



Symptomatic Non-acidic Reflux in a Patient With Chronic Autoimmune Atrophic Gastritis Successfully Treated With Anti-reflux Surgery

TO THE EDITOR: We present the case of a patient with chronic autoimmune atrophic gastritis (CAAG) with non-acidic gastroesophageal reflux disease (GERD) demonstrated with 24-hour multichannel intraluminal impedance-pH (MII-pH) monitoring who was successfully treated with laparoscopic antireflux surgery. Written and oral informed consent was obtained from the patient for the communication of this case.

A 56-year-old woman with no relevant medical history was referred to our Motility Unit because of refractory gastroesophageal reflux. She complained of a 2-year history of daily alimentary non-acidic regurgitation that occurred mainly in the recumbent position and interfered with her sleep. She had also frequent heartburn, belching, and chronic dry cough, also predominant in the recumbent position. She had previously received treatment with esomeprazole 40 mg twice a day but reported no improvement. A previous esophagogastroduodenoscopy (EGD) revealed a 5 cm axial hiatal hernia with no esophagitis. Serum vitamin B12 levels were low in the blood analysis (134 pg/mL), that were otherwise unremarkable. A water-perfused conventional esophageal manometry revealed a normal upper esophageal sphincter, normal peristalsis and a very hypotensive lower esophageal sphincter (2 mmHg mean expiratory pressure). Twenty-four-hour off-therapy esophageal pH monitoring detected no acid reflux (0 acid refluxes, 0% acid exposure time). With the suspicion of CAAG and associated non-acidic GERD, a new EGD, an autoimmune panel, and a 24-hr MII-pH monitoring were undertaken. EGD detected no new macroscopic findings, but biopsy specimens revealed chronic gastritis with glandular atrophy and intestinal metaplasia that was more intense in the body, with no dysplasia. Anti-parietal cells antibodies and anti-intrinsic factor antibodies were positive. MII-pH monitoring detected 366 total refluxes (365 non-acidic, 32% proximal extent) and a bolus exposure time of 7.2%. She marked during the study 12 regurgitation and 2 heartburn episodes, all of which were preceded by reflux, and 37 coughs, 26 preceded by reflux. Symptom association probability

and symptomatic index were positive ($> 95\%$ and $> 50\%$ respectively) for all 3 symptoms.

The patient was offered surgery, which she accepted, and underwent laparoscopic Nissen fundoplication with associated hiatal repair. She experienced great improvement, with remission of all symptoms (regurgitation, cough, dysphagia, and belching). Post-surgical manometry and MII-pH monitoring revealed objective improvement: lower esophageal sphincter mean resting pressure of 11 mmHg, 79 non-acidic refluxes, and bolus exposure time of 1.2%.

This case report represents, to our knowledge, the first communication of a patient with objectively proven GERD due to non-acidic reflux in the context of CAAG who was satisfactorily treated with fundoplication, with improvement in symptoms and in objective parameters. Old reports described patients with achlorhydria with esophagitis that was attributed hypothetically to biliary reflux, but with no objective demonstration.¹ More recent studies showed the utility of MII-pH monitoring in demonstrating symptomatic refluxes in patients with CAAG, but they reported no treatment outcome other than improvement with sucralfate in one case.^{2,3} In spite of hypo- or achlorhydria, patients with CAAG do still have gastroesophageal reflux, mostly non-acidic, and if it causes symptoms it will be constitutive of a proper GERD. MII-pH monitoring is the test of choice in this setting due to its capacity of detecting any type of reflux. Patients so diagnosed would be candidates to GERD treatments such as baclofen or anti-reflux surgery, as are proton pump inhibitor-refractory conventional GERD patients whose symptoms are due to persistent refluxes as demonstrated as well with MII-pH monitoring done on-therapy with proton pump inhibitor.^{4,5}

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Conflicts of interest: None.

Author contributions: All authors were involved in the clinical management of the patient, all planned the communication of the case and all were involved in the design of the report. Carlos Teruel drafted the manuscript; and María Jesús de Higes, Patricia Luengo, and Eduardo Lobo made contributions for the manuscript and approved the final draft submitted.
