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Torsade de pointes secondary to long QT syndrome after intragastric balloon placement. A rare but severe complication

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Dear Editor,

The obesity pandemic is becoming one of the most prevalent diseases nowadays. There is a wide spectrum of treatment, ranging from hygienic-dietary measures to bariatric surgery. Endoscopic approach with intragastric balloon placement is becoming increasingly more frequent, due to its technical simplicity, safety and short-term success (1). Although complications are rare, some of them can be severe, so pre-endoscopic evaluation must be carried out carefully.

Case report

A 43-year-old female with a history of grade I obesity (body mass index [BMI] 32.7 kg/m^2) had an Orbera® intragastric balloon implanted successfully. After the procedure she presented frequent nausea and vomiting, partially controlled with antiemetics. After two months, she attended the Emergency Department (ED) with a persistent emetic syndrome and oral intolerance. She suffered from a short-term loss of consciousness (syncope), for which she was admitted. The laboratory tests showed

metabolic alkalosis with severe hypokalemia (K+ 1.8 mmol/l), so fluid therapy was initiated for hydroelectrolytic replacement. During the patient's stay in the ED, two episodes of polymorphic ventricular tachycardia-*torsades de pointes* (PVT-TDP) occurred, leading to cardiac arrest, and requiring electrical cardioversion in order to restore sinus rhythm, in addition to a temporary pacemaker placement. Telemetry showed a corrected QT interval of > 500 ms, compatible with long QT syndrome (LQTS).

Once the patient was hemodynamically stabilized in the Acute Coronary Care Unit, an upper endoscopy was performed. The intragastric balloon located in the fundus was removed using an extraction kit (Tontarra Medizintechnik GmbH), puncturing and aspirating 500 ml of saline solution, and extracting the collapsed balloon with a pair of curved hooks, without any complications. After this, a complete examination of the gastric cavity was performed with no visible mucosal lesions. The patient achieved an adequate oral intake afterwards, and no recurrence of emetic episodes were noticed.

Previous electrocardiograms (ECGs) were reviewed, revealing a prolonged QT interval. A genetic study confirmed a congenital type 1 LQTS, and treatment was initiated with beta-blockers. A bicameral automatic defibrillator was implanted in order to prevent recurrences.

Discussion

Treatment of obesity with intragastric balloon placement is generally a safe procedure, with an estimated rate of serious complications of 0.70 % (2). It is essential to have a proper pre-endoscopic evaluation, including a correct indication for the balloon and a systematic evaluation considering the patient's medical history and comorbidities.

Asymptomatic LQTS may present with episodes of PVT-TDP or cardiac arrest precipitated by certain medications (e.g., metoclopramide) or hydroelectrolytic imbalances (e.g, hypokalemia) (3). Therefore, a standardized evaluation of ECG before intragastric balloon placement is a simple measure which may be crucial to prevent these rare but serious complications.

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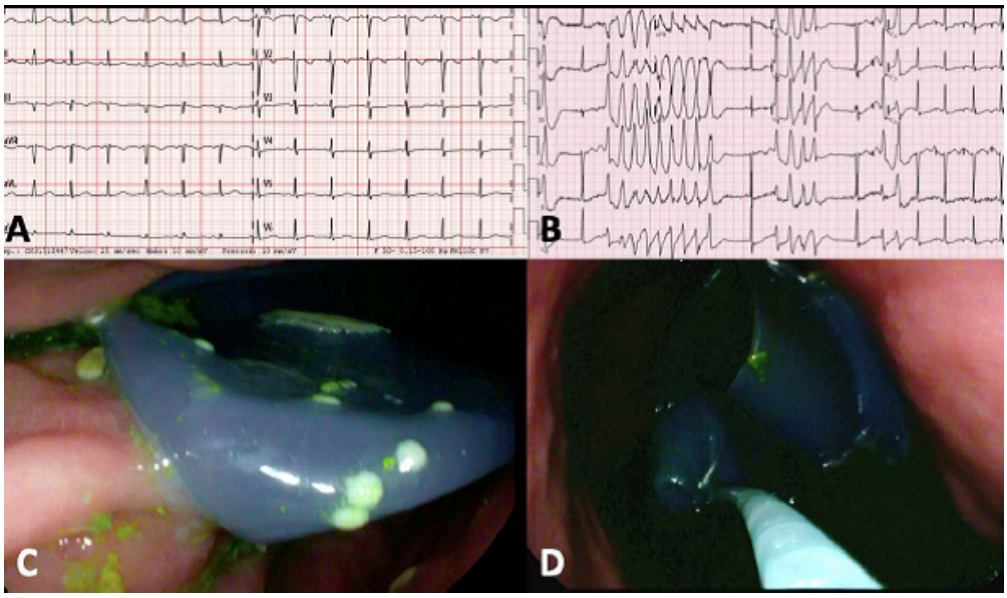

Fig. 1. A. Electrocardiogram (ECG) image. Basal ECG (year 2018) showing QT interval of 510 ms. B. Electrocardiogram (ECG) image. ECG of acute episode of polymorphic ventricular tachycardia *(torsades de pointes).* C. Endoscopic image. Urgent upper endoscopy showing deflated balloon after metal needle puncture and extraction of saline solution. D. Endoscopic image. Urgent upper endoscopy showing successful extraction of balloon with a pair of curved hooks (Tontarra Medizintechnik GmbH).