were adhesions. This is the first case of laparoscopic sleeve gastrectomy following PPPD and could help us extend the indication of sleeve gastrectomy.

2. Materials and Methods

2.1. Patients

One hundred cases of sleeve gastrectomy were performed from July 2009 to December 2013 at IRCAD, Taiwan. The surgical procedure was performed by the same surgeon, experienced in advanced laparoscopic surgery. Nine of the patients had undergone previous operations, including two laparoscopic cholecystectomies, two laparoscopic appendectomies, three cesarean sections, one laparoscopic adjustable band, and one PPPD.

We presented this 35-year-old married female with BMI of 33.7 (76 kg, 150 cm) and underwent laparoscopic sleeve gastrectomy in October 2013. She received PPPD due to pancreatic divisum complicated chronic pancreatitis in 2010.

2.2. Surgical Technique

The patient was put in a supine position with legs split in the reverse Trendelenburg position. Preoperative antibiotics were administered. A 12 mm optical trocar was placed under direct vision on the umbilicus. A 30-degree angled laparoscope was placed into the peritoneum. The liver was not needed to be hanged due to adhesion. Another 12 mm port was placed in the left lateral flank. A 5 mm trocar port was placed in the right lateral position.

A lysis of adhesion was performed first (**Figure 1**). The pylorus and greater curvature of the stomach was then identified (**Figure 2**). A ligature was used to dissect the greater curvature of the stomach. French 36 oral-gastric tube was placed. A linear cutting stapler was used to cut the stomach. After cutting the stomach, we used 3-0 Vicryl to reinforce the staple line. Remove the specimen from the umbilical port (**Figure 3**). Finally, we placed a drain and performed scar revision for the patient (**Figure 4**).

3. Results

The patient received an oral contrast study on the second day post-operatively. It showed no obvious leakage of the stomach (**Figure 5**, arrow), and the oral contrast could flow smoothly pass through the gastro-jejunostomy into the jejunum. Remove the drain on the third day post-operatively and the patient was discharged uneventfully. The patient's body weight reduced to 70 kg in one month post-operatively.

4. Discussion

Pancreas divisum is a frequent congenital anatomical anomaly characterized by the

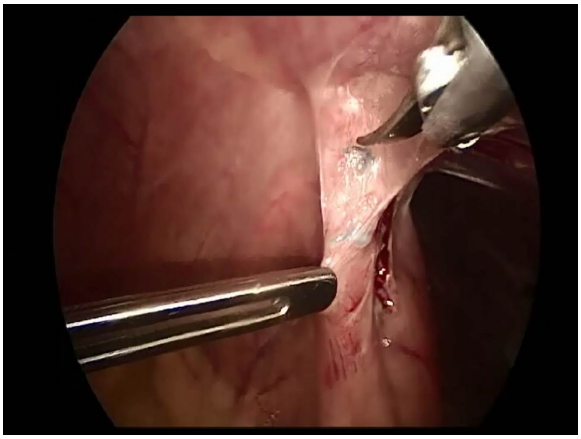

Figure 1. Adhesion in upper abdomen was encountered. Lysis of adhesion was performed by scissor.

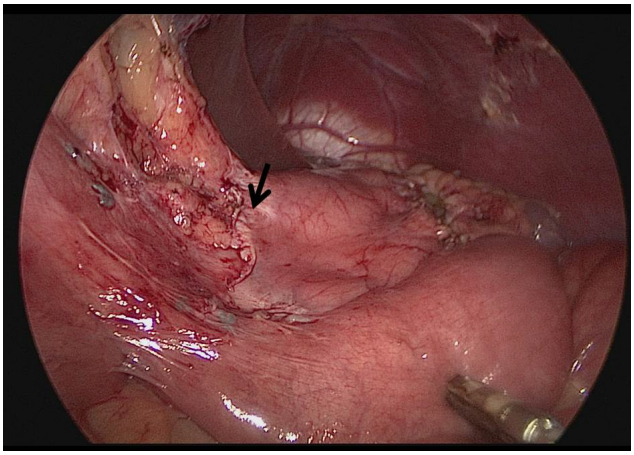

Figure 2. The pylorus and greater curvature of stomach was then identified (arrow).

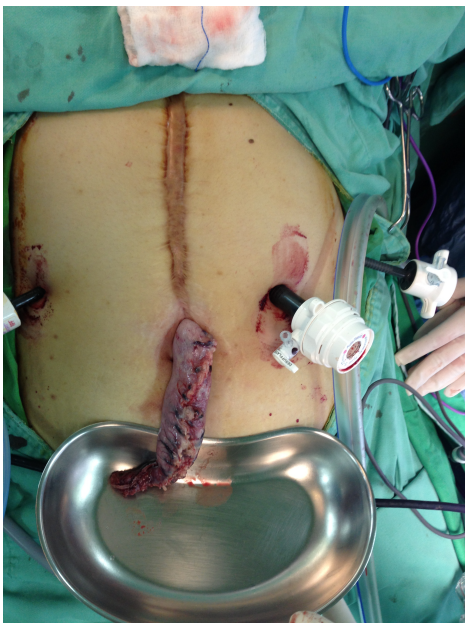

Figure 3. Remove the specimen from the umbilical port.

Figure 4. Scar revision was performed.

Figure 5. Oral contrast study in second day post-operatively. It showed no obvious leakage of stomach (arrow), and the oral contrast could flow smoothly pass through the gastro-jejunostomy into the jejunum.

failure of fusion of the ducts of Santorini and Wirsung during fetal development [2]. It could induce chronic pancreatitis. The treatment includes conservatively and operation. The operation is pancreaticoduodenectomy. PPPD may be preferred over Whipple because of its purported nutritional advantages and the reduced likelihood of postgastrectomy syndromes [3].

Laparoscopic sleeve gastrectomy is a restrictive procedure without the malabsorptive component present in other bariatric procedures. It involves the resection of two-thirds of the stomach to provide increased satiety and decreased appetite.

For the Whipple operation, we need to perform gastric resection and reconstruction. It also caused altered planes [4]. However, PPPD is a major operation that involved the distal stomach, duodenum and pancreas; the sleeve gastrectomy has a different surgical plane. Even the adhesion encountered, the gastric body and fundus were not involved.

We report this case that received laparoscopic sleeve gastrectomy following pylorus-preserving pancreaticoduodenectomy due to pancreatic divisum and it encourages us to extend the indication of laparoscopic sleeve gastrectomy.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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