Diagnostic and Interventional Endoscopy

Case Report

Intragastric Balloon Impacted in the Esophagus After Vomiting

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Abstract

A 32-year-old female patient presented to the emergency department with vomiting twice and then severe pain in the retrosternal region. After excluding cardiac emergencies, it was decided to perform an emergency endoscopy on the patient. A foreign body that completely occludes the lumen and does not allow the passage of the gastroscope was observed at the 30th cm of the esophagus from the incisors. The foreign body was determined to be intragastric balloon (IGB). The balloon was punctured in many places with a sclerotherapy needle and completely evacuated. The balloon was then grasped with forceps and removed. The patient was discharged after 1 night of hospitalization. Although IGB treatment is a safe practice, it may rarely lead to complications. Complications may result from operator or user error. If both the practitioner and the patient can fulfill their responsibilities properly, complications can be prevented and treatment success can be increased.

Keywords: Endoscopy, intragastric balloon, intragastric balloon complications, obesity

INTRODUCTION

Endoscopic treatments offer an alternative approach for individuals unable to shed excess weight through traditional diet and exercise, those deemed unsuitable for surgery, or those who prefer non-surgical options. One such method within endoscopic bariatric therapy is the intragastric balloon (IGB), which has gained popularity due to its minimal invasiveness and cost-effectiveness.[1,2] Research indicates that the IGB procedure typically results in a 10%-15% reduction in body weight.[3,4] Among the various endoscopic balloons available, Orbera (Apollo Endosurgery Inc., Austin, Tex, USA) stands out as the most widely used and extensively studied option.

In recent years, advancements have led to the development of swallowable balloons that eliminate the requirement for anesthesia and traditional endoscopy. These balloons are designed with self-emptying mechanisms, as the inner lid spontaneously opens and the balloon passes through the gastrointestinal tract.[5,6] While the IGB procedure is generally considered safe, rare complications like gastric perforation, esophageal perforation, and bowel obstruction have been documented.[7]

In this report, we present a unique case involving a semi-deflated IGB. The patient presented to the emergency department complaining of severe chest pain following vomiting. During a subsequent endoscopy, it was discovered that IGB had become lodged in the esophagus.

CASE PRESENTATION

A 32-year-old female patient arrived at the emergency department after consuming a substantial amount of alcohol (approximately 70 cc of ethyl alcohol in a span of 3 hours) in the evening. She initially presented with 2 episodes of vomiting followed by severe retrosternal pain. Upon arrival, she experienced persistent gagging without vomiting and had traces of blood in her saliva. The patient's medical history was insignificant.

During the physical examination, the patient was conscious, cooperative, and fully oriented. Her blood pressure measured 100/60 mm Hg, and her pulse rate was 110 beats per minute. Systemic examinations yielded no abnormal findings. An electrocardiogram revealed tachycardia within the parameters of a normal sinus rhythm. Laboratory tests, including biochemistry and a complete blood count, did not reveal any pathological abnormalities.

After ruling out cardiac emergencies, the medical team decided to proceed with an emergency endoscopy. To mitigate the risk of aspiration, the procedure was performed with the patient intubated in an operating room setting, utilizing a Fujifilm EG-760R gastroscope.

The endoscopy showed a foreign object completely obstructing the esophageal lumen and impeding the passage of the gastroscope at 30 cm from the incisors. This foreign body was identified as an ingested gastric balloon (Figure 1A). The balloon was punctured multiple times using a sclerotherapy needle and subsequently fully deflated. Forceps were employed to grasp and extract the deflated balloon (Figure 1B).

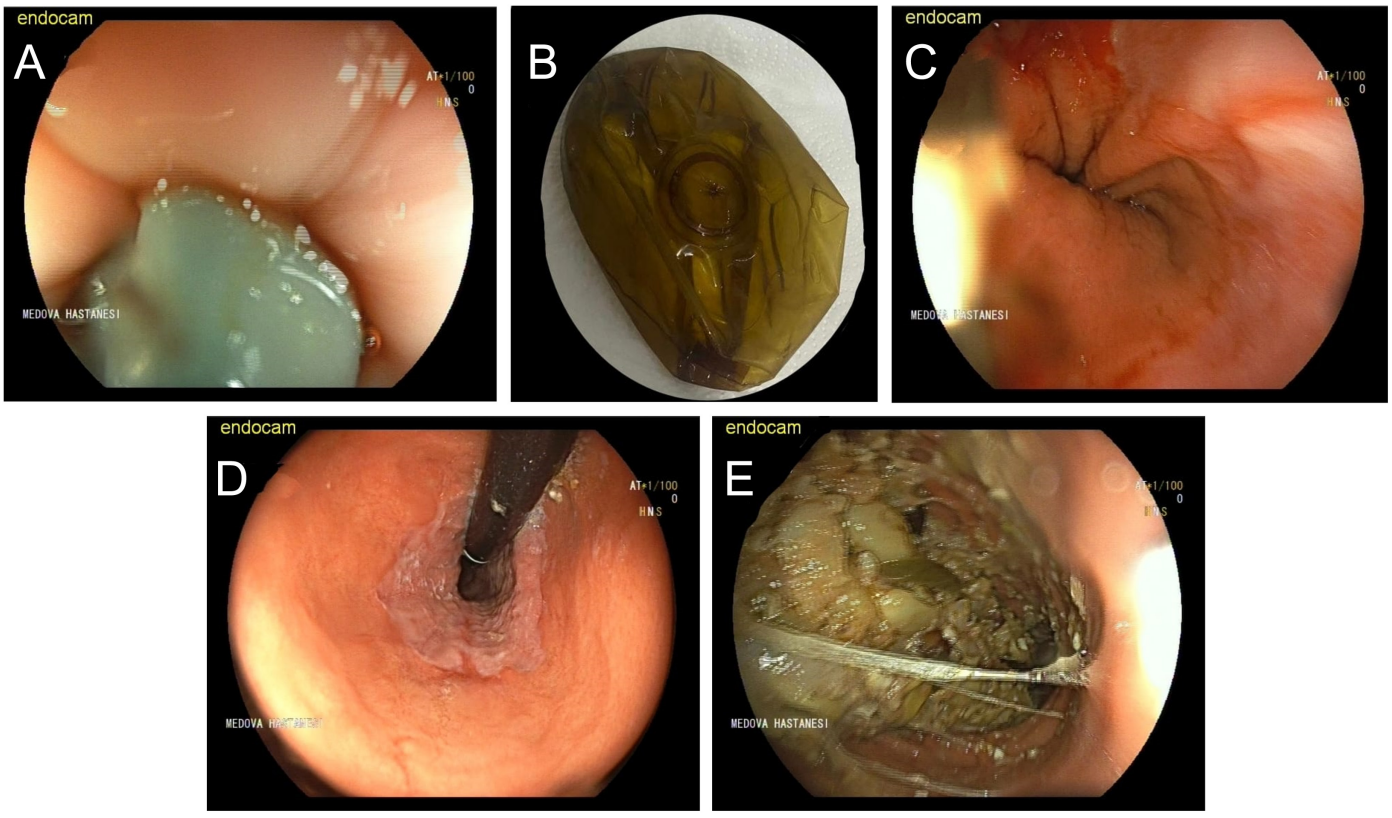

Figure 1. (A) Endoscopic view of the impacted balloon, (B) balloon removed from the mouth endoscopically, (C) esophagitis LA grade B, (D) hiatal hernia, and (E) stomach covered by food debris.

Following the removal of the foreign body, an upper gastrointestinal endoscopy was conducted. Notable findings included linear erosions exceeding 5 mm in length at the distal end of the esophagus (Figure 1C). The examination revealed that the esophagogastric junction was located at 37 cm, and diaphragmatic clamps were noted at 41 cm, indicating a sliding-type hiatal hernia (Figure 1D). The stomach was observed to be covered by food debris (Figure 1E).

Following the procedure, the patient's medical history was revisited. Upon questioning why she had not mentioned the presence of the gastric balloon earlier, she revealed that she had kept it secret due to her husband's presence. Approximately 3 months before, she had discreetly undergone a procedure to ingest a swallowable gastric balloon (Allurion Elipse™, Allurion Technologies, Natick, MA, USA). Initially, she diligently followed a diet regimen for the first month after the insertion of the IGB, resulting in some weight loss. However, she subsequently ceased dieting and discontinued the use of proton pump inhibitors (PPIs) after the first week.

Furthermore, we learned that she was taking antidepressant medication, specifically sertraline (50 mg) and trazodone (50 mg), to manage anxiety disorder. Additionally, the patient admitted to intermittent, excessive alcohol consumption as a means to cope with her anxiety.

After 1 night of hospitalization, the patient was discharged.

DISCUSSION

Intragastric balloon therapy serves as a convenient, safe, well-tolerated, and effective treatment approach that bridges the gap between medical interventions and surgical solutions for obesity.[2] The IGB occupies space within the stomach, generating a sustained sense of satiety with reduced food intake, thereby facilitating weight loss.[4] The duration of the balloon's presence in the stomach is typically 6 months for Orbera-type balloons,[9] whereas swallowable balloons remain in place for 4 months.[6] The utilization of PPIs helps mitigate the exposure of the balloon to high gastric acidity, ensuring its long-term durability.

There are strict contraindications for IGB therapy, including prior gastric surgery, coagulation disorders, active gastric ulcers, severe liver disease, esophageal and gastric varices, gastrointestinal neoplasms, pregnancy, a desire to become pregnant, giant hiatal hernias (>5 cm), alcoholism, and substance addiction. Inflammatory bowel disease, chronic nonsteroidal anti-inflammatory drug use, and previously uncontrolled psychiatric disorders are relative contraindications.[8,9] The placement of the balloon in the presence of any of these conditions can lead to severe, and sometimes fatal, complications.[7]

According to 2018 data from the manufacturer Apollo Endosurgery for Orbera, approximately 280 000 IGB treatments have been administered worldwide.[10] Despite this substantial number of procedures, reported complications remain relatively low. In a literature review conducted by Stavrou et al,[7] a total of 22 cases of gastric perforations, 2 cases of esophageal perforations, and 12 cases of intestinal obstructions were documented. The authors found it challenging to pinpoint the exact cause of these complications but suggested that both practitioner- and patient-related factors might play a role. The primary contributing factors for practitioners are often inexperience and a lack of proper accreditation. For patients, inadequate responsibility-taking (such as

failing to continue PPI prophylaxis or excessive consumption of acidic beverages like cola) appears to be a significant factor.

While the precise cause of the premature deflation of the balloon in our case remains uncertain, we believe it can be attributed to errors made by both the operator and the patient. The practitioner's most significant oversight was not sufficiently probing the patient's psychiatric condition and excessive alcohol consumption or proceeding with IGB treatment despite being aware of these issues. On the patient's part, the primary error was discontinuing the prescribed treatment, including PPI prophylaxis. Additionally, the patient's continued consumption of substantial amounts of alcohol exacerbated the situation.

In conclusion, a thorough pre-procedure assessment of the patient's medical history is imperative before undertaking IGB therapy. This assessment should include a careful inquiry into psychiatric illnesses, substance abuse, and alcohol consumption. Patients must be provided with comprehensive information, highlighting the potential adverse outcomes if accurate details are not disclosed. Encouraging and ensuring the consistent use of prophylactic PPIs during IGB treatment is crucial and should be emphasized. Whenever feasible, patients should be monitored through intermittent follow-up visits, during which dietary compliance and PPI adherence can be assessed. By implementing these measures, we believe that complications related to IGB can be mitigated, ultimately enhancing treatment success.

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Peer-review: Externally peer-reviewed.

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