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Original article

Management of acute intra-abdominal sepsis caused by leakage after one anastomosis gastric bypass

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Abstract

Background: Leakage after one-anastomosis gastric bypass (OAGB) is fortunately rare (<1%), but it remains the most severe complication. Few published data exist on this specific issue.
Objectives: To analyze the results from patients who presented with acute intra-abdominal sepsis (AIAS) caused by leakage after OAGB.
Setting: A university public hospital in France.
Methods: Between October 2006 and February 2016, 17 consecutive patients with a diagnosis of AIAS caused by leakage after OAGB were included. Preoperative characteristics, clinical symptoms, radiologic findings, management, morbidity, and mortality were assessed.
Results: All 17 patients were included in the study. There were 4 men (23.5%), the median age was 48 years, and median preoperative body mass index (BMI) was 51 kg/m^2. The most frequent clinical sign was tachycardia (65%). An oral contrast computed tomography scan was performed in 15 patients (88%) and showed a diagnosis of AIAS in 93% of cases. The median time between OAGB and leak diagnosis was 4 days. A gastrojejunal anastomosis (GJA) leak was the most frequent origin (41%). Sixteen patients (94%) were managed surgically (laparotomy n = 11, laparoscopy n = 5) and one medically. There were no deaths. The overall morbidity rate was 47% (major = 41%). Six patients underwent an emergency conversion into Roux-en-Y gastric bypass (RYGB) (in cases of GJA, gastric-tube, and biliary-limb leakages) and were compared to 6 patients who did not undergo conversion but who could have benefited. We observed a tendency toward a reduced overall morbidity rate (16.7% versus 83.3%, $P = .08$) and shorter lengths of stay in the "conversion to RYGB" group.
Conclusion: The management of AIAS caused by leakage after OAGB was safe, effective, and mostly surgical. Emergency conversion to RYGB in cases of GJA, gastric-tube, or biliary-limb perforation was feasible and safe. (Surg Obes Relat Dis 2017;▮:00–00.)

Keywords: Mini-gastric bypass; one-anastomosis gastric bypass; Fistula; Leakage emergency; Conversion into Roux-en-Y gastric bypass; Weight loss; Morbid obesity

Over the past 2 decades, bariatric surgery has proven to be the most effective treatment for morbid obesity [1]. A laparoscopic Roux-en-Y gastric bypass (RYGB) is currently the gold-standard procedure [2–4], whereas a laparoscopic mini-gastric bypass (or one-anastomosis gastric bypass [OAGB]), first described in 2001 [5], is now offered as an alternative to RYGB because of its efficacy and safety profile. However, controversy remains regarding the

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theoretical risks of biliary reflux and malnutrition this procedure may cause [6,7].

Concerning early morbidity after OAGB, the occurrence of leakage is fortunately rare (<1%) [8–12], but it remains the most severe complication. In fact, the presence of bile in the afferent limb implies some specificities. It is easy to understand that gastrojejunal anastomosis (GJA) or gastric-tube (GT) leakages can lead to early and significant biliary peritonitis, compared to RYGB. Its ideal management remains unclear, but it is now accepted by many that the best treatment is early reintervention [13].

With increased departmental experience, we have progressively improved our surgical management of these patients. We have managed biliary peritonitis caused by GT or anastomotic leakage by applying the general rules used to surgically treat peritonitis (i.e., lavage, drainage, suture, or intubation of the perforation) and performing an emergency conversion to an RYGB at the same time. This procedure theoretically stops postoperative bile contamination of the GJA and GT. However, this specific approach has not been further explored by others.

Acute intra-abdominal sepsis (AIAS) after OAGB can be caused by localization of another fistula (excluded stomach, afferent or efferent limbs, and colon) but, once again, few published data have been reported on the specific management according to fistula site [13].

The aim of this study was (1) to analyze the results from 17 consecutive patients who presented with AIAS caused by leakage (all types) after OAGB, and (2) specifically to analyze patients who had undergone emergency conversion to a RYGB in this context.

Methods

Patients

Between October 2006 and February 2016, 17 consecutive patients (10 from our department and 7 referred from other institutes) with a diagnosis of AIAS caused by postoperative leakage after OAGB were managed in the digestive surgery department at Georges Pompidou European Hospital (Paris), which is a university public hospital.

For each patient, preoperative characteristics (age, sex, co-morbidities, weight, body mass index), clinical symptoms, radiologic findings, time from OAGB to AIAS management, interventional and surgical modalities, intraoperative findings, morbidity, and mortality were assessed. Data were retrospectively analyzed.

Initial OAGB

All indications to perform an initial OAGB relied on guidelines published by the National Institutes of Health, even for patients referred from other institutes [14]. *Helicobacter pylori* infections were systematically treated before OAGB. All procedures were performed laparoscopically. Briefly, a long and narrow GT was created and a GJA was performed at 150–200 cm from the ligament of Treitz, with the jejunum ascended to a precolic position [8,12,15]. A nasogastric tube and a surgical drain were placed behind the anastomosis at the end of the procedure. In patients with prior laparoscopic adjustable gastric banding, lap-band removal was performed simultaneously.

AIAS caused by leakage after OAGB

AIAS caused by leakage was defined as any postoperative intraperitoneal infection (including any purulent or biliary postoperative emission from a drain, intraperitoneal abscess, supramesocolic localized peritonitis, and generalized peritonitis) that occurred before postoperative day 90 after the initial OAGB. Diagnosis was confirmed by oral contrast computed tomography (CT) or intraoperative findings when reoperation was required. Patients with no identified fistula origin were diagnosed as having leakage from an undetermined origin.

Management evaluation

All surgical or nonsurgical modalities used to manage AIAS were reported and analyzed (see Results section). During emergency surgeries, feeding jejunostomy placement depended on the intraoperative findings, the patient's condition, and the surgeon's choice. When conversion to RYGB was intraoperatively decided upon after specific treatment of peritonitis (lavage, drainage) and the leakage area (suture, intubation, anastomosis refection), a mechanical 70-cm Roux-en-Y enteroenterostomy was performed (i.e., 70 cm of the OAGB efferent limb was measured from the GJA and then anastomosed to the distal part of the biliary afferent limb, just before the GJA) (Fig. 1). Finally, a stapler was fired to separate the GJA and the new enteroenterostomy to create a Roux-en-Y loop (alimentary limb = 70 cm, biliary limb = 150–200 cm), and the mesenteric breach was systematically closed (Fig. 1).

All patients in the study received antibiotics. Initial empirical antimicrobial therapy included a beta-lactam/beta-lactamase inhibitor antibiotic or a cephalosporin + metronidazole combination. In case of septic shock and/or severe peritonitis, an aminoglycoside antibiotic and an antifungal therapy were associated. Antibiotics then were adapted to intraoperative culture swabs. The median antibiotic duration was 7 days (range 5–14).

Early morbidity after surgery or from nonsurgical management was defined as any complication that occurred before postoperative day 90. Complications were ranked using the Clavien–Dindo score [16], and major early morbidity was defined as a grade ≥IIIa adverse event; any type of persistent postoperative fistula was considered a major complication. Major late complications required surgical treatment.