Gastric necrosis due to an endoscopically placed intragastric balloon (IGB)

55-year-old woman (BMI: 32Kg/m2) with abdominal pain, vomits, and fever (38.1ºC) three days after the filling up of an IGB from 400ml to 600ml due to unsatisfactory weight loss.

Abdominal examination: distended abdomen with normal bowel sound, without guarding or rebound tenderness.

Analytical findings: leukocytosis (18, 600?L) and elevated CRP levels.

Imaging Findings:

An abdominal X-ray showed a massive gastric distension (Fig. 1) secondary to a gastric obstruction due to the overfilled IGB.

A few hours later the patient presented with septic shock and she was admitted in the Intensive Care Unit where she was intubated and resuscitated. After a nasogastric tube placement, 3L of liquid were drained.

She was referred for a CT that revealed an extensive gastric wall pneumatosis of the fundus, pneumoperitoneum and a small amount of ascites (Figs. 2, 3).

The patient required emergency laparotomy, with a sleeve gastrectomy and posterior intensive care. Surgical findings consisted of an extensive gastric wall necrosis.

Discussion:

Obesity has been referred to by some authors as one of the major epidemics of the 21st century [1-3] and it is one of the most important public health problems in developed countries. There is a wide range of treatments for obesity, from medical treatment (primary prevention, dietary-behaviour modification and pharmacotherapy) to endoscopic (IGB) and bariatric surgical treatment [4].

Intragastric balloons have been used and described since the early eighties as an effective method to decrease appetite [5-6]. They are indicated in few cases such as extremely obese patients not suitable for bariatric surgery, as a method to lose weight before a bariatric surgery and for patients who are refractory to dietary-behaviour modification [2].

Although IGB endoscopically guided placement is easy, several complications have been described. The most frequent are nausea and vomiting, heartburn and patient intolerance. Another less frequent but more important complications are gastric perforation, IGB displacement, bowel obstruction and in one reported case, gastric wall necrosis due to a gastric obstruction [2, 7].

Gastric wall pneumatosis is a rare radiological finding that can be produced by several causes like emphysematous...
gastritis, penetrating gastric ulcer, gastric ischaemia, injuries from endoscopic procedures, corrosive ingestion, gastrostomy placement and massive gastric distention, among others [8-9]. It also has been described in a patient with a gastric obstruction caused by a bezoar [10]. In this case, as in the patient we describe, it was stated that the gastric distention caused an increase of the intraluminal pressure and, therefore, gastric ischaemia, that led to gastric wall pneumatosis and necrosis.

**Differential Diagnosis List:** Gastric wall necrosis, Gastric wall necrosis, Gastric wall perforation due to a nasogastric tube

**Final Diagnosis:** Gastric wall necrosis

**References:**

Description: Severe gastric distention (small arrows) produced by the obstruction of the stomach by the intragastric balloon located in the antrum (big arrows). A small amount of gastric pneumatosis was restrospectively observed (white arrow). Origin: Clínica Universidad de Navarra
Figure 2

A: Gastric pneumatisos (small-arrows). Pneumoperitoneum (white-arrows). IGB (big-arrow).

B: MPR. Free air and liquid adjacent to the anterior gastric wall where the tip of the nasogastric tube has perforated the ischaemic stomach (white-arrows). Pneumatosis (small-arrows). **Origin:** Clinica Universidad de Navarra
Figure 3

Description: A: MinIP oblique sagittal reconstruction showing the presence of gastric pneumatosis (small arrows) as well as the pneumoperitoneum (big arrow) and ascites (white arrows).
B: MPR reconstruction. Gastric pneumatosis (small arrows) and pneumoperitoneum (big arrow).

Origin: Clinica Universidad de Navarra