

A First Case of Endoscopical Removal of an Eroded Adjustable Gastric Band in Croatia

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ABSTRACT

Laparoscopic gastric banding (LAGB) is one of the most common surgical procedures in the treatment of morbid obesity since it provides good long-term outcomes in weight loss and decrease of comorbidities associated with obesity. Although the procedure has low morbidity and almost none-existing mortality, certain complications can occur. Erosion of the band into the gastric wall is one of the rare complications in LAGB. The reported incidence varies from 1 to 11%, however the largest study reported an incidence of 1.6%. This is in accordance with the incidence in our Centre for obesity, where only one case of erosion occurred among 112 operative procedures. The aim of this paper is to present a patient with gastric band erosion and its removal by using the endoscopic techniques as a minimally invasive management method.

Key words: morbid obesity, bariatric surgery, complication, laparoscopic gastric banding, gastroscopy

Introduction

Laparoscopic adjustable gastric banding (LAGB) is the most commonly performed bariatric procedure in the world since it is minimally invasive, completely reversible, does not cause metabolic complications and has very low morbidity and almost none-existing mortality¹. The first LAGB in Croatia was performed in 2004 at University Hospital Center »Sestre milosrdnice« in Zagreb and to this date a single surgeon performed 112 LAGBs².

Despite the previously mentioned advantages, long-term complications occur in 6–26% treated with LAGB³. Complications are divided into band-related which occur in 5.8% of patients and those related to the port system reported in 2.6–24% of patients^{4,5}. Intra-gastric band migration or band erosion is a rare long-term complication, which requires band removal. Nocca et al. reported band erosion rate of 1.6% in large series of patients⁶. The most common removal technique is surgery, but endoscopic re-

moval has also been described as a successful method⁷. We present a case of an eroded band in a 37-year old female patient, which was successfully removed endoscopically using the polypectomy loop.

Case Report

A 34-year old morbidly obese woman underwent LAGB in April 2006. At admission she weighed 153 kg and had BMI of 49 kg/m². The postoperative period was uneventful and the patient was discharged with weight of 141.5 kg. Her weight decreased to 100 kg one year after the surgery, and during the follow-up she reported only minor dyspeptic symptoms sufficiently treated medicamentously. She was admitted to emergency department due to abdominal pain and vomiting in May 2008. Contrast enema showed stagnation in the incipient part

of the stomach with a reflux into the distal part of esophagus. The content of the port was evacuated, the patient received symptomatic therapy and was released home on her demand. Control upper gastrointestinal endoscopy was performed one week later and revealed aboral dislocation of the band. The patient refused recommended surgical treatment. She started to gain weight during the follow-up and the diagnosis of band erosion was made based on endoscopic findings (Figure 1) in April 2009. Approximately 30% of the band's circumference was eroded into the stomach at that time. She was monitored until the band penetrated into the gastric lumen and finally in June 2009 prepared for the procedure of band removal. Based on world's trends we have chosen endoscopic band removal. The procedure was performed in general anesthesia by the multidisciplinary team of experts – bariatric surgeon, gastroenterologist and anesthesiologist. Therefore conversion of the endoscopic procedure to laparotomy remained possible throughout the procedure. A standard 1-channel endoscope (GIF-Q160I Olympus Optical Co.Ltd, Tokyo, Japan) was initially inserted and the eroded band was visualized. A metallic thread of the gastric band cutter (GBC; Agency for medi-

cal innovations, GMBH, Götzis, Switzerland) (Figure 2) was introduced into the biopsy channel of the endoscope and passed between the gastric wall and the band (Figure 3). The endoscope was removed and reintroduced to retract the thread backwards. Then the thread passed inside the band and its 2 ends were introduced into an external narrow metal tube and passed into the tourniquet of the handgrip and the metal tube containing the thread was introduced orally until it reached the band. The band was cut by strangulation and after several unsuccessful attempts by forearm grasping foreign body forceps the band was pulled out using a polypectomy loop (Figure 4). The patient was then moved to supine position and the surgeon removed the port by cutaneous exploration. High doses of proton pump inhibitors, antibiotics and intravenous saline were administered and the patient was discharged three days after the procedure.

Discussion

Morbid obesity is an increasing problem of western countries because of the many related comorbidities and reduced life expectancy⁸. According to Croatian public

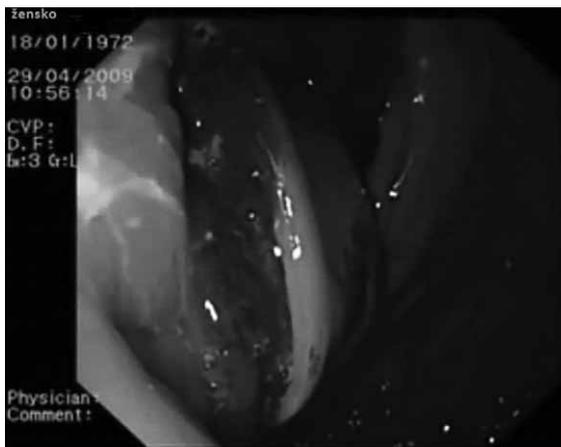


Fig. 1. Endoscopic view of the eroded gastric band.

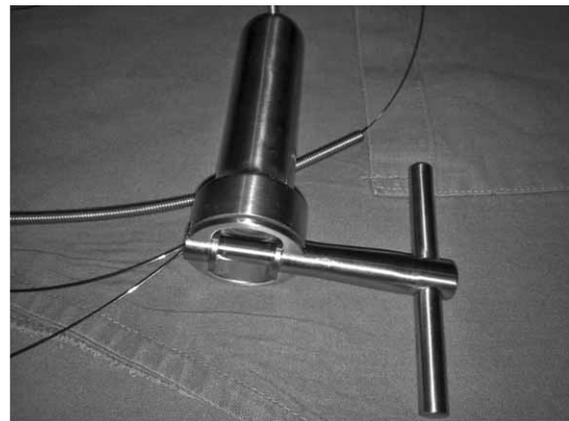


Fig. 2. Gastric band cutter (GBC; Agency for medical innovations, GMBH, Götzis, Switzerland).

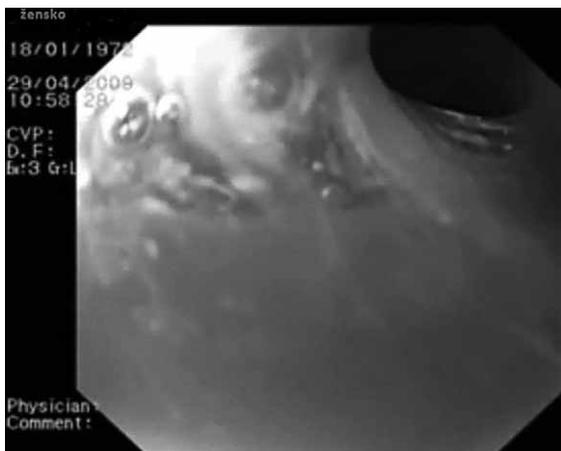


Fig. 3. Endoscopic view of the metallic thread of gastric band cutter passage between eroded band and gastric wall.



Fig. 4. Endoscopic view of successful band removal by oval polypectomy snares (Medwork®).

health informations 58.2% of female and 68.3% of male are overweight with BMI > 25 kg/m², with 22.7 of female and 21.6% male being obese (BMI > 30 kg/m²)⁹. The only solution with good long-term outcome for this disease is bariatric surgery^{10,11}. Although LAGB is the least invasive procedure among bariatric operations it has some risks and complications with reoperation rates at about 5.9%¹².

Band erosion is a late complication resulting from a combination of destructive process and self-healing of the gastric wall with no or minimal infectious process. It is a rare complication and the etiology of band erosion is still poorly understood. Operative technique influences the incidence of band erosion. Erosion rate decreased from 8% to 0.9% when the pars flaccida approach is performed¹³. Increased pressure applied to the gastric wall can also lead to band erosion, whether it is applied externally by overfilling the band or internally by excessive food intake or large food boluses¹⁴.

Clinical manifestations of band erosion are often non-specific with symptoms such as weight regain, epigastric pain, vomiting, port infection but it can also be asymptomatic³. Diagnosis can be established by water-soluble contrast enema, gastroscopy and CT scan¹⁵. The removal of the eroded band is mandatory, but there is no consensus about the best management method. Treatment con-

sists of three approaches: laparoscopic removal, laparotomy and endoscopy. Surgical approach is invasive, technically more difficult due to postoperative tissue changes and it can cause even more adhesions to form and make any further surgery difficult, if not impossible. It is more expensive and demands longer intrahospital stay and is associated with higher morbidity and mortality rates¹⁶. On the other hand, the endoscopy/gastroscopy is minimally invasive, well tolerated and associated with low complication rates⁷. It allows quick restitution of oral nutrition and early discharge from the hospital. Chisholm et al. presented a study involving 63 patients with band erosion from which 50 patients underwent endoscopic removal with efficiency of 92% and only minor complications¹⁷. The only preference for this procedure is that the degree of penetration of the band is more than 50%, so if the patient is asymptomatic complete migration can be awaited and the band removed less invasively¹⁸.

In conclusion, endoscopy is effective and safe method for eroded gastric band removal. The authors suggest endoscopy as the first-line treatment of eroded gastric bands. Therefore surgery can be performed with low complication rates in patients with endoscopic treatment failure.

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PRVI SLUČAJ ENDOSKOPSKOG UKLANJANJA URASLE PODESIVE ŽELUČANE VRPCE U HRVATSKOJ

S A Ž E T A K

LAGB je najčešći kirurški oblik liječenja morbidne pretilosti zbog dobrih dugotrajnih ishoda u vidu gubitka tjelesne težine i smanjenja komorbiditeta vezanih uz pretilost. Unatoč niskom stupnju morbiditeta i gotovo nepostojećem mortalitetu, ovaj zahvat ima i određene komplikacije, a jedna od njih je ujedno i erozija vrpce u lumen želuca. U literaturi se navodi incidencija koja varira između 1 i 11%, no najveća studija autora Nocca et al. pokazala je incidenciju od 1,6%, što je u skladu s incidencijom u našem Centru za liječenje pretilosti gdje je zabilježena jedna erozija vrpce od ukupno 112 izvedenih operativnih zahvata. Ovim radom željeli smo prikazati navedeni slučaj erozije te gastroskopsko uklanjanje kao minimalno invazivni način rješavanja ove komplikacije.