Management of Distal Gastric Leak After Laparoscopic Sleeve Gastrectomy by Double Pigtail Catheter

Sleeve Gastrektomi Kacağının Double Pigtail Kateter ile Tedavisi

Management of Sleeve Gastrectomy Leak by Double Pigtail Catheter

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Özet

Gastrik kaçak , tedavi zorluğu nedeniyle laparoskopik sleeve gastrektomi operasyonunun en korkulan komplikasyonudur. Gastrik kaçak, cerrahi sonrası genellikle kendiliğinden genişleyen metal stent eşliğinde drenaj kateterleri kullanılarak yapılır iken, double pigtail kateter yardımıyla endoskopik internal drenaj son zamanlarda önerilen bir yaklaşım haline gelmiştir. Bu yazımızda, laparoskopik sleeve gastrektomi operasyonu sonrası distal gastrik kaçak gelişen bir olgunun double pigtail kateter yardımıyla tedavisini ve sonuçlarını sunmaktayız.

Anahtar Kelimeler

Bariatrik Cerrahi; Double Pigtail Katater; Gastrik Kaçak; Laparoskopik Sleeve Gastrektomi

Abstract

Gastric leakage postsurgery is the most feared complication of laparoscopic sleeve gastrectomy due to the difficulty of its management. While gastric leakagemanagement postsurgery is often performed using internal drainage catheters accompanied by self-expandable metal stents, endoscopic internal drainage by double pigtail catheter has recently become a recommended approach. Here we describe our treatment of a patient who experienced distal gastric leakage after undergoing laparoscopic sleeve gastrectomy using double pigtail catheter and our treatment recommendations based on the patient outcome.

Keywords

Bariatric Surgery; Double Pigtail Catheter; Gastric Leak; Laparoscopic Sleeve Gastrectomy

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Introduction

Gastric leakage (GL) postsurgery is the most feared complication of laparoscopic sleeve gastrectomy (LSG) due to the difficulty of its management and the high morbidity and mortality associated with it [1]. According to a recent systematic analysis, the incidence of GLafter LSG is 2.4%, with 89% of leaks occurring from the proximal third of the stomach [2]. Management of GL frequently requires use of internal drainage catheters accompanied by self-expandable metal stents (SEMS) [1]. Recently, endoscopic internal drainage by double pigtail catheter (DPC) has become a recommended approach after several studies found it to be better tolerated as well as requiring fewer procedures and a shorter healing time compared to endoscopic internal drainage by SEMS[1,3]. In this report we describe our treatment of a patient who experienced distal GL after undergoing LSG using DPC.

Case Report

A 28-year-old female patient who had undergone LSG 40 days previously was referred to our clinic for treatment of postoperative GL that had been unsuccessfully managed by conservative treatment. Despite experiencing30cc/day of purulent drainage from her drain side, the patient's general condition was good, and her vital signs were stable and within normal limits.Upper gastrointestinal (GI) series and computed tomography (CT) scanning showed a perigastric distal leak and a 61×51 mm abscess at the gastrosplenic region (Figure1). Endoscopic exami-



Figure 1. CT scans showing gastrosplenic abscess formation

nation revealed a 5 mm fistula orifice from the starting point of the staple line and that the guide wasdelivered across the orifice emerging from the skin from the drain side (Figure 2).

We began our treatment by expanding the fistula orifice using endoscopic electrocautery and then placing a 6cm long 10 Fr DPC (Erdamed Biliary Stent, Istanbul, Turkey) under fluoroscopic guidance(Figure 3). On postoperative day 1, we initiated soft food ingestion, and then progressed to normal food ingestion on postoperative day 3. At postoperative week 4, we observed complete closure ofthe orificeand mucosal growth over the



Figure 2. Emergence of the guide delivered across the orifice from the skin

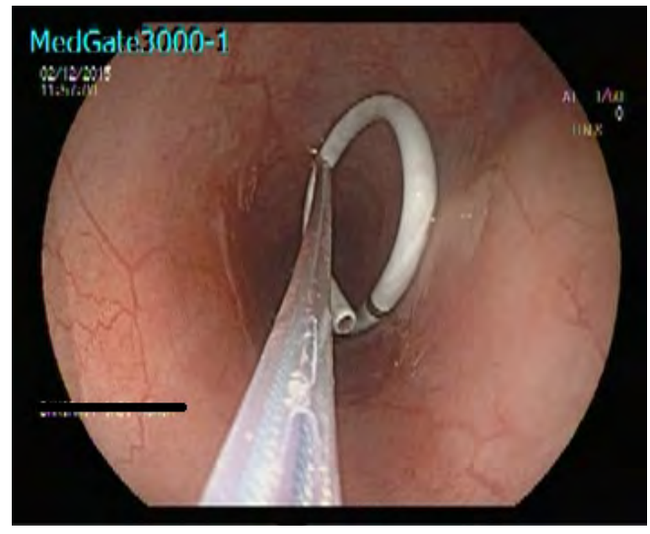


Figure 3. Placement of double pigtail catheter

catheter. We removed the DPC, which was standing freely inside the gastric antrum, using endoscopic snare. At the second-month follow up, the patient neither presented nor complained of any symptoms and we observed no collection on imaging studies.

Discussion

Gastric leakage is defined as early, intermediate, or late according to its timing postsurgery. Early GL occurs 1 to 4 days postsurgery, intermediate GL 5 to 9 days, and late GL 10 or more days [4]. There is no standard treatment protocol for manage-

ment of GL, and the role of surgical treatment for GL after LSG is limited to two aims: adequate drainage in order to prevent abdominal sepsis in case of acute post-operative leak and as a definitive surgery for chronic fistulas that have been unsuccessfully treated using a conservative approach [5]. On the other hand, nonsurgical treatment of GL using SEMS, clips, and endoscopic- and percutaneous-placed drains or tissue sealantsis believed appropriate for stable patients [5].

Use of SEMS to treat postsurgical GL has become generally recommended due to research findings indicating that it is associated with a high rate of success.Nevertheless, migration and poor tolerance of the prosthesis arerelatively common and multiple endoscopies for replacements or adjustments are often required when using this approach [5, 6]. To overcome these challenges, extra-long, covered,self-expandable endoluminal stents have been developed whose use may decrease theincidence of stent-specific complications[7].Use of over-the-scope clip (OTSC) is another approach that appears promising in bariatric surgery. In a recent case series, Keren et al.foundan 80.7% success rate using OTSC[8]. However, theyreported that 26.9% of the patients examined needed additional endoscopic treatment and that only 2 out of 4 patients with antral leaks were treated.

Inspired by the success of endoscopic internal drainage for the management of pseudocysts in chronic pancreatitis, Pequignot et al. became the first researchers to explore the use of DPC for GL management after LSG [3]. In a study of the efficacy of endoscopic internal drainage coupled with enteral nutrition via nasojejunal catheter,Donatelli et al.reported a 95.2% success rate (20/21 patients)in GL management after LSG[9]. However, 66% (14/21) of the patients needed repeated endoscopic sessions and 42.8% (9/21) needed additional OTSCs. In a study of enternal drainage by DPC, Donatelli et al. reported that 78.2% (50/64) of patients were cured and 52% (26/50) of the cured patients did not need additional endoscopic sessions [1].In their study, all patients were kept nil by mouth and provided with enteral nutrition, with the exception of 11 patients who were provided with a normal diet due to complete blockage of a small leak after placement of the stent.Based on the long-term results of their study of DPC, Donatelli et al. concluded that enternal drainage by DPC is a valid, curative, and safe method that should be considered the primary approach toward management ofGL in the absence of diffuse peritonitis or multiorgan failure. In support of this conclusion,an algorithm developed by Nedelcu et al. to assist in the choice of treatment based on GL size and presence of gastric stenos (GS) identified use of DPC as the treatment of choice in patients with gastric leaks<1 cm in the absence of GS [6].

Conclusion

Use of DPC in the treatment of GL after LGS provides complete drainage of perigastric collections and induces mucosal growth over the catheter, making it a safe and effective means of GL management.

Competing interests

The authors declare that they have no competing interests.

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