Case Report

Laparoscopic Gastric Bypass in a Patient with Malrotation of the Intestine

Mr. Imran Alam, BSc, FRCS (Ed & Glasg)\(^1\); Mr. S. Mahmud, FRCS\(^1\); Mr. R Ackroyd, MD, FRCS\(^2\); Prof. J. N. Baxter, MD, FRCS (Eng & Glasg), FRACS\(^1\)

\(^1\)Department of Surgery, Morriston Hospital, Swansea; \(^2\)Department of Surgery, Royal Hallamshire Hospital, Sheffield, UK

The increased prevalence of morbid obesity is associated with an increased prevalence of obesity co-morbidities. Bariatric surgery is generally the only effective treatment. Gastric bypasses are the most common bariatric operation in many countries, and more than half are performed laparoscopically. We discuss the challenges encountered in performing laparoscopic gastric bypass and cholecystectomy in a morbidly obese patient who was found to have malrotated small and large bowel when the procedure started. In the absence of past gastrointestinal symptoms and investigations, there is no way of diagnosing this anomaly preoperatively. However, when such a problem is posed at the time of surgery, it is safe to perform the planned operation if the surgeon has experience and skills in advanced laparoscopic techniques.

Key words: Morbid obesity, laparoscopic gastric bypass, malrotated bowel

Introduction

Surgery has become the therapy of choice for morbid obesity. Roux-en-Y gastric bypass (RYGBP) is one of the most commonly performed procedures, and is increasingly being performed laparoscopically. We discuss the challenges encountered in a morbidly obese patient with malrotated small and large intestine while performing a laparoscopic RYGBP.

Case Report

A 40-year-old female presented with a history of longstanding morbid obesity. Her body mass index (BMI) was 50 kg/m\(^2\) and associated co-morbidities included type 2 diabetes, hypertension and dyslipidemia. She fulfilled the criteria for surgery approved by the National Institute of Clinical Excellence and Public Health (NICE). She underwent the routine multi-disciplinary assessment for bariatric surgery. Chest x-ray and ECG were normal. Ultrasound scan of the abdomen showed a normal liver and a gallbladder containing gallstones. Ultrasound is not routinely carried out in our patients but it was performed for recurrent episodes of presumed biliary colic.

The surgery was started routinely with the surgeon standing between the patient’s legs with the patient in reverse Trendelenberg position. Initially, the laparoscopy confirmed stomach, liver and gallbladder in normal position as expected. The transverse colon could not be visualized, thought to be due to a very fatty omentum.

Early on, there was difficulty in locating the duodeno-jejunal flexure (D-J flexure), i.e. the area of Treitz’ ligament. Initially it was thought to be due to the enormous amount of fat, so the small intestine was followed to ileocecal junction which was located in the left iliac fossa, which raised some suspicion. The small intestine was then followed in the reverse direction, and after some dissection, the D-J flexure was identified in right upper quadrant just below the area...
where the third part of the duodenum normally commences (Figure 1). This confirmed that the patient had malrotated small bowel, and the question was raised whether to proceed as planned or just do a cholecystectomy and a gastric banding. The decision was taken that it was practical and safe to complete the procedure as planned. A routine proximal RYGBP was performed in our usual manner without any difficulty.

However, during the cholecystectomy, the alimentary limb was almost covering the gallbladder and Calot’s triangle, and any tension on this limb was putting the gastrojejunal anastomosis at risk (Figure 2). This made it very difficult to do the dissection and identify structures. An extra 5-mm port was inserted, and after a careful and very difficult dissection, the gallbladder was excised. The patient made a good recovery, and was discharged home on the 3rd postoperative day.

**Discussion**

Morbid obesity is associated with significant morbidity and mortality.\(^1\) Conservative treatment is usually unsuccessful, and surgery has been found to be the most effective treatment.\(^2\) According to the NICE guidelines, those obese patients who have failed the conservative means of losing weight and have BMI >35 kg/m\(^2\) with co-morbidity or >40 kg/m\(^2\) with or without co-morbidity are eligible for bariatric surgery.\(^3\)

The popular operations for treatment of morbid obesity are gastric banding, gastric bypass and biliopancreatic diversion with or without duodenal switch. However, increasingly the most commonly performed procedure is a proximal gastric bypass and more than half are being performed laparoscopically.\(^4,5\) The laparoscopic approach is associated with early recovery, short hospital stay and less complications.\(^6\) Sometimes, unexpected challenges are encountered, but if the surgeon is experienced they can be dealt with safely.

Our patient had a normal preoperative assessment. The ultrasound scan which was performed to confirm the presence of gallstones showed normal hepatobiliary anatomy. She had no gastrointestinal investigations or abdominal surgery in the past that could have pointed towards malrotation of the bowel. This anomaly was identified per-operatively, but it did not stop us from doing the planned procedures safely because the surgeon had significant experience in this specialty. However, we think that it would have been much easier to perform the cholecystectomy before the bypass portion of the operation.