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INTRAGASTRIC BALLOON IN THE EMERGENCY DEPARTMENT: AN UNUSUAL CAUSE OF GASTRIC OUTLET OBSTRUCTION

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☐ **Abstract—Background: Obesity has become a worldwide epidemic and is associated with significant morbidity and mortality. Many strategies to promote weight loss, including medications and surgical techniques, have been developed; however, few have proven effective. As the rates of obesity and associated complications continue to climb, there is growing pressure on the medical community to develop less invasive procedures that can provide lasting weight loss results. Objectives: One surgical treatment for obesity, available in several countries but not yet approved for use in the United States, is the intragastric balloon (IGB). The IGB is a temporary, space-occupying device placed endoscopically into the stomach to decrease gastric volume and provide a sense of early satiety. Our objective is to highlight potential complications of this device that emergency physicians should be familiar with, in particular, gastric outlet obstruction. Case Report: We report the case of a morbidly obese 63-year-old Middle Eastern man who presented to an emergency department in Texas with mechanical gastric outlet obstruction 2 months after IGB placement. After three endoscopic attempts, the balloon was successfully removed and the obstruction relieved. Conclusion: With an increasingly mobile and obese global population, emergency physicians should be aware of weight loss procedures such as the IGB and appropriate time-sensitive management of high-risk complications. © 2014 Elsevier Inc.**

☐ **Keywords—intragastric balloon; mechanical gastric outlet obstruction; gastric bypass; obesity; weight loss**

INTRODUCTION

Obesity and morbid obesity are becoming increasingly more prevalent causes of impaired quality of life and decreased life expectancy throughout the world (1,2). Many strategies to promote weight loss, including medications and surgical techniques, have been developed; however, very few have proven effective. As the rates of obesity continue to climb worldwide, there is a growing pressure on the medical community to develop less invasive, less permanent procedures that can provide long-term weight loss results similar to gastric bypass. One such development is the intragastric balloon (IGB), a temporary, free-floating, space-occupying device placed endoscopically into the stomach to decrease gastric volume and provide a sense of early satiety. In this case study, we report an IGB-induced mechanical gastric outflow obstruction in a patient who presented to a United States (US) emergency department (ED).

CASE REPORT

A 63-year-old, obese, Middle Eastern man with past medical history of hypertension, diabetes mellitus, coronary artery disease, and gout, presented to the ED with 5 days of constant, dull, 5 out of 10, epigastric abdominal pain that came on suddenly while at rest. The pain was

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associated with an inability to tolerate oral intake secondary to nausea and nonbilious, nonbloody emesis of undigested food. He tried over-the-counter calcium carbonate at home without relief. He had no bowel movements or passing of flatus for the 3 days prior to presentation. On review of systems, the patient reported subjective fevers, chills, and decreased urine output, but denied chest pain, shortness of breath, dysuria, or hematuria. His social history was significant for a 30-pack-year tobacco history, and his surgical history was significant for uncomplicated placement of a bio-enteric IGB 2 months prior to presentation. He had lost 20 pounds since that time.

On presentation, the patient was afebrile, heart rate 96 beats/min, and blood pressure 100/54 mm Hg. He appeared in moderate distress secondary to pain, but in no respiratory distress. He was obese, anicteric, without jaundice or skin lesions. His pulmonary, cardiac, and neurological examinations were within normal limits. His abdominal examination was significant for hypoactive bowel sounds in all four quadrants and moderate epigastric tenderness and distention, but without palpable masses, rebound, or guarding. His epigastrium was tympanic to percussion. Laboratory studies including complete blood count, complete metabolic panel, amylase, lipase, and lactate were within normal limits.

An abdominal X-ray study showed a circular opacity in the right upper quadrant with displacement of the transverse colon, but without air-fluid levels or bowel distension. A noncontrast computed tomography scan of the abdomen and pelvis showed a rounded, fluid-filled device within the gastric antrum, measuring 9.9 cm × 8.3 cm × 9.1 cm, causing outflow obstruction (Figure 1). The patient was admitted and underwent three esophagogastroduodenoscopies (EGDs) to remove the device. Severe erosive esophagitis in the mid-distal esophagus was noted, and the IGB was found lodged in the gastric antrum (Figure 2). Various maneuvers were used to try to deflate the balloon, including gold probe, sclerotherapy needle, and needle knife. On the third EGD attempt, a 22-gauge endoscopic ultrasound core biopsy needle was used to puncture the balloon and the capsulated fluid was suctioned. The balloon was removed, and the patient was discharged in a good condition with complete resolution of presenting symptoms and gastric outlet obstruction.

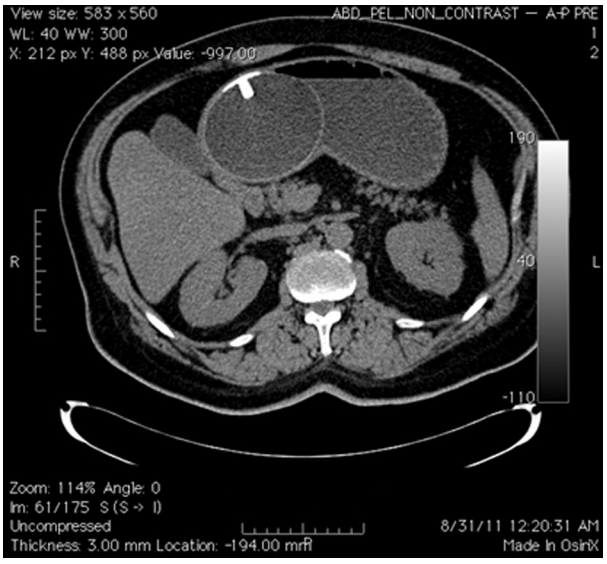

Figure 1. A noncontrast computed tomography scan of the abdomen showing a rounded, fluid-filled device within the gastric antrum, measuring 9.9 cm × 8.3 cm × 9.1 cm, causing gastric outlet obstruction.

DISCUSSION

Bariatric surgery gained popularity in the 1990s and encompasses a variety of procedures aimed at physically shrinking the stomach. Although one study showed no survival benefit with bariatric surgery at 6.7-year follow-up, others have shown long-term weight loss, improvement in cardiovascular risk factors, and reduction in overall mortality (3–5). In two larger-scale studies comparing obese people who underwent gastric bypass surgery to matched controls who did not undergo surgery, one showed a 23% reduction in mortality and the other a 40% reduction in mortality with lower rates of coronary artery disease, diabetes, and cancer in the surgery group (4,5). Currently, the US National Institutes of Health suggests people with a body mass index (BMI) ≥ 35 and serious coexisting medical conditions or those with a BMI ≥ 40 be considered for bariatric surgery (6).

Given the high surgical risk and life-long sequelae of bariatric surgery, less invasive procedures have been

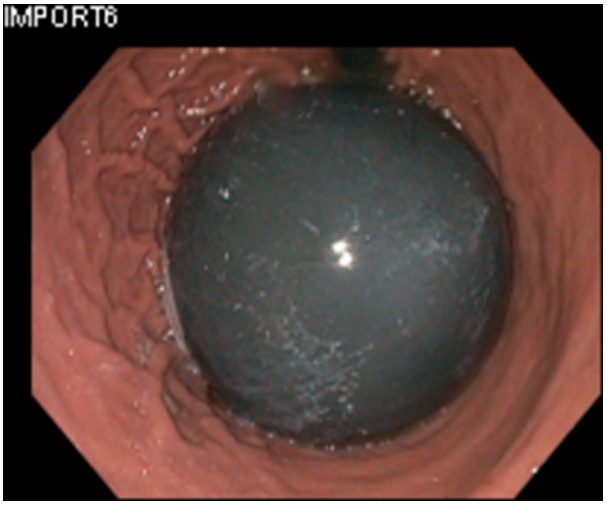

Figure 2. Endoscopic image of the intragastric balloon lodged in the gastric antrum causing outflow obstruction.